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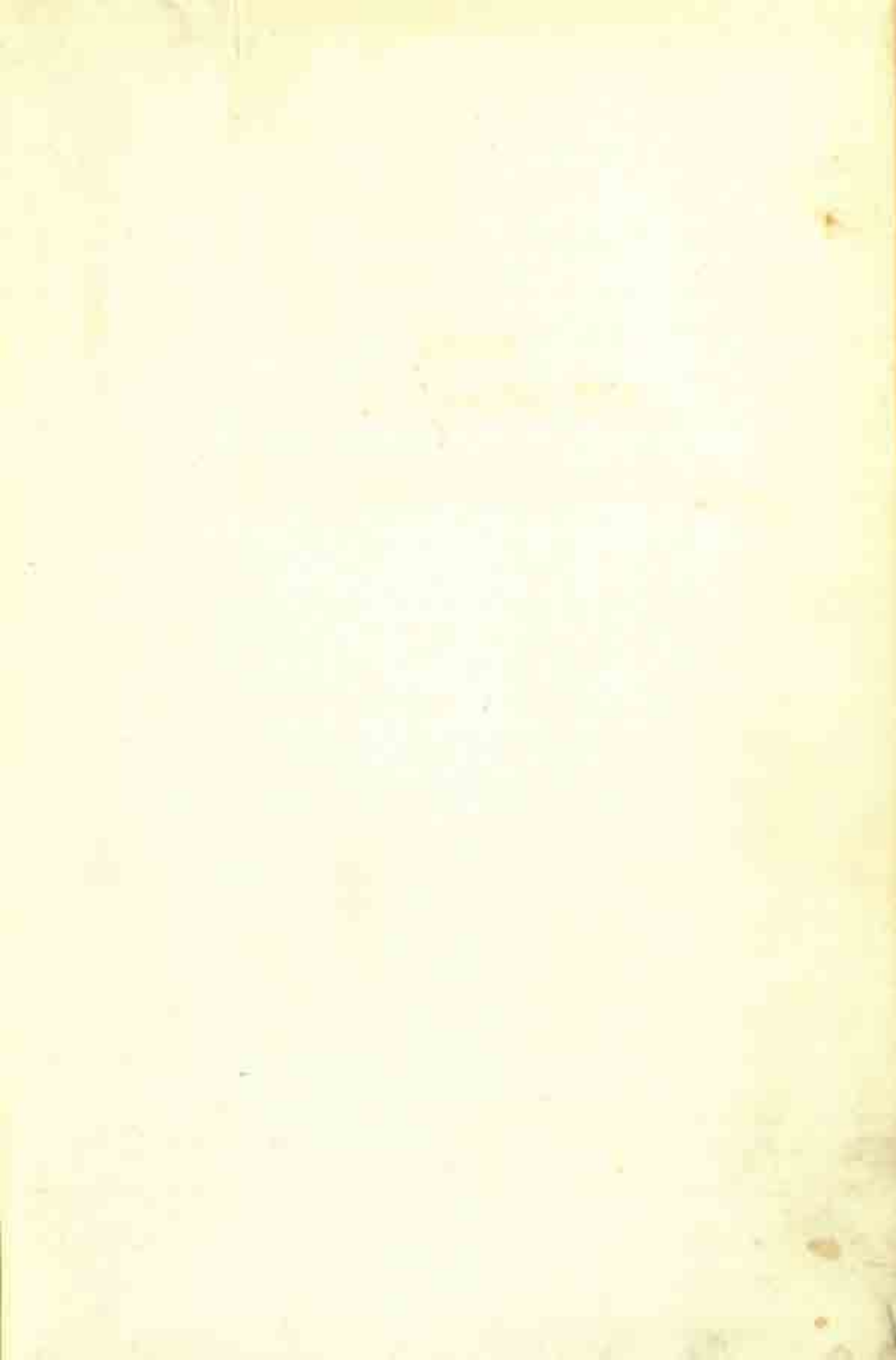
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NO. 1

ETHNOGRAPHICAL MATERIAL FROM NORTH AMERICA IN SWISS COLLECTIONS¹

By DAVID I. BUSHNELL, JR.

I—GENERAL COLLECTIONS

Although the great majority of the museums in Switzerland are devoted to the preservation of material relating to the history and development of that country, including numerous collections of objects recovered from the "stations" dating from the stone, the bronze, and the iron ages, there are, nevertheless, valuable ethnological collections gathered from various parts of the world, including some old and very interesting objects from North America.

Many of the pieces forming the American collections were brought back by travelers or other persons who resided for a time in America during the days when such things were easily obtained. It is evident that the collectors chose good examples of the different types and classes of work. This is most apparent in the collections in the Historisches Museum in Bern, as will be shown later. For this reason the specimens are of special interest and value at the present time. Moreover, many of the pieces in the Bern Museum bear old labels or marks of identification, usually the name of the tribe, probably written when the objects were obtained from the Indians; such marks of course add to the value of the specimens.

Collections of ethnological material from North America are preserved in the museums in Zürich, Basel, Bern, and Neuchâtel, to-

¹ Copyright, 1907, by David I. Bushnell, Jr.

gether with a few pieces in Lausanne.¹ Of these the collection in Bern is of the most interest and importance; for that reason it will be described more in detail.

The small Ethnographical Museum in Zürich — this should not be confused with the Swiss Landesmuseum which is devoted exclusively to material relating to Switzerland — has a rather limited American collection. The most interesting piece is an excellent old catlinite pipe with a long, well-decorated stem. There are also some unusually good moccasins, all old and elaborately decorated with dyed quills; with the exception of a very good Navaho blanket the remainder of the collection is of no interest.

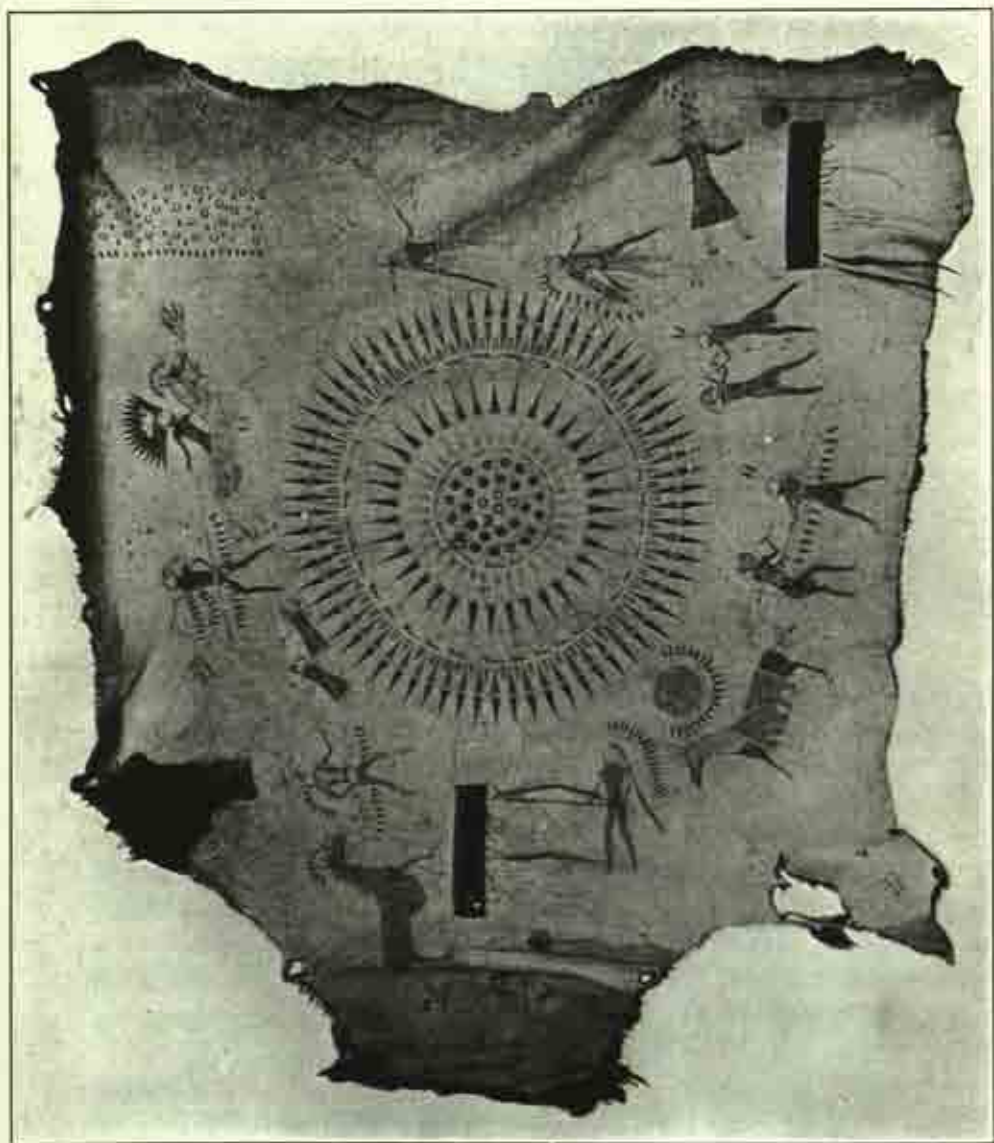
In the Basel Museum is preserved a small American collection. The specimens from the United States and Canada are of minor importance; but there are some extremely interesting things from Mexico, including a series of masks, one made of a greenish jadeite, another of obsidian. These are all small, but are well executed and are in a good state of preservation.

The most important pieces in this collection are the carved wooden panels from Guatemala, which have been in the museum since 1878 and have already been described and figured.² These ancient pieces are among the most valuable relics from America preserved in European museums. Considering their nature, being made of wood and not more than 50 mm. in thickness, it is difficult to understand how they lasted so many years in such a climate. But fortunately they are quite well preserved, and the carving, though low in relief, is yet clear and distinct.

The ethnological collections in Bern are preserved in a large hall in the Historical Museum, a modern building opened in 1894. In this museum are many specimens which were secured during Cook's third voyage, by the artist and draftsman Webber, a member of the expedition, who was a native of Bern. Among these are some pieces from the northwest coast of America, including a

¹ I regret my inability to include here the museum in Geneva, where there are probably some specimens from America; during my visit to that city the museum was closed, and I was unable to find anyone in authority.

² Léon de Rosny, *Les Documents Écrits de l'Antiquité Américaine*, in the *Memoires de la Société d'Ethnographie*, no. 3, Paris, 1882. Notes on the inscriptions were later published by Professor Seler in the *Zeitschrift der Gesellschaft für Anthropologie*, Berlin.



CROW BUFFALO ROBE. PRESENTED TO THE HISTORICAL MUSEUM, BERN, SWITZERLAND, IN 1838

very large, well-preserved wooden mask representing a human face and showing traces of red coloring, several harpoon heads, and a mounted adz from the region of Nootka sound. These were collected during the year 1778. There are also a few pieces from southern Alaska, including several skin garments, two hats, various harpoons, etc.; these together with some good baskets from Oregon were given to the museum in 1859. The larger part of the American collection, however, is formed of material from the upper Missouri valley tribes.

Early in the last century, about the year 1810, a native of Bern, J. S. G. Schoch by name, went to America and settled in St Louis, remaining in the West until 1838, when he returned to his native city. While in America he formed an extensive collection among the various tribes in the upper Missouri valley. This collection is now in the museum in Bern, where it was placed soon after it was brought from America.

According to a note in the museum catalogue all the pieces were obtained directly from the Indians. Were it not for this statement it would be possible to consider some of the material as having come from the old Clark museum. Such may be the case, although without definite proof to the contrary we shall probably have to accept the statement in the catalogue as correct.

In this collection are two excellent buffalo robes—the more important as well as the more interesting of these being shown in plate 1. The extreme length is just two meters and the greatest width is 1.60 meters. In one corner the robe is marked "Crow I.", showing it to have been collected among the Crow Indians. The figures are well drawn, the colors being red, yellow, and green, and a rusty brown which at one time was probably black. The two rectangular pieces attached to the robe are of red cloth; to the lower edges of these pieces are fastened small wisps of horse-hair, some white, others black. Around the top of each wisp of hair is a narrow band of tin. The drawing on this robe evidently represents an encounter between two tribes. It will be noticed that while some figures are represented as having firearms, only short pistols are shown, not long guns, as is more often the case. The second robe is about the same size as the one already described; it has a strip of

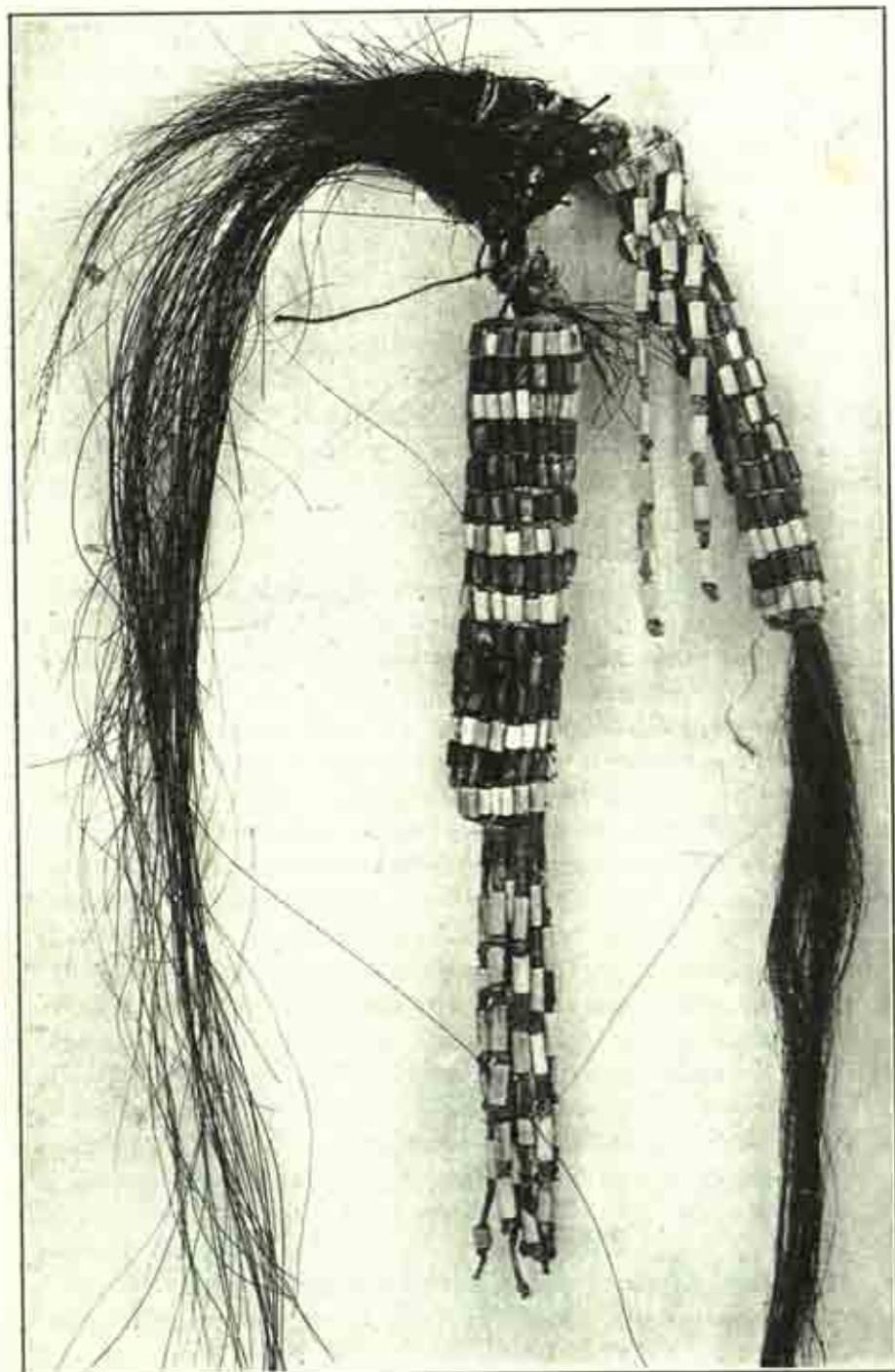
quillwork about 100 mm. in width, extending the entire length through the middle. The quills are dyed various colors and are remarkably bright. The figures represented on this robe are poorly drawn, being more conventional than those on the Crow robe. Both robes are in an excellent state of preservation and are probably in as good condition to-day as when they were obtained from the Indians seventy years or more ago. The first has evidently been in actual use, but the second was probably newly made when it was collected.

Next in importance and interest after the robes are four deer-skin shirts, all very good examples.

One marked "Blackfeet" is an elaborately decorated old piece, measuring 560 mm. across the shoulders. The upper half is dyed black, and in the center of this space is a circular piece of quillwork bearing a cross-shaped design, the decoration on both the front and back of the shirt being similar. Over the shoulders and down each sleeve are rows of small glass beads. Attached to these beaded bands are many small wisps of human hair. Hanging from the right shoulder is one large bear claw having two perforations. The entire edge of the shirt is fringed. Another interesting shirt is one marked "Sac Indians." This is made of very thin skins. Only the edges of the sleeves are fringed, but over the shoulders and down the sleeves are broad bands of quillwork, bordered by narrow bands formed of glass beads. On both the front and the back are represented many human figures. These are shown only in outline, in black, no colors having been used.

Belonging to the same collection are many pairs of moccasins from the different Missouri Valley tribes. The quill decorations on some are exceptionally fine, the colors remaining clear and bright. It is evident that in forming this collection only good specimens were chosen, for among the entire number there is scarcely a poor piece.

In addition to the objects already mentioned, the collection includes many others of lesser interest: A long deerskin coat, having a fur border, is of European design, but the workmanship is good. Many weapons, of which the most interesting is a spear marked "Dakota." This is 1.40 meters in length, having a long iron point; the wooden shaft is decorated with wisps of horse-hair dyed red.



WAMPUM. PRESENTED TO THE HISTORICAL MUSEUM, BERN, SWITZERLAND, IN 1820. (TWO-THIRDS NATURAL SIZE)

Other weapons are: a Sioux bow, many arrows having iron points, several clubs, etc. Another interesting piece is a very large necklace of bears' claws.

From this brief description it will be seen that the collection is one of much interest and importance. As all the specimens are in a remarkably perfect state of preservation, they are, of course, of special value at the present day.

Another small collection in the Bern Museum consists of various specimens from the eastern provinces of Canada, collected by a Captain Malcolm by whom they were given to the museum about the year 1820. Of these the most interesting object is a piece of wampum of unusual shape. This is shown (two-thirds natural size) in plate II. The larger of the two rolls is 100 mm. in length and 21 mm. in diameter; the smaller is of the same length but only 15 mm. in diameter. These rolls are apparently solid, made solely of tanned deerskin, although something may be enclosed. As will be seen, both rolls are covered with wampum, the larger having 15 rows of 18 beads each, the smaller having the same number of rows, each composed of 11 beads. The beads are strung on two flax threads, passing one over, the other under, narrow strips of deer-skin. The two ends of each strip of skin are tied together, thus forming a cylindrical covering over the roll of skin. The beads hanging from the end of the larger roll, likewise those from the top of the smaller roll, are strung on very narrow strips of tanned skin which is knotted between the beads. The perforation in these beads is slightly larger than is usually found in wampum. Human hair, 250 mm. in length, naturally of a rather light brown color and very fine and soft, is attached to, or rather extends from, the lower end of the smaller roll. The hair woven into the mesh between the rolls is very coarse, black in color, and is probably horse hair. The human hair and also the loose strands of beads show traces of vermillion; probably they were at one time entirely covered. A few glass beads are mixed with the shell. This peculiar object is evidently complete, but what it may be or for what purpose it was made is difficult to say.

Other pieces belonging to this collection are two very good deer-skin bags; a small model of a bark canoe; a steatite pipe with a

short quill-wrapped stem; two birch-bark boxes having covers, the whole being elaborately decorated with quills; and other smaller objects.

The last specimens in the Bern collection to be mentioned are two belts which, according to an old label attached to one, were made by an Osage woman named Grothomil, who was in Bern during the year 1828. This woman was one of a party of six Osages who reached Havre on the 27th of July, 1827. Evidently after having been for some months in Paris they visited other European cities—including Bern, where the belts were made.¹

Both belts are made of European wool and are examples of braiding or plaiting, not weaving. The white glass beads were first strung on the threads, consequently they are visible on both sides—in workmanship they are similar to the buffalo-hair bag in the Pitt-Rivers Museum, Oxford.²

The shorter of the two is 700 mm. in length, 120 mm. in width, and has a fringe of the unusual length of one meter extending from each end. This belt is braided of a heavy red wool and is decorated with white glass beads forming a simple design, lozenge-shaped in outline. The longer belt (fig. 1) is made of a similar red wool, but has on either edge a border of green. It is also decorated with white glass beads. The dimensions of this belt are: Length 1600 mm.; width, 105 mm.; length of fringe, 400 mm.

Neuchâtel has an interesting Ethnographical Museum. The most important and extensive collection is from Africa, having been brought back by missionaries. But North America is represented by a small general collection, including several good pieces from Alaska. The best of these is a breast-plate formed of thin strips of walrus tusks. This armor is 310 mm. in width at the top and 430 mm. at the bottom. From top to bottom it measures 400 mm. on the sides, and 450 mm. down the middle line. The strips are

¹ Two pamphlets relating to the Osages' visit to Paris are known: (a) *Six Indiens Rouges de la Tribu des Grands Osages, arrivés du Missouri au Havre, le 27 juillet 1827, sur le navire américain New-England, cap. Hunt* . . . Paris, 1827. (b) *Histoire de la Tribu des Osages*, . . . écrite d'après les six Osages actuellement à Paris. Par M. P[aul] V[issier]. Paris, 1827.

² Bushnell, The Use of Buffalo Hair by the North American Indians, *Man*, 111, London, 1906.

eight in number. To overcome the natural curve of the material a triangular piece of bone has been fitted into the middle of the top; this measures 100 mm. in width and 130 mm. in length. Four strips are fashioned on each side; all are bound together by means of narrow strips of rawhide passing through perforations. The strips of tusks are not more than 4 mm. in thickness. This is an old and evidently a much used piece; the only mark it bears is the one word *Alaska*.

Another piece of interest in this museum is an exceptionally good Sioux pipe, of catlinite, the stem of which is decorated with feathers, beads, and quillwork. This, together with other objects from the same tribe, was acquired by the museum many years ago. In the Musée Cantonal Vaudois, in Lausanne, are preserved a few ethnological specimens from North America; nothing, however, of special value or interest.

In this short account of the American material to be found in the museums in Switzerland, I have referred to all the important collections in the country. But, as nearly every town of any size has a museum of some sort, it is pos-

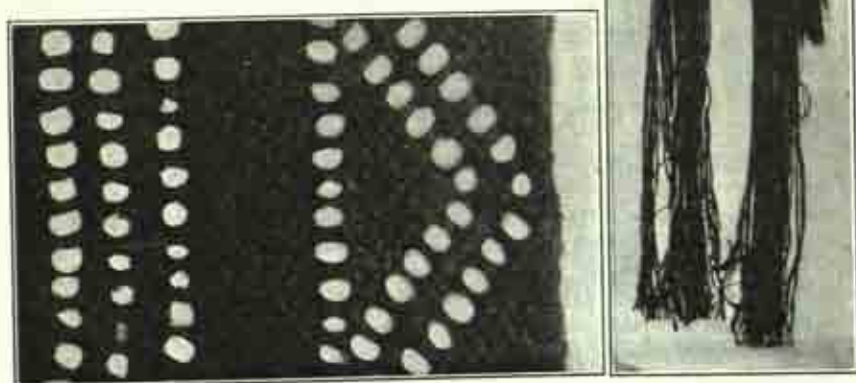


FIG. 1. — Osage belts in the Bern Museum, with detail of the larger, enlarged one-half.

sible that here or there may be preserved interesting and valuable specimens from North America not touched on in this paper.

II. — THE KURZ JOURNAL

The most interesting and valuable possession of the Bern Museum, in reference to North America, is a manuscript journal, together with a large collection of drawings and sketches, made by the Swiss artist, Friedrich Kurz, while among the Upper Missouri Valley tribes during the years 1850, 1851, and 1852.¹ The manu-

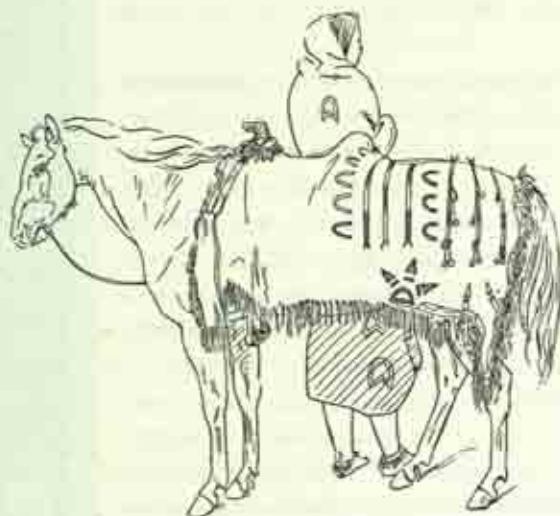


FIG. 2. — Sioux at Council Bluffs; drawn May 25, 1851.

script journal, written in German, covers 294 closely written folio pages and contains much valuable information regarding the manners and customs of the numerous tribes with whom he came in contact.² The sketches and drawings fill one large sketch-book of

¹Through the courtesy of the authorities of the Museum permission has been granted the author to copy the manuscript and to photograph the sketches with a view to their publication, and steps to this end are now in progress. It is expected that the work will appear, in English translation, during the present year.

²Extracts from the journal were printed in the *Jahresbericht* of the Geographical Society of Bern in 1894 and 1896. Some of the sketches, and details from others, — twenty-nine figures in all — were printed at the same time. Five other sketches were reproduced in the popular illustrated paper, *Die Schweiz*, Zürich, Dec. 1900, to accompany a brief biographical note.

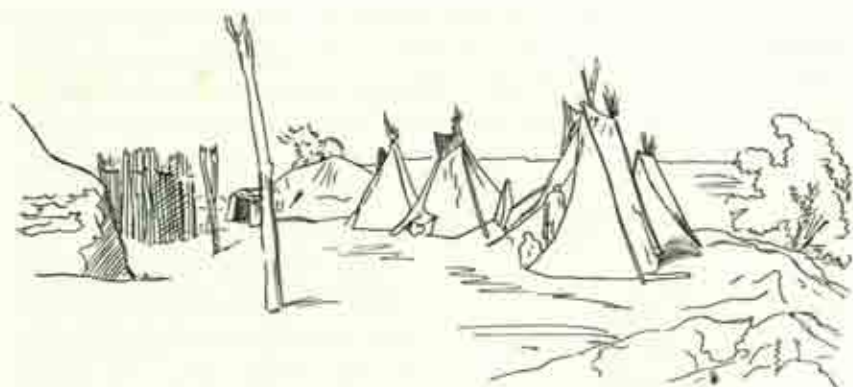


FIG. 3.—The Omaha village near Bellevue in 1851.

193 pages and also a portfolio of loose pieces, for the greater part portraits. In all there are probably about 700 drawings of various sizes, but many of these are in an unfinished state, being merely pencil sketches; it was evidently Kurz's intention to add much of the detail later. Other drawings, however, are in ink, and the details are worked out to a remarkable degree. As already stated, a few of the drawings have been copied, but those shown in this article were never before reproduced.

Friedrich Kurz was born in Bern in 1818. During the year 1846 he went to America, landing at New Orleans and afterward going up the river to St Louis. His object was to study the native tribes in their natural surroundings and later to publish a series of plates



FIG. 4.—Otoes on the bank of the Missouri at Bellevue, June, 1851.

with descriptive texts. In his journal he wrote on the 28th of October, 1851: "My plan is still for the gallery . . . I shall have lots of correct drawings." But this wish was not to be fulfilled, as he was unable to find a publisher, George Catlin's work having then been translated and printed in German, while there had appeared previously the somewhat similar work by Maximilian, Prince of Wied-Neuwied, illustrated by Bodmer, the friend of Kurz.



FIG. 5.—Omaha; drawn June 8, 1851, probably at the Omaha village near Bellevue.

On the 18th day of April, 1851, Kurz arrived at St Joseph and there had his first glimpse of true Indian life. He made a long entry in his journal that day:

St Joseph, formerly the trading post of Joseph Robidoux, is at the foot of the Blacksnake hills on the left bank of the Missouri . . . The streets are crowded with traders and emigrants on their way to California and Oregon. Many Indians of the tribes of the Pottowatomis, Foxes (Musquakes), Kikapoos, Iowas, and Otoes are continually in the town. . . . In summer the *Bourgeois*, or Chiefs, the clerks and *Engagés* of the fur companies enliven the streets. . . . St Joseph is now what St Louis was formerly — their gathering place.

Leaving St Joseph, Kurz went up the river to Council Bluffs, then a most insignificant place, where he obtained much information and made many interesting drawings.

May 14th, 1851, he crossed the Missouri to Bellevue (near Omaha, Nebraska), the trading-post of Peter A. Sarpy, who traded chiefly with the Omaha. While there on the 16th, he wrote:

In Bellevue I have drawn an Indian winter house made of earth, and also a Pawnee girl. Her costume is distinguished by its great simplicity — a skirt to the arms held by straps over the shoulders.

Four days later, on May 20th, he entered in his journal :

Again crossed the river to Bellevue in order to visit the Omaha village some six miles distant ; went over the bluffs, as being the shortest way,

then crossed the high prairie . . . to the *Papillon* creek which partly surrounds the village of the Omahas. The village itself is built on a hill.

. . . The camp or village is composed of leather tents and earth-covered lodges [fig. 3]. Between the tents and lodges are scaffolds for drying meat and also an enclosure for the horses . . . I walked into the village and watched a group of young men endeavoring to throw lances through rolling rings, the others being gathered on top the earth lodges, as spectators and judges. . . .

Quitting Bellevue and Council



FIG. 6. — Sitting figure is an Omaha, showing tattooing; drawn at Bellevue, June 8, 1851. Standing figure is a Crib [Cree]; drawn at Fort Union, Sept. 28, 1851.

Bluffs he continued up the Missouri: passing Fort Pierre where cholera was raging, he arrived at Fort Berthold on the 9th of July, 1851, and remained until the 1st of September. During that period he made some of his most valuable drawings and recorded many interesting events.

On the 26th of July, 1851, Kurz made the following entry in his journal :

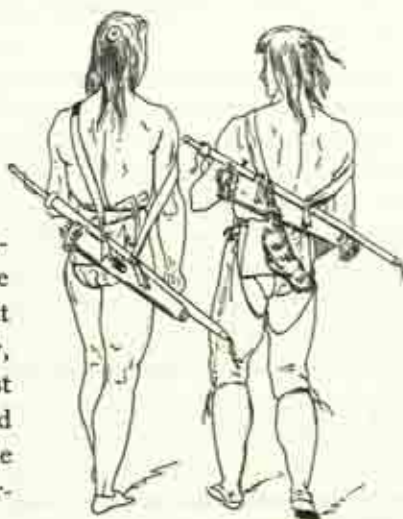


FIG. 7.—Herantsa [Hidatsa], showing quivers with bows and arrows, also hair ornaments. Drawn at Fort Berthold, July 16, 1851.

Two days of great interest have passed. Yesterday a dozen *métis* de la Rivière Rouge [half-breeds from Red river] arrived with a Catholic missionary; they wished to buy or barter horses. They had left their great camp one day's journey from here. They were all very gaudily dressed, half in European, half in Indian style. Tobacco pouch, belt, knife sheaths, saddles, shoes, and whips were richly ornamented with glass beads, porcupine spines, or colored quills, — artistic work of their wives or sweethearts, — but their dress was of cloth after our



FIG. 8.—Girl with paddle and "bull-boat"; drawn at Fort Berthold, July 27, 1851.

pattern, without vests. The young priest, Charles Lacombe, at once began to preach; he had a good deal of fault to find with us. . . .

This morning came the news that a band of *Sauteurs*¹ (Ojibua, Chippewa) would visit us from the camp. The *métis* are half Chippewas and half Canadians, Scotchmen, even Swiss, from Lord Selkirk's old colony. Finally when the *Sauteurs* had completed their toilet, which is a matter of great moment among the Indians, they sallied forth from a clump of woods and marched toward us. There



FIG. 9.—Herantsa [Hidatsa] at Fort Berthold, July 31, 1851. Showing peculiar hairdressing and decorated buffalo robe.

¹ Note by Kurz: The name "*Sauteurs*" was given to those Ojibuas that lived around the Sault Sainte Marie.

were about one hundred of them, mostly in warrior's garb, and mostly on foot, though a few rode on horseback alongside of the column. Five chiefs with ornamental peace pipes and the emblems of their "coups" all over their attire, opened the procession; behind them in bands came the soldiers, singing, beating their drums, and shooting.¹

Then came three women in a costume different from that in use in this neighborhood.² (Fig. 10.)

The rear of the procession was formed by a troop of young men who as yet had gained no rank. Behind the fort, Quatre Ours, the Herantsa [Hidatsa] chieftain, and La Longue Cheveleure,³ the famous orator, were awaiting the procession; when they approached, the Sauteurs stopped, in order to hear the orator's welcome, whereupon, intoning a song, they rapidly and proudly marched into the village and sat down on the narrow, dry edge of the open place (at that time a great slimy, stinking pool with thousands of frogs). The five chiefs lay their pipes in front of them, the pipe heads on the ground in the direction toward the hut of Quatre Ours, the stem of the pipe on a wooden fork, which was stuck upright in the ground. The pipes were not yet lit; splendid garments were brought to the chiefs from various directions and were laid down on the ground before their pipe-heads without remarks, but with much solemnity.⁴ Meantime singing was constantly going on. . . .



FIG. 10. — Sautouse [Saulteur] woman; drawn at Fort Berthold, June 27, 1851.

¹ Note by Kurz: When visiting, the firing of guns before arrival is a sign of peaceful disposition.

² Note by Kurz: The coat of blue cloth extends as far as the shoulders and is held up by two broad, ornamental braces over the shoulders, as well as by a belt above the hips; the Pawnee are also very finely ornamented. [See page 10.]

³ Note by Kurz: The two chiefs looked comical enough in their black coats. They wore perfectly black clothes in European style, without shirts, with breech-cloth and black grousers, very long hair, no gloves, but fans made of eagles' wings.

⁴ Note by Kurz: The garments offered were for the most part so-called *habits de cheffre*, that is to say a kind of motley colored military coat of red, blue, or green cloth with white stripes, or richly ornamented leather shirts.

July 27. The métis are gone. Our Indians have crossed the river again, to hunt buffaloes. As soon as these animals are seen from afar, the soldiers gather in their huts (the so-called assembly lodge) to deliberate whether the hunt is to take place. The decision is announced by a caller from the assembly lodge. No one is allowed to go buffalo hunting alone against the decision of the soldiers, in order that all may have an equal chance. . . .

Kurz left Fort Berthold on September 1st for Fort Union, at the mouth of the Yellowstone, where he arrived a few days later. There on the 4th of October he made this entry in his journal :



FIG. 11. — Drawn (probably at Fort Berthold), July, 1851, showing an uncommon form of hair-dressing.



FIG. 11a. — Chippewa woman in mourning. Drawn at Fort Union, at the mouth of the Yellowstone, Sept. 28, 1851.

Blackfeet this side the mountains 1500 lodges with about 4000 men ; Crows 440 lodges with about 1200 men. Assiniboin of this neighborhood 420 lodges, 1050 men : from 2-3000 Assiniboin live far above, near lake Winnibeg. Kristenaux [Cree] trading here 150 lodges but in all about 800. Ricares 600 men in 300 lodges. Chippewas near 3000 lodges. Sioux 2000.

That Kurz was always looking for details to sketch is shown by this note :

Oct. 13, 1851. As we were weighing and hanging up dried meat, a lot of Assiniboina came to the fort with squaws and many horse and dog travays [travois]. As a whole these trading parties do not show much of interest, but there are always many details to be picked up, of great value to a painter. . . .

Remaining at Fort Union all winter, Kurz left there April 19th, 1852, for St Louis, where he arrived on the 25th of May. While among the Indians he formed a large collection of ethnological material, but it was necessary for him to dispose of it in St Louis before starting for his native city of Bern. He returned to his home in September of the same year and lived there until his death in 1871.

WASHINGTON, D. C.

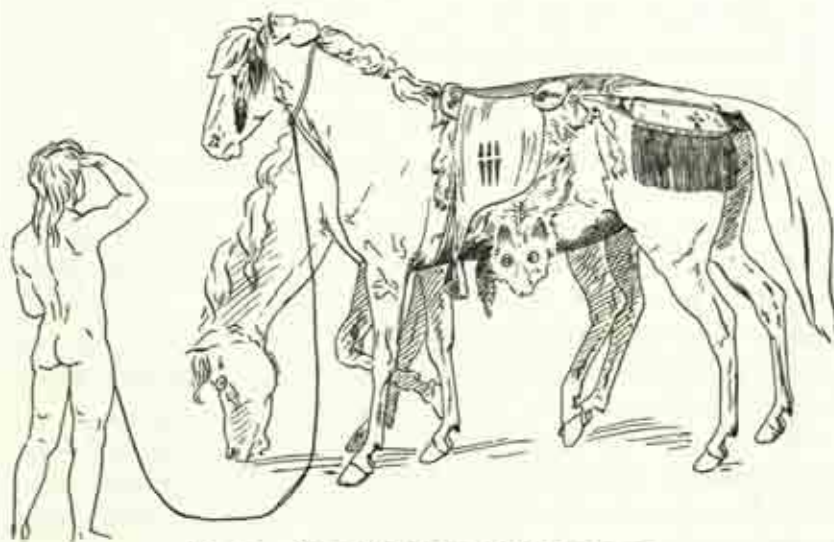


FIG. 12. — Crow Indian horse, showing trappings.

THE SOUTHERN LIMIT OF INLAID AND INCRUSTED WORK IN ANCIENT AMERICA

By T. A. JOYCE

The entire question of inlaid and incrustated work in America is interesting, especially if the geographical limits within which the art was practised be considered. The incrustated turquoise objects of ancient Mexico, of which remarkable specimens are treasured in several museums, notably the British Museum, are too well known to need more than passing mention. The northern limit of such work was probably in Arizona and New Mexico. Various examples recovered from ancient ruins in those territories are now preserved in American collections.¹

Inlaid work was also practised in the Antilles, as is known from examples in the British Museum. These are three remarkable wooden figures found in a cave in Jamaica in 1792. Two of them have a white shell inlay representing the teeth, and all of them have hollow eye-sockets, still containing a thick layer of resinous substance which evidently served as the matrix for inlay of shell or other material representing the eyes.²

It is with the object of attempting to fix the southern limit of this class of work that I wish to place on record two interesting specimens, now in the British Museum, from Peru. The first is a bone implement, possibly a dagger or a "scraper," inlaid with turquoise and pyrites; the second a wooden object of uncertain nature incrustated with shell and a mineral resembling turquoise.

Of the first the inlaid work is subsidiary to an engraved ornament, of which it emphasizes certain details; this engraved ornament shows great skill, the certainty and purity of line being equal to the best products of ancient Peruvian art.

¹ See Fewkes in *Twenty-second Ann. Rep. Bureau Am. Ethnology*, 1903, also Pepper in *American Anthropologist*, VII, no. 2, 1905.

² Fewkes in *Twenty-fifth Ann. Rep. Bureau Am. Ethnology*, 1907, p. 216. "The Porto Ricans made wooden seats in the form of animals, and inlaid the eyeballs and shoulders with shell. So do the tribes of the Orinoco today."

The dagger (fig. 13) has been fashioned from a long mammalian bone, of which the condylar extremity has been carved to represent a left human fist closed, the thumb bent across the first joint of the fore-finger and resting on that of the second, which is raised above the level of the rest. The remainder of the bone represents the fore-arm as far as a point about 2 cm. above the elbow; here the bone has been split longitudinally, and the part corresponding to the upper surface of the arm removed; by this means a long flat blade, the extremity of which is now broken, has been formed.

The ornamentation—engraving and inlay—is confined to the "handle" as opposed to the "blade" of the weapon, and is distributed as follows: Longitudinally down the back of the hand run four panels of engraving; transversely across the back of the arm between wrist and a point just below the elbow, three panels; above the last on the back of the arm, three chevron-shaped panels, the line joining their vertices being at right angles to the major axis of the weapon. Along the under surface of the arm and the thumb are disposed irregularly a number of anthropomorphic figures: one along the thumb from the first joint to the wrist; a group of three from wrist to a point 16 mm. below the elbow; and one, the largest, occupying the under surface of the arm from here as far as 2 cm. above the elbow. Engraved ornament also appears on the finger-joints.

To deal with the series of panels in de-



FIG. 13.—Incrusted and engraved dagger from Peru ($\frac{1}{4}$ natural size).

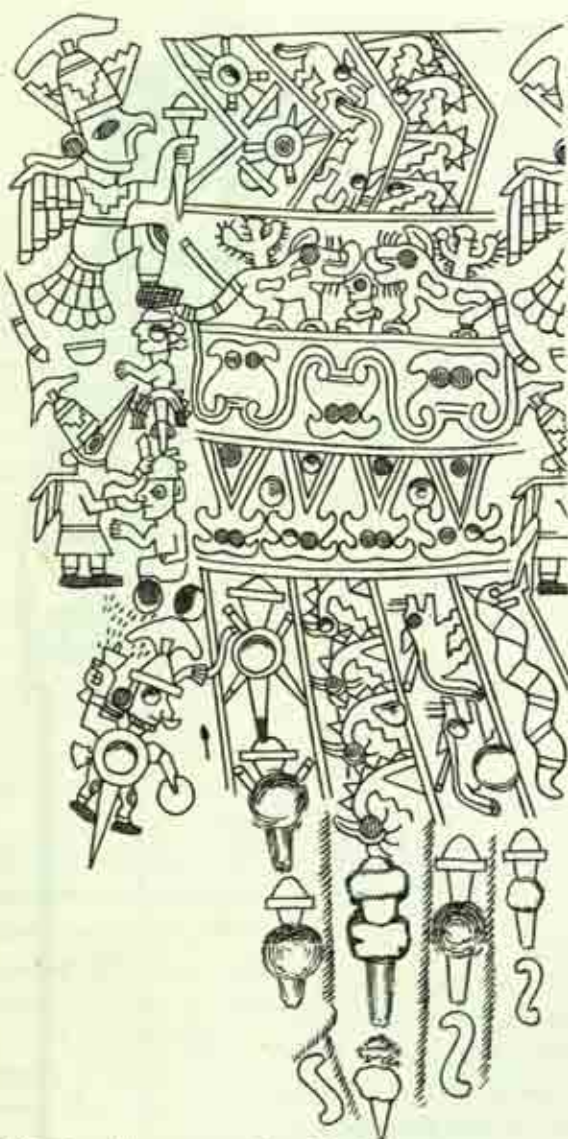


FIG. 13a. —The ornamentation of the incrustated and engraved dagger (natural size).

tail: holding the dagger handle downward, the back of the arm toward the observer, the first panel on the left on the back of the hand contains an engraved design which appears to represent a trophy of arms—a shield, a stone-headed club, and two spears. Similar "trophies" are found occasionally painted on the red pottery. The next panel to the right contains a conventional bird design with three repeats, the next two quadrupeds, probably jaguars, and the last a grotesque serpent. It may be noticed that each of the two quadrupeds appears to have a spear fixed in its back.

The lowest transverse panel is filled with a running curvilinear conventional design, which appears in a more elaborate form in the next panel above. In the panel above this is engraved a more

elaborate scene: a small human figure, head to left, with hands bound behind him, is seated between two conventional jaguars which face inward; a cactus plant appears over the back of each.

Of the chevron-shaped panels, that on the left contains two representations of the "trophy-like" object mentioned above; that in the center two conventional jaguars (?); that on the right a modification of the bird design mentioned as forming the ornamentation of the second panel described. In this case the heads of the birds have disappeared, and were it not for the presence of the former panel, it would be impossible to guess the origin of the design in the latter.

Of the anthropomorphic figures on the under surface of the arm, that on the thumb represents a man standing, head to right. On his head he wears a helmet with the characteristic Chimú crest, and a long plume in front; he wears a discoid earplug and a semilunar nose ornament. His right arm is raised and grasps what appears to be a rattle; the meaning of a number of small incisions—around and above the last is obscure. In his left hand he holds a circular disc, and at his waist are slung a circular shield—similar to those seen in the "trophies"—and a sword. He appears to wear stockings with a circular ornament at the knees, and shoes.

Above this is a group of three figures; one on the left, standing, with head to right, wears a helmet with the Chimú crest and a bird mask with long beak; on his back are wings, and he wears a skirted tunic with a belt at the waist, and shoes. His arms are extended, and he holds by the head a figure seated facing him, wearing a round close-fitting cap, who stretches out his right arm. Immediately above this figure, in fact appearing to rest on his head, is a third, the bust of a man facing left with round cap, left arm outstretched; below the waist the figure terminates in a kind of spike; at the waist is a horseshoe-like object with pendant ends, which may represent fillets. The face of the first figure is raised toward this last individual, and it seems possible that the whole scene may represent a sacrifice performed by a priest in ceremonial garb before the figure of a god.

The last and largest figure is a man in a sitting position, head to right; on his head is a helmet with Chimú crest and decorative

ittings; he wears ear ornaments, a bird-mask, wings, and a tail. On his legs, apparently, are stockings from thigh to ankle, with circular ornament on the knees, and shoes on his feet. Only one arm is shown: this is stretched out and bent up at the elbow; in the hand is grasped a stone-headed club, similar to those shown in the "trophies," of a type which is frequently depicted on the red pottery in the hands of masked warriors.

On the third joints of the fingers, which form the upper surface of the "butt" of the implement, are engraved "trophies" similar to those already mentioned; that on the second finger is worthy of especial remark, since the head of the club is represented by a single lump of turquoise inlay, and affords the only instance in which a fragment of inlay has been cut to a definite shape, other than circular, as part of the design. A similar "trophy" appears on the second joint of the same finger, the corresponding joint of the other fingers bearing merely a sort of "pothook" design engraved. The two "trophies" on the second finger are further distinguished by the fact that the centers of the shields are represented by fragments of pyrites.

The inlaid ornament, other than that already mentioned incidentally, is distributed as follows: A fragment of blue turquoise is set to represent the eye and ear ornament (where present) of each anthropo- and therio-morphic figure; and the centers of each shield, whether carried by an individual or set in a "trophy" (except in the case of the two shields indicated above, where the material is pyrites).

Similar fragments of turquoise are set in the detached circles which appear in the two transverse bands of curvilinear conventional ornament on the back of the arm, and on the back of the hand just below the little finger. The nails of the fingers were also represented by inlay, but the material has unfortunately disappeared. Except in the case of the fingernails, and the head of the club and centers of the shields on the second finger, the cavities in which the inlay is set are more or less circular, and appear to have been made by means of a rotary drill with a blunt, rounded point.

The fragments of inlay have been fixed in these cavities by

means of some resinous material, traces of which are to be seen in some of the holes whence the inlay has dropped.

On the wrist at the root of the thumb are two holes, side by side, which communicate with the inner cavity of the bone. These show no traces of having been inlaid, and their sides are parallel and unsuitable for the purpose. It seems possible that they may have served as passages for a suspension cord.

The implement was acquired with other objects in 1893 from a Mr Batchelor who obtained it from a grave in the Santa valley, on the border line between the provinces of La Libertad and Ancachs.

The second specimen, of in-crusted work, has been acquired quite recently (1906) by the British Museum and consists of a flat wooden knob, diameter 45 mm., with seven rectangular projections cut from the solid and disposed at equal distances around the edge (fig. 14). These projections stand out in relief not only laterally, but also above and below. On the under side a cavity 30 mm. in diameter has been hollowed out to a depth of 10 mm. The upper surface has been plastered with a thick layer of some resinous material, to the height of the projections mentioned above, which form a sort of broken containing rim. In this resinous matrix has been set a mosaic of shell, of which only the center portion, diameter 28 mm., remains. The design, a conventional double bird, cut out of a single piece of pearl shell, stands out against a background of pieces of red and purple shell. The eyes of the birds are formed of fragments of blue-green mineral, very like turquoise in appearance.



FIG. 14.—Incrusted wooden knob from Peru, showing double-bird design.

The mosaic is part of a large collection, formed during a period of more than twenty years by Dr de Bolivar in the provinces of Lambayeque, La Libertad, and Ancachs, the majority of the objects coming from graves in the Pacasmayo valley. The collection affords many instances of this double-bird design, particularly among the textile fabrics, one of which is reproduced herewith (fig. 15).

Both the specimens described above, therefore, come from approximately the same area.

But another, and perhaps more interesting, question is raised by these two specimens of turquoise mosaic work, and that is the question as to the locality whence the turquoise was obtained. The fact that turquoise has not been discovered in Peru led to the raising of



FIG. 15.—Fabric from Peru showing double-bird design.

doubts as to whether the mineral was true turquoise or some silicate of copper such as chrysocolla. A small fragment of the inlay of the bone dagger which had become detached was therefore submitted for analysis to Dr G. T. Prior, of the mineralogical department of the British Museum, who has definitely pronounced it to be turquoise. Whence therefore did it come? Is it possible that it filtered down from Los Cerillos, near Santa Fé in New Mexico, whence the ancient Mexicans almost undoubtedly obtained their supply? Or

are there deposits of turquoise which still await discovery, or rather rediscovery, in the interior of South America? In view of the fact that there is no evidence of the slightest connection between the cultures of Peru and Mexico it must be admitted that the latter is the more probable hypothesis. In either case the question is one of great interest, and it can only be hoped that the advance in knowledge of the mineralogy of the southern continent may soon supply the answer. Meanwhile the author would be grateful to receive in published form or privately any evidence bearing on these two points; i. e. the southern limits of inlaid and incrustated work in America, and the presence or the reverse of turquoise deposits within or near the limits of the culture-area of ancient Peru.

BRITISH MUSEUM,
LONDON.

THE LANGUAGE OF THE TAËNSA

By JOHN R. SWANTON

The Taënsa were a small tribe settled in the earliest times of which we have any certain record on Lake Saint Joseph in what is now Tensas parish, Louisiana. They are often spoken of as constituting a single town, but this comprised from six to eight subordinate villages. Very early they allied themselves with the French, thus incurring the hostility of the Chickasaw and the Yazoo, whose threatening attitude induced them in 1706 to abandon their ancient seats and take refuge in the town of the Bayogoula, at a place which still bears the name of the latter tribe. Soon afterward they rose upon their fellow townsmen and killed nearly all of them. Between 1706 and 1715 they successively occupied several villages along the lower Mississippi, but in the latter year removed to Mobile bay by invitation of the French, and were established not far from Fort Louis. Subsequently they crossed to the eastern side and settled on what is now Tensaw river. In 1764, after the cession of Mobile to Great Britain, concluding that Spanish control was preferable to that of their new masters, they migrated west of the Mississippi again and established their village on Red river, a short distance below the junction of the main stream with the Rigolet de Bon Dieu, Louisiana. A few years before the acquisition of this territory by the United States, they, in conjunction with the Apalachee, sold their lands to Messrs Miller and Fulton and moved south to Bayou Bœuf. Not long afterward they parted with this land also, but continued to occupy the neighboring country at least as late as 1814, at which time they were reduced to a few families and disappear from written history. Nevertheless it is known that a remnant continued in existence and drifted southward to a small bayou at the head of Grand lake, which came to bear their name. Here they were on intimate terms with the Alibamu, Attacapa, and Chitimacha, especially the latter. They intermarried with these, and the

father of the oldest surviving Chitimacha woman was of Taënsa extraction. The rest of the tribe has now entirely slipped from sight.

Three early French travelers state that this tribe was a branch of the Natchez and spoke the same language. The declaration was never contradicted by any of their contemporaries, even by implication, and was consequently assented to by all later students, so that the Taënsa would have played a no more conspicuous part among American races than that of an insignificant division of a fairly famous tribe had it not been for the publication in France, in 1880, 1881, and 1882, of linguistic material purporting to be in their language but differing entirely from the recorded speech of the Natchez. This material appeared at first in the form of an article entitled "Notes sur la Langue des Taensas," in the *Revue de Linguistique et de Philologie Comparée*, in 1880, and was supposed to be taken from a manuscript found among the papers of a M. Haumonté of Plombières, Vosges, by his grandson, J. Parisot. The following year seven songs from the same source, without translations, but purporting to be in the Taënsa language, were printed at Épinal under the title *Cancionero Americano*. They were accompanied by an introduction in very bad Spanish. A copy of this pamphlet having fallen into the hands of Lucien Adam, editor of the *Bibliothèque Linguistique Américaine*, that eminent philologist opened communication with M. Parisot, and received a manuscript from him, the contents of which are printed as volume ix of the *Bibliothèque* under the title "Grammaire et Vocabulaire de la Langue Taensa avec Textes Traduits et Commentés par J.-D. Haumonté, Parisot, L. Adam." This was furnished with an introduction by Adam and another by the eminent American philologist, Dr A. S. Gatschet, and, thanks probably to such sponsors, was received at first without question and acclaimed as a notable addition to American linguistics. Dr D. G. Brinton copied one of the shorter songs into his *Aboriginal American Authors* (Philadelphia, 1883), and remarked upon their Ossianic character.

A further examination of this work, however, entirely altered Dr Brinton's views regarding it, and in *The American Antiquarian* for March, 1885, he came out against it with a direct charge of forgery. His attack on the supposed Taënsa songs was so telling

that Adam did not attempt to defend them as aboriginal productions. He did, however, continue to champion the genuineness of the grammatical portion, and published three successive pamphlets the same year with the object of establishing it. One of these was a partial endorsement by Friedrich Müller who had made an examination of the material at his request. To *The American Antiquarian* for September, Brinton contributed a rejoinder, and the discussion attained sufficient notoriety to receive notice in the *Kansas City Review* (vol. ix, no. 4, p. 253, col. 2, to 254, col. 1). One of the best résumés of the whole question, however, was made by Julien Vinson in the *Revue de Linguistique* for April, 1886, in an article entitled "La Langue Taënsa." Although the very man who had first introduced the material to the public, he took sides with Brinton, at least in holding that it had as yet failed to exhibit proper scientific credentials. In the *Revue* for January, 1888, Brinton again touched upon the grammar in connection with certain differences of opinion between himself and Dr Gatschet, and this brought forth a rather heated reply from the Washington savant which formed the leading article in the July number of the same journal. Brinton answered in a short letter published in the October issue, but declined to carry the argument regarding Taënsa further, and there it rested.

In the course of this discussion the opponents of the grammar had scored a number of important points. In the first place they had asked for the original manuscript that it might be examined by competent students, and M. Parisot either could not or would not produce it. Next they had shown that considerable discrepancies existed between the earlier and later statements of that gentleman, in regard both to the condition of the manuscript itself and the material which it contained. Thirdly, they had demonstrated that the references to climatic and economic conditions in the songs were inconsistent with known facts, and, fourthly, that the grammar contained a suspiciously large number of features which, even separately, are rare among American tongues. To this could be added the unanimous agreement of the three writers above referred to regarding the affinity of the Taënsa language with Natchez. Practically the only argument of an affirmative character that could be

brought forward on the other side was the fact that two or three grammatical features, such as the presence of a sex gender and particularly a sex gender in pronouns of the second persons, existed nowhere else in the southern part of the United States except in Tunica, which was spoken by a neighboring people and had been collected after the appearance of the work in question. Therefore, although the grammar was now uniformly rejected from scientific use, the evidence for its spurious character just failed of a satisfying completeness. It must still be regarded as embodying a possibility, and so long as such was the case the ethnography and ethnology of the lower Mississippi were bound to remain under a cloud. Most of the languages of this region could be assigned to certain types which bore an organic relation to one another; but if a tribe existed in the very midst with a language of the independent character of that contained in this grammar, a disturbing element was introduced, practically another race of people had to be reckoned with, and this meant a new reading of the history of the region which might be fraught with enormous consequences to both ethnology and archeology. The absolute genuineness of the material itself was not and is not of so much consequence to us as to determine satisfactorily what language the Taënsa actually spoke. If this be done we may leave to European linguists the determination of the sources from which the grammar was derived, and it is because evidence practically absolute on the former point has just come to hand that the writer has temporarily rewarmed the ashes of this controversy of a quarter of a century ago.

There are two possible ways in which the linguistic affinities of the Taënsa Indians might be determined, first, and most satisfactorily, by discovering some Taënsa or other Indian who remembers a few words of the language, and secondly through statements in manuscripts as yet unpublished.

According to Sibley there were in 1806 as many Taënsa as Tunica, and since the latter still retain enough of their language for purposes of identification it was hoped that something of Taënsa still existed. In April, 1907, therefore, during the writer's visit to Louisiana to investigate the tribal remnants there, he made an effort to locate members of this tribe. At Charenton, where lives the

remnant of the Chitimacha, he elicited the information already given anent their former intimacy with the Taënsa, whom they know as *Chò'sha*, and was told that the old woman referred to had formerly been able to speak her father's tongue. Every effort was made, therefore, to stimulate her memory into the resurrection of at least a word or two of that speech, but in vain. Her memory is now beginning to leave her, and too long a period has passed since she heard it spoken. Had Gatschet, when at Charenton in 1881 and 1882, inquired closely, he could probably have obtained sufficient material to nip the whole controversy in the bud, but it now seems too late to settle it in that manner. One small glint of evidence however, was obtained in the statement that *ki'pi*, which signifies 'meat' in Chitimacha, "meant something else in Taënsa." This is sufficiently indefinite, to be sure, but it so happens that one of the commonest Natchez suffixes used in the formation of nouns is *-kip*, *-kipi*, *-kup*, *-kupi*. Now, it is not impossible that the sound, being of very common occurrence, had impressed itself on the memory of my informant just long enough to survive without the meaning having survived with it. At any rate *ki'pi* is a combination of sounds not conspicuous—if indeed it is existent—in Parisot's "Taënsa grammar."

The second source of information has fortunately yielded better results. The three French writers cited above as authority for the Natchez affinities of Taënsa were the missionaries De Montigny and Gravier, writing in 1699 and 1700,¹ and Du Pratz, whose information dates from 1718 to 1734.² The reply which Gatschet made to the evidence of these men was that none of them was personally acquainted with both of the tribes under discussion, and that they might have assumed a linguistic relationship on account of the recognized similarities of the two in manners and customs. Thus De Montigny had visited the Taënsa in 1698, but not the Natchez; Gravier had obtained his information from St Cosme, then missionary to the Natchez, but it was not known that the latter had visited the Taënsa at that time, while Du Pratz knew the Natchez well but may never have seen a Taënsa, the Taënsa being in his time

¹ Shen, *Early Voyages on the Mississippi River*, pp. 76, 136, 1861.

² Du Pratz, *Histoire de la Louisiane*, vol. II, p. 213, 1758.

near Mobile. The material just discovered, however, which also emanates from De Montigny and St Cosme, discounts this argument completely. To understand the matter properly, the following facts must be premised.

After descending the Mississippi river in 1698 as far as the Taënsa, De Montigny returned to the Quapaw country and there wrote the letter cited above. Early in 1699, however, he and another missionary priest, Father Davion, descended the great stream once more, and the latter established himself among the Tunica Indians of Yazoo river while De Montigny passed on to the Taënsa. In June they made a joint trip farther down, visited the Natchez and Houma, and went as far as the new French fort at Biloxi, which they reached July 1. On his way back about the middle of the same month De Montigny effected a peace between the Natchez and Taënsa tribes. In March, 1700, Iberville reached the Taënsa villages on his second ascent of the Mississippi, and De Montigny, who had long meditated changing the seat of his mission to the Natchez, seized this opportunity to do so. In May, however, for what reason we know not, he abandoned this post also, descended to Biloxi, and returned to France with Iberville. The Natchez field was, nevertheless, not deserted, for the very same year, possibly before De Montigny's departure, St Cosme came down from the Illinois country and took his place. Here he was in November, at any rate, when the Jesuit Gravier made his ethnologically important journey to the ocean, and he continued at his post for about six years, i. e. until 1706, when he was killed by a Chitimacha war party while on his way to Biloxi. After this latter date no missionary work was done in either tribe except incidentally in connection with French congregations. It is evident, therefore, that from these two men, De Montigny and St Cosme, the most conclusive evidence might be derived if it had been committed by them to paper at any time and were preserved to our day. Now, as already intimated, this evidence most fortunately does exist, and we are indebted to M. l'abbé Amédée Gosselin of Laval University that it has at last been brought to light.

At the Fifteenth Congress of Americanists, held at Quebec in 1906, Professor Gosselin presented a paper entitled "*Les Sauvages du*

Mississippi (1698-1708) d'après la Correspondence des Missionnaires des Missions Étrangères de Québec" (pp. 31-51 of the first volume of transactions). The information contained in these is drawn partly from the originals of documents published by Shea, but in greater part from letters which still remain in manuscript as they were sent by the missionary priests to their superior, the Bishop of Quebec. From these most valuable information is adduced regarding the population, languages, religion, Government, warfare, and character, manners, and customs of the tribes of that region. The only reference to the language of the Taënsa, however, is to the effect that "the Tonicas, the Taënsas, and the Natchez spoke the same language, but it differed from that of the Chicachas [Chickasaw] and that of the Akansas [Quapaw]." As authority for this statement the letters of De Montigny of January 2 and August 25, 1699, are cited.

Knowing that the coupling of Tunica with the other two languages was at variance with statements in De Montigny's letter of January 2, and so far as Tunica and Natchez are concerned at variance with known facts, the writer supposed that the missionary must have expressed different views in his unpublished letter of August 25. In order to determine this fact, and if possible to elicit further information regarding the linguistic position of the tribes under discussion, he addressed a letter to Professor Gosselin, calling attention to the matter and asking for any excerpts relating to the language of the Taënsa which the unpublished letters might contain. Professor Gosselin very kindly and promptly replied to his request. He explained that the erroneous statement was the result of an unfortunate confusion in his own notes and did not exist in the originals. In answer to the second query he enclosed several extracts in the original which are of the utmost value and contain the decisive information alluded to. It is to be hoped that the whole of the originals of these letters will ere long be given to the public. Following is a rough translation of the extracts in question.

From the letter of De Montigny, written August 25, 1699, page 6 :

The 12th [of June] we reached the Natchez, or, as others call them, the Challaouelles, who are almost twenty leagues from the Taënsas . . . They were warring at that time with almost all the nations which are on

the Mississippi . . . and out of consideration for us, although they were at war with the Taënsas, they gave those [Taënsa] who were with us, a very good reception. We told the chief that the black robes like ourselves were not warriors, that we had not come to see them in that spirit, and that on the contrary we exhorted everyone to peace, that they would know it well one day when I should know their language which is the same as that of the Taënsas [*qui est la même que celle des Taënsas*] : and then, after having made them some little presents, we separated very well satisfied with each other.

From a letter of St Cosme, August 1, 1701 :

I have passed the winter among the Natchez ; I have applied myself a little to the language and I find myself in a position to compose something of the catechism and prayers. I have made a journey to the Tahensas distant twelve leagues from the Natchez. As this village is much diminished I think no missionary will be needed there, since it now numbers only about forty cabins, but it is necessary to try to draw them to the Natchez, the languages being the same [*n'étant que d'une même langue*]. . . .

From a memoir without name of author or date, but which goes back to the first years of the 18th century :

After the departure of Mons. Tonty, M. De Montigny and the two other missionaries pursued their way as far as the Tonicats where they thought it well to make an establishment, and to leave there Mons. Davion and from there to the Tahensas and Natchez which have the same language [*qui ont la même langue*], and are only a day's journey apart. . . .

The last of these may have been based on De Montigny's two letters and would therefore contain secondhand information, but the others can leave no doubt in any rational mind. Before writing the former, De Montigny had visited one tribe in company with members of the other, and had had abundant opportunity to hear the two peoples converse together. Had they been of alien speech they would not have employed Natchez, but the Mobilian jargon, and he would hardly have failed to observe the fact. St Cosme's evidence is yet stronger, since at the time of writing he had had the advantage of one winter's study of Natchez ; nor is it conceivable that he would have made a recommendation to his superior to draw the two into one mission without fully satisfying himself that their

languages were indeed identical. It should be added that in other excerpts from this unpublished correspondence, sent me by Professor Gosselin, occur references to the linguistic affinities and divergences of the Chickasaw, Tunica, Houma, Quinipissa, Osage, Quapaw, Kansa, and Missouri, and in the light of all our present knowledge not a single mistake is made. The information of the priests even extends to the point of determining the closer relationship of Osage, Quapaw, and Kansa to each other than of any of them to the Missouri. If this be true of tribes whose seats were remote from the Mississippi, why should they blunder regarding those with which they had direct personal intercourse?

The conclusion seems to the writer obvious that the ancient language of the Taënsa was practically identical with that spoken by the Natchez, and that consequently the language derived from or through M. Parisot is not Taënsa, and was probably never spoken by any people whatsoever.

BUREAU OF AMERICAN ETHNOLOGY,
WASHINGTON, D. C.

PREHISTORIC MAN IN MANITOBA AND SASKATCHEWAN

By HENRY MONTGOMERY

In July, August, and September of 1907 the writer conducted archeological excavations and other explorations in the Canadian Provinces of Manitoba and Saskatchewan. A large part of this work consisted of the examination and excavation of prehistoric tumuli scattered over the plains, and which were traced for a distance of more than one hundred and fifty miles north of the international boundary. Some of these mounds are circular; others are elongate in form. They vary from 3 to 8 feet in height, and from 20 to 90 feet in diameter. Nine of the twelve mounds fully explored were made of black prairie soil; the remaining three consisted about equally of glacial boulders and earth. The boulders varied from 10 inches to 2 feet in thickness. The presence of the boulders made the work of excavation tedious and difficult; sometimes also the stones crushed into fragments the underlying specimens, which otherwise could have been saved unbroken. Most of the mounds contained human bones along with objects of human workmanship, such as vessels of earthenware, shell spoons, shell beads, pipes and discs of stone, and awls and needles of bone. Many buffalo skulls, and in one mound entire skeletons of buffaloes, were found, the bones being in their natural positions. Burial pits were found in some of them. In each of two mounds as many as three burial pits occurred. There were oak trees, a foot to 15 inches in diameter, growing upon some of the tumuli. Long earthen ridges or grades also occur here. Some digging was done upon them by the writer. The longest of these ridges was found to be about two thousand feet in length.

MOUNDS IN MANITOBA

A Manitoba mound of black soil, 5 1/2 feet in height and 40 feet in diameter, contained three burial pits nearly circular in form and

about four feet distant from each other. One of these pits contained a human skeleton, a perfect earthenware urn-shaped vessel, and several river shells of the genus *Unio*. The earthenware urn (fig. 16) is $3\frac{1}{2}$ inches high, and its diameter is $3\frac{7}{8}$ inches. It is



FIG. 16. — Earthenware urn from a burial pit in a mound at Sourisford, Manitoba.
(Height $3\frac{1}{2}$ inches.)

hand-made, and is decorated by a deep spiral groove running around it and terminating at the center of the bottom. It has a bulging margin, or lip, with four small projections at equal intervals. The top of the lip is decorated with four grooves. Two of



SIDE AND BOTTOM OF POTTERY URN FROM SECOND MOUND OF FIRST GROUP, SOURISFORD, MANITOBA. DIAMETER OF BODY, 11.5 CM. (4.5 INCHES)

these are straight and occur one upon each of two opposite sides of the mouth; the other two are zigzag in form and occupy the remaining two opposite margins. The body of this urn was painted somewhat with red paint. One *Unio* shell valve had evidently been used as a spoon. It has a short handle with three notches in it; and it has four notches in each margin. The position of the skeleton indicated that the body had been buried in a sitting or crouching position. At a little higher level in the mound and at a short distance from this pit a stone shovel was discovered. It is well polished upon both sides and upon a portion of its margin. It tapers to a rounded point much like a modern iron shovel, but it differs in being flat instead of convex and concave. Its length is $9\frac{1}{4}$ inches, its greatest width is $7\frac{1}{8}$ inches, and its greatest thickness is $\frac{7}{8}$ of an inch. This shovel becomes thinner toward its edge.

The second burial pit contained an adult human skeleton and the skeleton of a child, together with two *Unio* shell scoops having handles and marginal notches, and also an urn of pottery. This urn, which is also hand-made, has a spiral groove terminating near the center of the bottom. The height of this vessel is $3\frac{1}{2}$ inches, and its greatest width $3\frac{1}{4}$ inches. It is slightly smaller than the urn taken out of the burial pit first mentioned, its spiral groove is not so wide, and the vessel has a slightly different shape, more especially at its lip. It is, however, in all important respects similar to it.

The third burial pit had been previously opened by other parties, and apparently some things had been removed. By further excavation half of a small earthen urn was obtained, which has a decorative design different from those of the urns described as from the first and second burial pits. The spiral groove is entirely absent; there are vertical incised markings upon the body, and several eminences upon the outer side of the lip. Some human bones also occurred here; the remainder of the skeleton had probably been taken away by others years before.

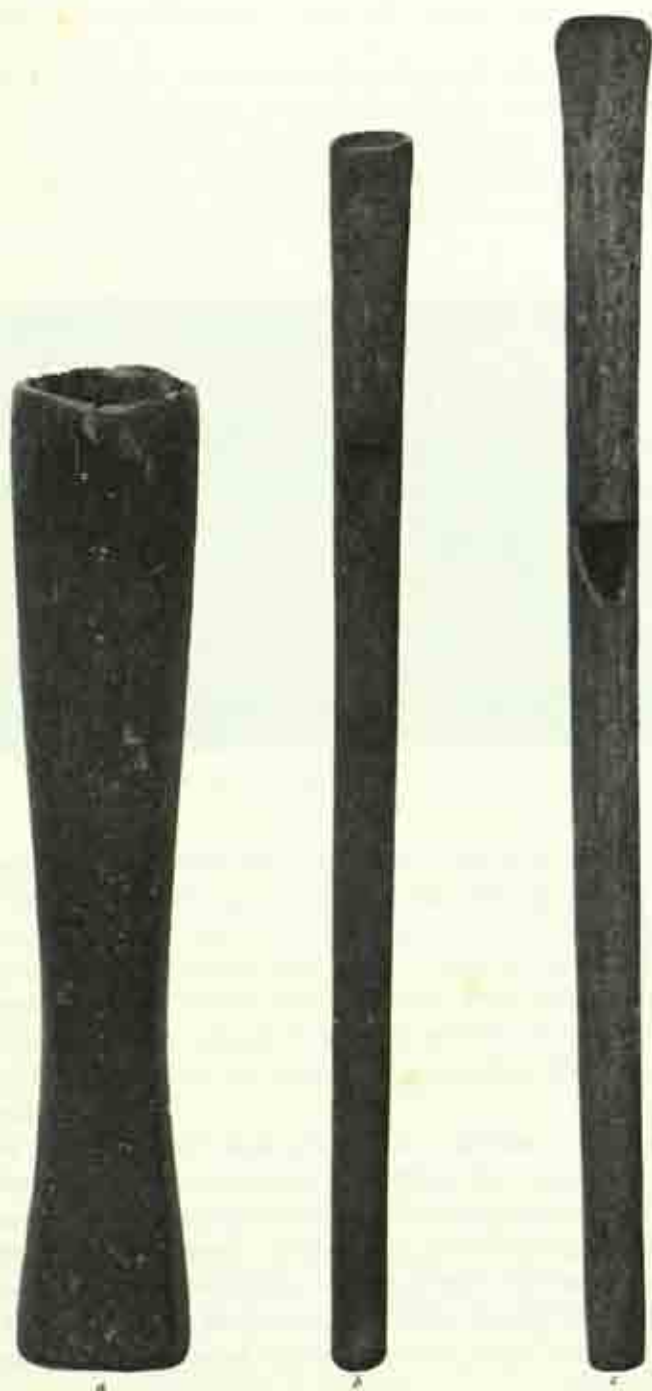
In this vicinity another mound, 45 feet in diameter and 6 feet in height, yielded two vessels of pottery of the same general character as the first described, and differing only in minor respects. They are small urns decorated by a continuous furrow or groove running

spirally around the body and bottom to the center (pl. III). This mound also contained a couple of human skeletons, one of the skulls having a flat band of native copper around it; two straight catlinite pipes; a large tine of a deer's antler, which had been cut off with a stone implement, and various small bone, shell, and stone objects. Charred wooden poles occurred here. A circular polished stone plate or disc was found within two feet of the surface of this mound. Mounds in this locality which had been previously opened by other persons also yielded similar pottery and pipes.

On the other hand, it was found that a group of mounds from three to five miles distant, and situated beyond a creek of considerable size, yielded no pipes and no pottery. It was also observed that the latter were accompanied by many long and wide artificial earth ridges, which were perfectly straight, and some of them from 1000 to 2000 feet in length. One mound of this latter group, measuring 40 by 50 feet in diameter, contained ten human skeletons, some being of adult males and females, and some of children. As to their condition it may be stated that the skeletons were in a good state of preservation, the bones being firm and strong; yet the long-bones — the femur, humerus, tibia, fibula, ulna, and radius — of several of the skeletons were badly broken. The other bones were perfect. As the burial pit was only about 3 feet by $3\frac{1}{2}$ feet in width and length, it seems probable that the limb bones were broken in the effort to place so many bodies in the pit at the time of burial. No objects of workmanship of any kind were found in this tumulus.

A second mound of the same group, 45 feet in diameter and $3\frac{1}{2}$ feet in height, yielded the broken bones of two human skeletons, a bone awl, and a few shell ornaments; and at a distance of four or five feet from these the entire skeletons of seven large buffaloes were found, all being within two to four feet from the surface. The buffalo bones were not broken, or weathered or separated. They showed no signs of having been exposed to the sun and wind before burial, and most of them were in their proper position.

In a third mound of this group, 25 feet in diameter and $3\frac{1}{2}$ feet in height, the writer found 14 heads of buffaloes and many other buffalo bones together at a depth of two to three feet, also the bones of a child and the following portions of an adult human skeleton:



PIPE AND WHISTLES

a, *t*, allinite pipe from a mound near Halibute, Saskatchewan (natural size). *b*, *c*, Bone whistles from a mound in the second group near Sourisford, Manitoba (length 9 and 10 inches)

2 dorsal vertebræ, 1 lumbar vertebra, the left clavicle, the uppermost piece of the sternum, 2 ribs, 2 metacarpal bones, 1 incisor, and 1 canine. From another mound bone whistles (pl. iv, *b*, *c*), anklets (fig. 17), shell ornaments (pl. v, *b*), and other objects were procured.

Yet other mounds here yielded human bones, but few or no articles of workmanship.

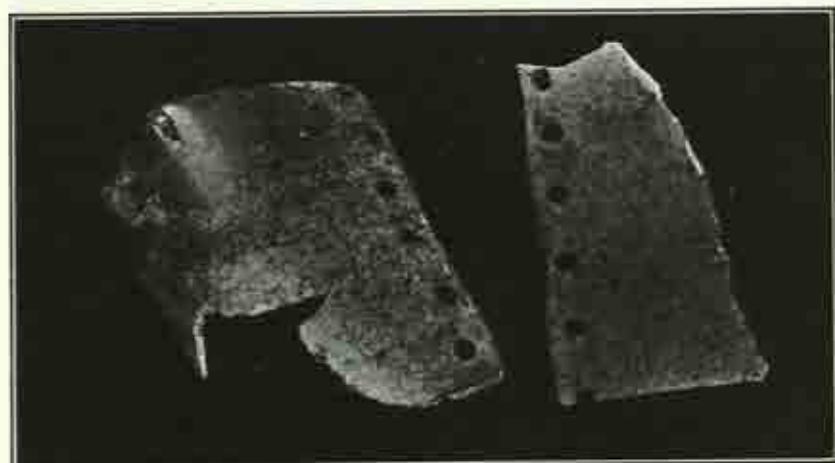


FIG. 17. — Portions of two bone anklets, with holes bored from both sides; from a mound near Sourisford, Manitoba. (Full size.)

Because of the comparative freshness of the bones, as well as for other reasons, it appears probable that this latter group of mounds is much more recent than the former, from which the pipes of catlinite and vessels of pottery were taken. Both are in the same general region near the Souris river, and only a few miles apart. But the localities seem to have had different periods of occupancy, and to have been inhabited by peoples of somewhat different customs and modes of life.

The present writer's operations upon a circular tumulus, 60 feet in diameter and 6 feet in height, situated on the Campbell beach of the ancient Lake Agassiz in northern Manitoba, yielded the remains of eight human skeletons. These were in three irregularly shaped pits, one of which extended to a depth of nine feet from the surface of the tumulus. Like the others, this latter pit was filled with black soil, and the entire mound was made of the same kind of material.

No objects of human workmanship were found in this mound. The bones in the deepest pit were greatly broken. This burial had been made by sinking the pit in the stratified sands underlying the tumulus. From a consideration of the depth and relations of the burial pits here, the character of the underlying deposits, and the condition of the skeletons, one can readily understand how a mistake may have been made in determining the geological conditions under which the so-called "Loess Man of Nebraska" was reported to have been discovered last year beneath the Gilder mound near Omaha. An artificial ridge or tumulus, 30 feet wide and 60 feet long by 4 feet high, extends northward from the circular mound. Other ridges and mounds were observed in this part of the province.

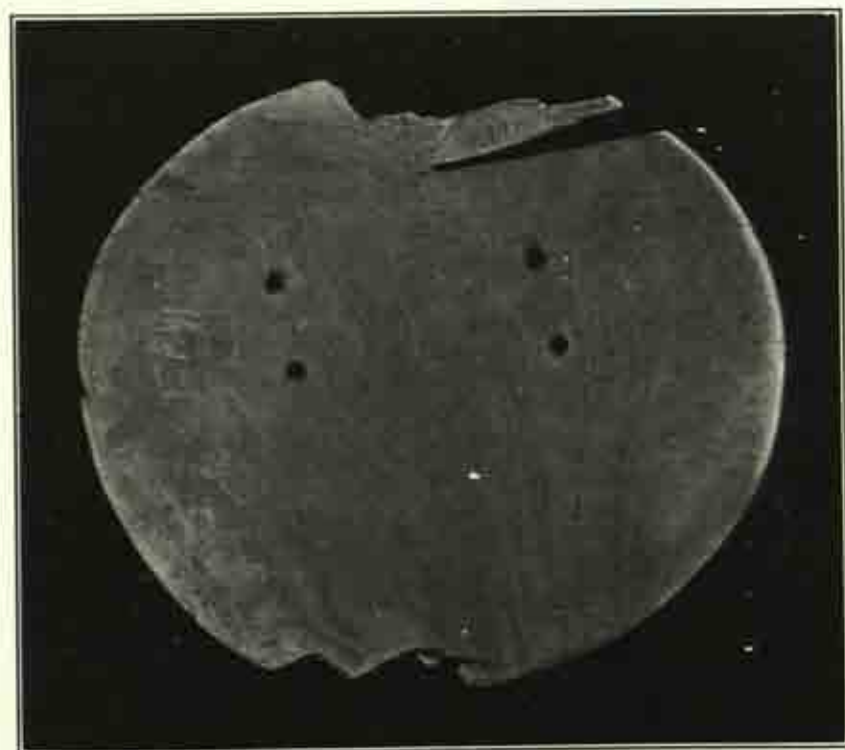


FIG. 18. — Marine shell bead from a mound on Mr Rhind's farm near Westbourne, Manitoba.

Operations upon a mound 67 feet by 97 feet in diameter, situated near White Mud river and Lake Manitoba, resulted in finding a few human bones, one large bead made from the usual marine shell (fig. 18), some small sea-shell beads (*Marginella*), and a dozen flat pearly shell pendants with similar artificial notches and markings upon them (pl. iv, *a*). There were also taken out of this mound some broken pieces of pottery, which differed much in decorative design from the pottery previously described. No burial pit was discovered here. The trunk of one of the oaks growing upon this mound was 14 inches in diameter. Two long and wide artificial ridges extend from this tumulus. The mound and ridges may be of about the same period as the second group aforementioned.



a, Shell pendants from a mound near Westbourne. (Natural size.)



b, Circular marine shell ornament from a mound in the second group, near Sourisford. Diameter 12 cm. (4 7/8 inches).

REMAINS IN SASKATCHEWAN

A Saskatchewan mound, constructed of earth and boulders and situated upon a natural eminence, was about 20 feet in diameter and 5 feet in height. This contained two perfect catlinite pipes, one being 5 inches and the other 2 ½ inches in length (pl. iv, *a*; fig. 19). Both are straight tubes, and they show signs of considerable use. The smaller pipe has a thick ridge or rim around it at its lower end. This mound also yielded a large bead made from the thick columella of the marine shell *Busycon*, one polished bone bead, pieces of charred wood, broken deer bones, pieces of chipped flint, a human skeleton, a piece of metallic looking substance (possibly a copper alloy), and a small bluish bead the composition of which, like that of the preceding, has not yet been determined. From this mound there extended three distinct and well defined rows of small boulders in straight lines for a length of about 220 feet, the rows at right angles to each other and each terminating in a circular heap of stones. The rows were in the direction of west, north, and east. A few rods to the northeast of this mound were five stone circles, distant the one from the other usually about 12 or 15 feet. These stone circles were respectively 10, 15, 12, 15, and 18 feet in diameter. Each circle consisted of a single row of stones from 8 to 15 inches in thickness. Many of these circles of stones occur throughout Saskatchewan; they are probably of a later period than the mounds.

The human skeletons from all the mounds thus far explored indicate a stature of six feet or more in the adult male. The crania are dolichocephalic and mesocephalic, and in a few instances they exhibit

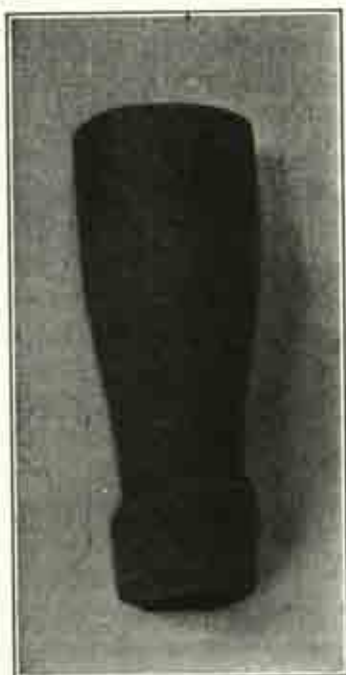


FIG. 19. — Catlinite pipe from a mound near Halbrite, Saskatchewan. (Full size.)

a low type. Further exploration and study of these aboriginal monuments may throw new light upon the culture and relations of the people whose lives and labors they represent. This is hoped and expected. I have not been able to refer them to the Mandan or to any other tribe of the Siouan stock, and much less to the Algonquian Cree or Chippewa. There is, however, sufficient known to show conclusively that they belong to a section of the Mississippi valley mound builders, differing from the works of those people chiefly in the presence of long, straight, earthen ridges, in having fewer manufactured articles, and also in the form and design of the pottery and pipes. From an examination of many of these monuments during a number of years I think I have obtained considerable evidence of the manner in which they were constructed, which will be discussed at another time. As to their date, it seems probable that the oldest of these mounds were erected several centuries before the Mandan and other Siouan movements to the plains region began.

THE MUSEUM,
UNIVERSITY OF TORONTO.

THE BRAIN-WEIGHT OF THE FILIPINO¹

By MAXIMILIAN HERZOG

Determinations of the weight of the brain of the native Filipinos have not, so far as we know, heretofore been published. During his term of service as pathologist in the Bureau of Science in Manila, from 1904 to 1906, the author carefully weighed a number of brains of male individuals of this Malayan race. The post-mortem examinations during the course of which these determinations were made, were all of prisoners in Bilibid prison, the great jail and penitentiary of the Philippine islands, situated in the city of Manila. The cases selected for this study were full-blood natives who had died from various acute and chronic diseases; cases of half-breeds, or mestizos, were of course not included. It ought to be stated, however, that during the last three hundred years or more there has been an infusion of European, particularly Spanish, and also of Chinese blood into a considerable number of the natives, hence it is not always easy to say in a given case whether one is dealing with the absolutely pure native type or with an individual in whom there is a strain of foreign blood. Cases in which there has been clearly a foreign admixture are of course not included in our list, since they would not have escaped detection. On the whole, therefore, the table is based on male persons who would generally and without doubt be considered pure-blood native Filipinos.

The inmates of a great prison or penitentiary in the territory of one of the recognized civilized nations of the world include many individuals who may be fairly regarded as degenerates, hence the determination of the brain-weight of penitentiary prisoners might be open to some objections. Such objections however are not applicable in the case of the Filipino prisoners of Bilibid. Among the latter, at the time the following data were recorded, were numerous political prisoners who, long after the establishment of the Ameri-

¹ Read at the Chicago meeting of the American Association for the Advancement of Science, Section H, January 2, 1908.

can civil government, had persisted in rebellion and hostility. There were also included many prisoners who had always led the life of *ladrones* in the more distant islands and mountainous districts, and who did not consider theft, robbery, or murder, for which they were finally imprisoned, any more criminal than did the feudal lords of ancient Japan or of medieval Europe regard their internecine wars or their ill-treatment of the persons or property of the serfs or subjects of their foes. In judging the material utilized it must be considered further that even such prisoners as were serving terms for theft, larceny, embezzlement, forgery, assault, manslaughter, or murder, cannot be regarded as degenerate in the sense of deviating to a great extent mentally and morally or possibly physically from the type of the society of which they form part. I do not want to be understood as insinuating that the great mass of the Filipino people are less moral and more criminal than the more highly civilized nations, but quite the contrary. Particularly where their original tendencies have not been spoiled by too intimate contact with western civilization, their morals on the whole are good, but as a race they are of course less mature in mental, moral, and ethical development; they are more childlike, and their power of inhibition is not strongly developed. Hence they succumb much more easily to temptation, and in contact with civilized institutions and relations they are more easily led astray than the more highly educated western individuals, therefore more frequently do they come in conflict with the law.

I am also confident from my observations made in Bilibid that very few, if any, of the several thousand native prisoners therein considered it a disgrace to be thus confined, and, what is more striking, very few natives beyond the prison walls look upon a term of detention with any such feeling. I may recount an incident which shows with what eyes a prisoner looks upon his striped uniform. Those who assisted me in the post-mortem work in the prison morgue were generally prisoners who had been detailed for service in the hospital. Among these, for several months, was a native Tagalog of Manila, of some twenty-odd years of age, who in 1901 and 1902 had been in the United States, spoke English well, was very neat in appearance, wrote a good hand, and was generally

well educated. One morning he informed me that he would leave the prison the next day, and asked as a special favor that I photograph him. I told the boy that I would take his picture the next day, after he had received his discharge. "O, no!" he said, "I want to be photographed in my prison suit, for I want to give the photograph as a souvenir to my mother and to keep one myself!" I duly photographed him in his convict garb and sent him in due time a couple of prints; later he personally came to the prison gate, at the hour when I usually arrived in the morning, and, holding his picture triumphantly up, thanked me with beaming face for the fine present I had made him! I therefore repeat that I am fully convinced that the brain material derived from among the Bilibid prisoners may fully claim to be considered as average specimens of the brains of full-blood native Filipinos.

In obtaining the brains and determining their weight the usual method in post-mortem examination was employed. The skull was opened by the customary circular incision, the dura was then split on both sides along the level of the opening of the skull, and its upper severed half was then removed. Next the cranial nerves were severed, and after freeing the cerebellum and lifting up the whole brain, a narrow bladed knife was so inserted into the foramen magnum that the cord could be cut beyond the medulla. The brain, including the cerebrum, cerebellum, pons, and medulla, was then lifted out and held up for a few minutes in order to drain the cerebrospinal fluid from the outer surfaces. The ventricles however were not opened, and the brain was weighed without attempting to remove the pia arachnoid. Most human brains have been weighed under the same conditions; only exceptionally has the pia arachnoid been removed. The scales and the weights used in these determinations had been tested with a set of weights standardized at Washington, D. C., and kept in the Philippine Bureau of Science. The set used in the prison morgue included weights of a minimum of 10 grammes. The figures given are correct to within 2 or 3 grammes. In all, 113 brains were examined, all from males who had died chiefly of tuberculosis, amebic dysentery, pneumonia, chronic malaria, beriberi, cerebrospinal meningitis, chronic nephritis, etc. The weights of these 113 brains are arranged in the following table from the lowest to the highest figure obtained.

	<i>Grammes.</i>	<i>Grammes.</i>	<i>Grammes.</i>
1.....	1,040	39.....	1,285
2.....	1,155	40.....	1,290
3.....	1,160	41.....	1,295
4.....	1,165	42.....	1,305
5.....	1,175	43.....	1,305
6.....	1,175	44.....	1,305
7.....	1,175	45.....	1,305
8.....	1,185	46.....	1,310
9.....	1,195	47.....	1,310
10.....	1,195	48.....	1,310
11.....	1,195	49.....	1,310
12.....	1,200	50.....	1,310
13.....	1,200	51.....	1,315
14.....	1,205	52.....	1,315
15.....	1,210	53.....	1,315
16.....	1,225	54.....	1,315
17.....	1,225	55.....	1,325
18.....	1,230	56.....	1,325
19.....	1,235	57.....	1,330
20.....	1,235	58.....	1,330
21.....	1,245	59.....	1,335
22.....	1,245	60.....	1,340
23.....	1,245	61.....	1,345
24.....	1,255	62.....	1,345
25.....	1,260	63.....	1,345
26.....	1,260	64.....	1,345
27.....	1,260	65.....	1,350
28.....	1,265	66.....	1,355
29.....	1,265	67.....	1,355
30.....	1,270	68.....	1,360
31.....	1,270	69.....	1,365
32.....	1,275	70.....	1,365
33.....	1,275	71.....	1,365
34.....	1,275	72.....	1,375
35.....	1,280	73.....	1,375
36.....	1,280	74.....	1,375
37.....	1,285	75.....	1,375
38.....	1,285	76.....	1,375
		77.....	1,375
		78.....	1,380
		79.....	1,380
		80.....	1,380
		81.....	1,380
		82.....	1,385
		83.....	1,390
		84.....	1,390
		85.....	1,395
		86.....	1,405
		87.....	1,410
		88.....	1,410
		89.....	1,410
		90.....	1,415
		91.....	1,420
		92.....	1,425
		93.....	1,430
		94.....	1,430
		95.....	1,430
		96.....	1,435
		97.....	1,435
		98.....	1,435
		99.....	1,445
		100.....	1,445
		101.....	1,450
		102.....	1,450
		103.....	1,460
		104.....	1,460
		105.....	1,475
		106.....	1,475
		107.....	1,495
		108.....	1,495
		109.....	1,510
		110.....	1,555
		111.....	1,595
		112.....	1,600
		113.....	1,605

The total weight is 150,690 gr., hence it follows that the average weight obtained is 1,333.54 gr.

According to age the men whose brains were weighed may be grouped as follows:

From 17 to 20 years.....	10 individuals.
“ 21 to 30 “	28 “
“ 31 to 40 “	38 “
“ 41 to 50 “ ..	16 “
“ 51 to 60 “	11 “
65 years.....	2 “
66 “	1 individual.
72 “	1 “
79 “	1 “
Age not given.....	5 individuals.

The average brain-weight for the youngest individuals, i. e. those between 17 and 20 years, was found to be 1,325.5 gr., or very little below the general average (1,333.54 gr.), while the average weight for the five oldest individuals—those between 65 and 79 years—was found to be 1,303 gr.; but these five individuals showed both comparatively high and low figures, namely, 1,460, 1,155, 1,245, 1,430, and 1,225 gr.

The smallest brain examined (1,040 gr.) occurred in a man 33 years of age, of medium size and in a rather poor state of nutrition, who had died from amebic dysentery complicated with uncinariasis. The largest brain (1,605 gr.) was found in a medium-sized, strongly built man, who had died from tuberculosis and nephritis. The average brain-weight is to be compared with the figures given for other races by a number of authors, and we quote these values from Th. Ziehen's article in *Bardlebens Handbuch der Anatomie*, Jena, 1899, Central Nervensystem, p. 353:

Author	Nation	No. of Cases	Male	Female
Krause	Hanoverans		1,461	1,341
Bergman	Hanoverans	242	1,372	1,272
Arnold	Badensians		1,431	1,312
Reid	Scotch	87	1,424	1,262
Peacock	Scotch	195	1,423	1,271
Fiederman	Badensians	52	1,412	1,246
Quain	English		1,400	1,250

Bishoff	Bavarians	906	1,362	1,219
Sappey	French	32	1,358	1,256
Parchappe	French		1,323	1,210
Huschke	Saxonians	62	1,358	1,230
Hoffman	Swiss	113	1,350	1,250
Blosfield	Russian	44	1,346	1,195
Buchstal	Russian	44	1,371	1,229
Clendinning	English	80	1,400	1,238
Dieberg	Russian	100	1,328	1,237
Boyd	English	2,086	1,325	1,183
Lelut	French		1,320	
Hamilton	Scotch		1,309	1,190
Meynert	Germ.-Aust.	157	1,296	1,171
Weisbach	Germ.-Aust.	243	1,265	1,112
Techini	Lombards		1,378	1,235
Handmann	Saxonians		1,355	1,223
Marchand	Hessians		1,388	1,252
Doenitz	Japanese	10	1,337	

In his compilation Ziehen gives also a series of figures for the brain-weight of Asiatic, African, and other races according to Davis; but these figures are objectionable, as Ziehen himself states, on account of the fact that they have been computed from the cubical contents of the cranium. The same authority has computed from all the material available an average figure for the European nations, and he gives as the grand average for the male European brain 1,353 gr.; for the female European brain, 1,226 gr. Hence it appears that the average weight of the brain of the Filipino (1333.54) does not fall much below the average weight computed by Ziehen for the European nations.

The relation of the average brain-weight to the average body-weight in the male is variously estimated by various authors from 1:33 to 1:50. Ziehen considers Junker's estimate of 1:42 as the most trustworthy.

We were not in a position in Manila to weigh the bodies from which the brains were obtained, hence we cannot compute any direct brain- and body-weight figure. We can however give an average of the weight of 1,000 male adult Filipinos. All candidates for positions in the light-house, harbor, and other coast service in the Phil-

ippines are examined physically by medical officers of the Public Health and Marine Hospital Service. We are indebted to Dr Manning of this service for a compilation of the weight of 1,000 natives, including, necessarily, many of mixed blood. The average body-weight obtained, therefore, is undoubtedly higher than the average for the pure-blood Filipino, who is quite small in stature and is generally slender, while both Spanish-Filipino and Chinese-Filipino mestizos rather incline to obesity.

The average weight obtained for 1,000 male adults was 122.27 pounds. This would give us a relative brain- and body-weight of about 1:46, but we are convinced that a relative value of 1:40 would be much nearer the truth than the figures obtained from two not well comparable values.

The results of our determinations, provided the figures given have any value as an indicator of the higher mental faculties of man, are certainly not discouraging to those among the Filipinos as well as among the American people who claim that the Filipinos as a people may be educated to the same degree of civilization as the Western nations. In fact it is believed that those who have lived in the islands and who have endeavored to make unbiased observations respecting the mental caliber of the Filipino will not be surprised to learn that the average brain-weight determined is high and that it compares quite favorably with the brain-weights of the European nations.

MICHAEL REESE HOSPITAL,
CHICAGO.

SOME ARCHEOLOGICAL FORGERIES FROM MICHIGAN¹

By FRANCIS W. KELSEY

The interest of the spurious relics to which I have the pleasure of inviting your attention is, in last analysis, more psychological than archeological; so novel are their designs and so crude the workmanship that an archeologist of training in any field could hardly fail to recognize at a glance their true character. Nevertheless, the efforts made to exploit these objects have been so persistent, and the success so surprising, that it seems worth while to state briefly the facts in regard to them as evidencing not less the credulity of collectors than the activity and perseverance of a forger who under some circumstances might do much harm.

Toward the middle of the year 1891 rumors became current regarding marvelous discoveries near Wyman and Edmore, villages in Montcalm county, Michigan, about sixty miles northwest of Lansing. The region was formerly covered with pine forests. These had been cut away for the greater part, and the sawmills removed, but on account of the sandy nature of the soil the farmer had been slow in following up the lumberman, and the land presented a desolate appearance. The low rounded elevations produced by the uprooting of trees in the primeval forest and the decay of the roots which pried up the soil, had not yet been leveled by tillage, and scattered among them were occasional mounds such as are found in other parts of Lower Michigan. On account of the newness of the soil, which in many places had never been turned, the openness of the country stripped of its large trees, and the paucity of inhabitants, the conditions seemed not unfavorable for the perpetration of an archeological fraud.

The alleged discoveries had commenced in October 1890, when

¹ Presented at the joint session of Section H of the American Association for the Advancement of Science and Affiliated Societies in Chicago, January 1, 1908. The writer is indebted to Dr N. E. Bachman, of Stanton, Michigan, for the kind verification of statements in regard to the earlier "finds."

a man digging post holes in a field near Wyman found a small cup of clay. When in the following spring other and more remarkable objects began to be brought to light the people in that part of the country passed into a state of great excitement. Scores of surface undulations and mounds were dug into; one man, it was reported, digging into a greater depth than usual, was caught and killed by the caving-in of sand. The relics were found at a depth varying from a foot and a half to four feet, and over an area three or four miles in diameter; most of them, however, were unearthed within a mile and a half from Wyman. The discoveries were in many cases authenticated by the affidavits of witnesses.

At Stanton, the county seat of Montcalm county, an archeological society, or "Syndicate," was formed, which purposed to make explorations and exploit the finds. Some of the pieces that had been discovered were bought outright, and a refusal was obtained for the purchase of others; but before committing them-



FIG. 20. — Michigan forgeries, First series. Casket. Cover ornamented with a section of a city wall and gate.

selves irrevocably to the enterprise members of the "Syndicate" had photographs of the finds made which were submitted to Professor F. W. Putnam and one or two other experts; and near the end of June 1891, Professor Alfred Emerson, then at Lake Forest College near Chicago, was brought to Wyman to make a first-hand

study. "The articles were bad enough in the photograph," wrote Professor Emerson afterward; "an examination proved them to be humbugs of the first water. They were all of unbaked clay, and decorated with bogus hieroglyphics in which cuneiform characters appeared at intervals. These were all stamped. By way of economizing labor the characters were turned upside down sometimes, or laid sideways. On the back of one piece the same character was represented whole lines at a time. There were incumbent lions on some lids of the caskets. Of these one or two had no tail. I told one of the gentlemen that a *primitive* artist would never make such an omission. He said that the Society had found the same fault,



FIG. 21. — Michigan forgeries, First series. Tablet and cup.

and that afterward pieces with good tails had been found. On opening one casket we found that the lid had been dried on a machine-sawed board. I was in the woods one day and helped open a real sepulchral mound. The 'pottery' was found in mounds of a different sort, very low; but the natives, day laborers and ex-lumberman, declare that they are essentially different from 'turnouts.' "

Of this first lot of "finds" I am not able to show any examples; but the general character of the more ambitious pieces may be discerned in the accompanying illustrations (pl. vi and figs. 20, 21). Of



ARCHEOLOGICAL FORGERIES FROM MICHIGAN, FIRST SERIES. CLAY TABLETS AND CASKET

the caskets about thirty were reported, measuring from a foot to thirty inches in length, with a width of six to ten inches. The covers were in part ornamented with grotesque figures in bold relief; the sides with simulations of cuneiform characters and hieroglyphics arranged sometimes with iteration of a single symbol, sometimes in naïve confusion. Similar characters were impressed upon the tablets, of which about seventy-five were reported; most of them were small, not too large to be held in one hand. Some of the tablets were found in the caskets, as were also small pieces of copper, apparently made by beating common coins out smooth and impressing characters upon them with a small chisel. In one casket fifteen of the dies used in stamping on clay were said to have been



FIG. 22. — Michigan forgeries, Second series. Pipe of clay. (One-half size.)

found, but I know nothing of their character. A few crude vases and some other objects were brought to light. The material of the caskets, the tablets, and the small sphinx which after a time I myself examined, was a light-colored clay, containing so large a percentage of drift sand as to make the objects fragile. The drying, done either in the sun or by exposure to mild heat, had left cracks, the edges of which were sharp and fresh. The material disintegrated readily in water; the objects could therefore have been in the ground only a short time before they were dug out.

In consequence of the report of Professor Emerson, and of the vigorous utterances of other archeologists who had seen photographs of the finds, the "Syndicate" pocketed its losses on the objects already purchased and ceased to exist. But the persistence of the promoters and the misguided enthusiasm of others whom they were able to interest were not to be balked by an obstacle so inmomentous as expert testimony. Within three months after Professor Emerson's visit President Angell placed in my hands a long letter from a Mr William A. Blakely, of Battle Creek, a gentleman whose

probity could not be doubted, emphasizing the importance of the relics, protesting against the hasty judgment of those who had pro-

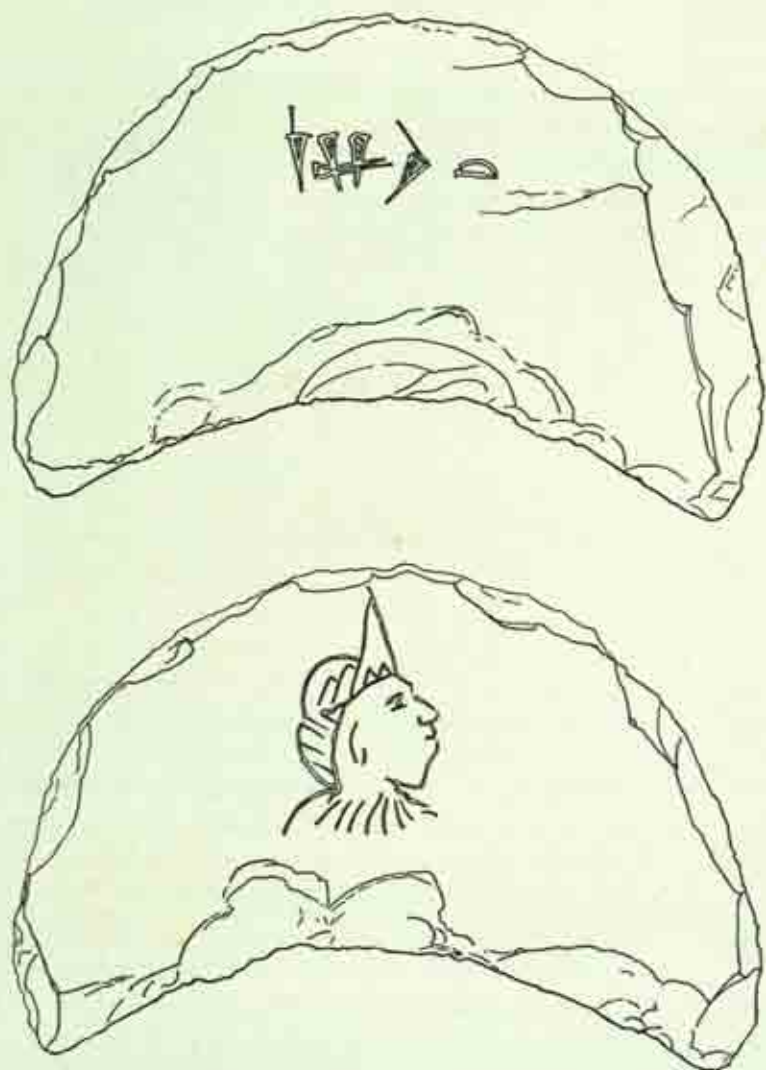


FIG. 23. — Michigan forgeries, Second series. Piece of slate. (One-half size.)

nounced against their authenticity, and asking that a representative from the University of Michigan, and if possible one also from the



MICHIGAN FORGERIES, SECOND SERIES. IMAGE OF BAKED CLAY, SUPPORTING A TABLET

Height of figure, including base, 21 inches. Wings, broken off, in front of base

Smithsonian Institution, accompany a party which would soon proceed to the region of the discoveries in order to make explorations.

Toward the end of 1891 specimens were brought to the University in order to convince us that, since they had been found in the presence of presumably reputable witnesses, they must be genuine. The jumble of ancient Oriental writing was explained as due to the composite character of a colony, comprising Egyptians and Phœnicians, as well as Assyrians, which in a remote period found its way from the drainage area of the Euphrates and Tigris across the seas, up the St Lawrence and the Lakes to Michigan. As a writer in the *Christian Herald* naïvely declared: "They [the colonists] must have left there in a period of remote antiquity. It must have been before the Exodus, for Moses speaks of the iron furnace and iron bedstead of Og, king of Bashan. But these people used bronze or copper instead of iron, showing that the arts of iron were not known to them." Since honest people were being deceived and efforts were still put forth to sell the "finds," it seemed best to give to the local papers a statement in regard to the true character of the discoveries and to send a somewhat fuller account to *The Nation*, which published in the same issue (January 28, 1892) a letter from Professor Morris Jastrow, of the University of Pennsylvania, denouncing the forgeries and warning collectors against them. The agitation of the matter soon ceased, and at the University, at least, there was no expectation that it would ever be revived.

In the summer of 1898 a man who presented a general appearance of dilapidation brought to the University museum in Ann Arbor a couple of wooden trunks containing a few human bones and a miscellaneous collection of objects resembling those that had been unearthed in 1891. He had also an upright box in which was a seated figure of baked clay holding a large tablet; the front of the box opened like a door (pl. vii). The curator was given to understand that the objects had been transported from place to place as an itinerant exhibit; that the owner had pressing need of funds, and that therefore the University might have the privilege of purchasing the entire collection for one thousand dollars. Being laughed at, the man after a time reduced the price to one hundred

dollars; finally, assured that he was dealing in forgeries, and engaged in a hazardous undertaking, he begged leave to deposit the trunks and the box in the storerooms of the museum until he should come for them. The curator deemed that he would be rendering a service to the public by withdrawing the spurious relics from circulation, and took the collection in charge; and the owner has not

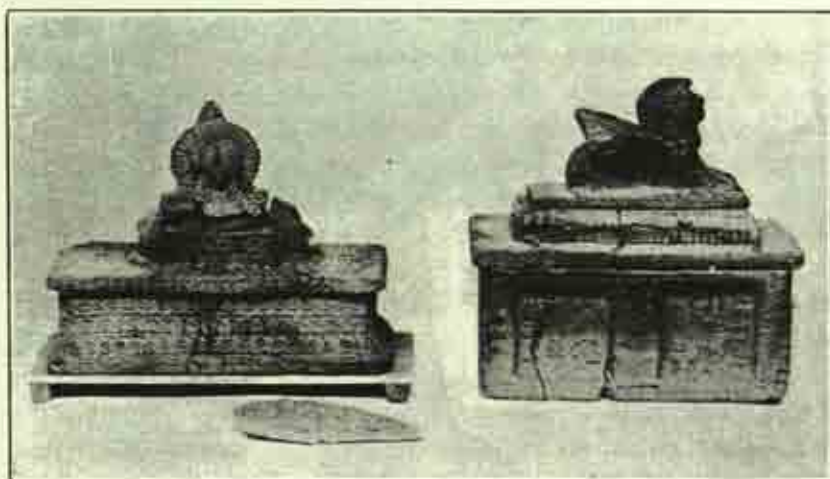


FIG. 24. — Michigan forgeries, Second series. Caskets. In the foreground, an implement of flint (7 $\frac{3}{4}$ in. long), genuine.

yet come to claim the property. In the trunk, besides the objects mentioned, there were found some admission tickets, and a certificate attesting to the discovery of one of the caskets, with four signatures, all in the same handwriting;¹ also a handbill with the head-

¹ "history of The Winchester Casket

"I myself helped dig this Beautiful Casket this Casket has 3 faces of human Representation upon the Cover. this Casket Contained Some Stone tools [paper torn] and 2 peices of Copper Coin and [torn] bonised Cloth the Casket Sat upon the altar in a Bed of Charcoal ashes and Burnt Bone the altar was made of Clay Burnt Very Hard over 13 Skelletons."

"yours

"Daniel Worthington

"Jacob Swartz

"Isaac Seinholtz

"Wm. H. Scotford

"Winchester

"Mecosta Mich."

ing "Deposits of Three Thousand Years Ago!", advertising "The Finest Collection of Pre-Historic Relics Ever Exhibited in the United States."

The caskets and other objects of clay in this collection differed from the first lot in two respects: There was an improvement in the workmanship, and the clay was baked hard. The forger had benefited by criticisms and was improving in his technique. Nevertheless the symbols and designs were for the greater part identical. Here, for example, is a pipe, laboriously stamped with cuneiform

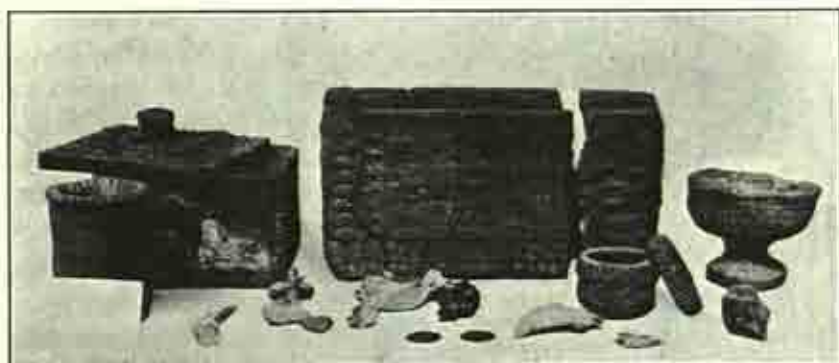


FIG. 25. — Michigan forgeries, Second series. Two caskets, cups, two coins, fragments of arrowheads (genuine), bits of metal slag, and clay.

and other characters (fig. 22). But greater ingenuity is manifested in the large "Deluge" tablet the design of which is repeated from a similar tablet in the first series. It is shaped like a diminutive tombstone with a rounded top (height 11.5 inches, width 10 inches). It is divided by parallel horizontal lines into four fields or bands. At the top we see the same cuneiform character as on the later copper tablets; at either side are human figures in an attitude of adoration, represented perhaps as worshipping false gods. In the scene below there is a city gate with high towers at the right; in front of it are figures of men with upraised hands, on whom the rain is descending. In the third band the Ark appears, floating; in the last it has come to rest, and the animals seem to be passing out from it toward the right; in the corner at the bottom the designer perhaps intended to represent Noah and his three sons offering thanks. Less elaborate

is the adornment of a crescent-shaped piece of slate, which presents on one side the same cuneiform character and on the other a head and profile with a headdress resembling a jockey cap (fig. 23). Still other objects are shown in the illustrations (figs. 24, 25).

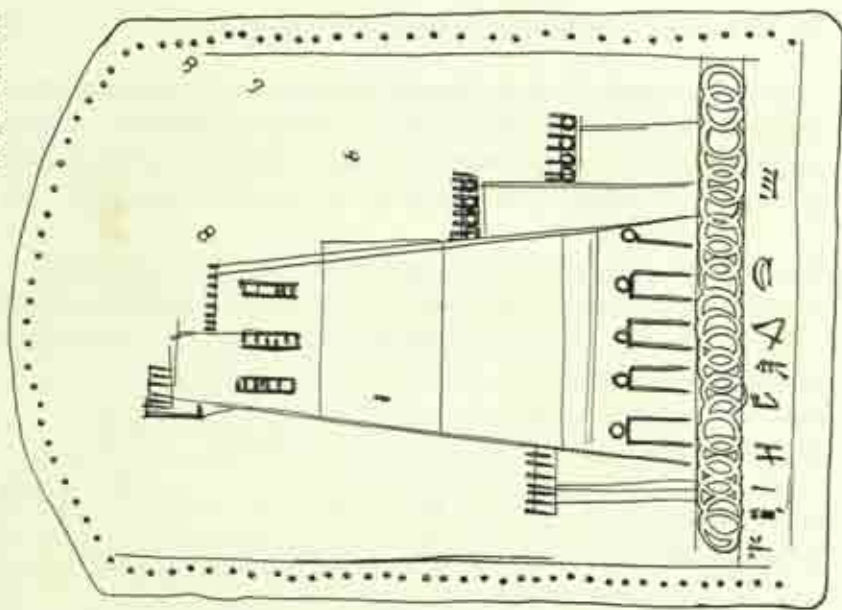
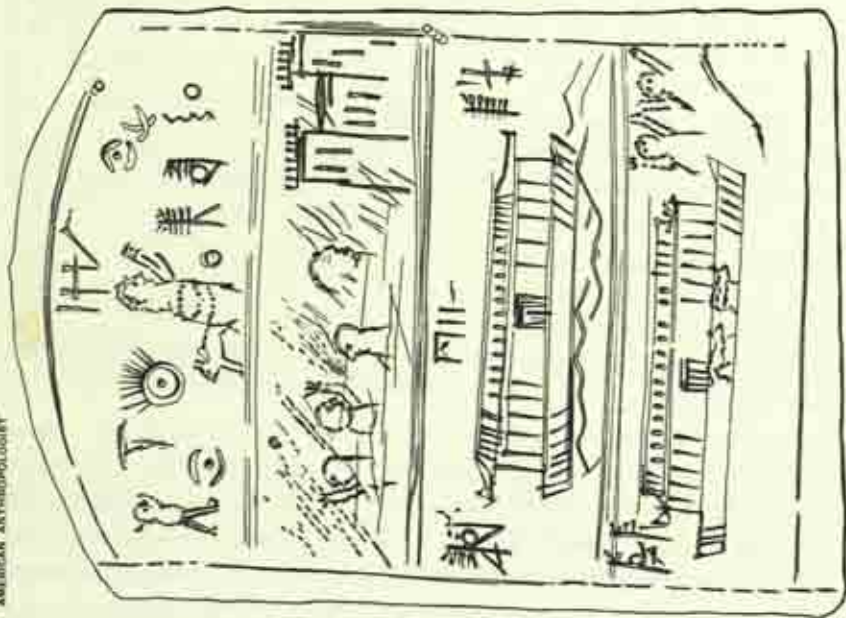
During the past year the energies of the same forger have again become manifest. From different and widely separated points have come reports that copper implements and tablets of a unique character were being offered

to collectors, and that the distributing center was Detroit. Some success in disposing of the specimens seems to have been met with; at any rate within a month I have visited a collector who had purchased not far from fifty, and had added them to a very creditable collection of genuine prehistoric types. The surface of these specimens had been corroded to give the appearance of age; but notwithstanding the difference in material, the designs are in part identical with those familiar from the previous forgeries.



FIG. 26. — Michigan forgeries, Third series. Copper tablet (one-half size). "Calendar."

Here again we find the "Deluge" pictured in four bands, with only slight variations in detail from the representation upon the tablet of baked clay; on the back of the same tablet is a tower, which was probably intended to suggest the Tower of Babel. These two designs are shown in the accompanying plate VIII. Hardly less curious are the designs of the "Calendar" (fig. 26) and the double tablet





MICHIGAN FORGERIES, THIRD SERIES. "DELUGE" TABLET, COPPER (ONE-HALF SIZE.)

suggested by some Biblical illustration (fig. 27). The copper crown (fig. 28) was reported to have been found upon a skull.

Incised upon the crown as well as the tablets is a cuneiform character associated with both the previous series of frauds (see figure 20 for the first series; the piece of slate (fig. 23 for the second), the sign manual, as it were, of the forger. This char-



FIG. 27. — Michigan forgeries, Third series. Copper tablet (one-half size). "Ten Commandments."

acter, as I am informed by my colleague, Professor J. A. Craig, is a curiously inverted combination of two signs. The first, , is a mark indicating the division of words in Old Persian; the other, , a syllabic form found in Babylonian and Assyrian. Both signs are reversed, as if the forger had worked from a tracing turned

wrong end to. Characteristic of the exploitation of this series of forgeries, as of the first two, is the use of certificates signed by those who were present at a discovery as evidence of the genuineness of the objects found.

The enterprise of a reporter for the *Detroit News*, Mr W. A. Benschoter, has established the fact that while a number of persons



FIG. 28. — Michigan forgeries, Third series. Copper crown.

have been concerned with the exploitation either of the first or of the third series of forgeries, one man was intimately connected with both. This is James O. Scotford, a sign-painter, who formerly lived in Montcalm county; at the time of the wonderful discoveries near Wyman he manifested a skill in finding relics that made him the envy of the region. He is now living in Detroit and has been active in selling the bogus coppers. The name William

H. Scotford appears as the last of the four names (all, as previously remarked, in the same handwriting) upon the certificate of discovery which accompanied the second lot of frauds, being deposited with them in the museum of the University of Michigan.

Why, you will ask, have not steps been taken to put so incorrigible a scoundrel as the manufacturer of these spurious objects in an institution where his ingenuity and skill may be expended in the service of the state, without opportunity to deceive or beguile? Under existing laws this worthy end would be difficult to compass. Now that pure-food legislation is making progress we may perhaps hope for national regulations which will make the manufacture of objects of archeological interest as unprofitable as the adulteration of coffee or sugar. Up to the present time, however, the attitude of the various governments toward the manufacture of "antiques" of every kind has generally been lenient enough; all nations in these days are disposed to foster new industries, without being too inquisitive in regard to the disposal of the product. For the immediate future at least the principal weapons available for contending against archeo-

logical forgeries must continue to be skill in detection and publicity regarding the operations of forgers.

The forgeries of which I have spoken differ from all others which I have examined in this, that they are unsophisticated. The forger did not know enough about genuine relics of any class to make intelligent imitations. He had never seen the things which he undertook to reproduce; he translated roughly into substance a medley of representations which he had found in books or magazines and which, in his working sketches, he jumbled together after the manner of a child. It is fortunate for collectors that so wily a forger had not a better understanding of his business. His product is in a class with the "petrified man" of William Ruddock, which was alleged to have been found in 1876, in the Pine River region of Michigan, whence most of the Scotford "finds" have come. The "petrified man" was itself an echo of the Cardiff Giant, and may possibly in turn have suggested these ventures in a new field. One of my friends thinks "forgeries" too dignified a word to apply to such objects; he would call them simply "fakes."

The success that has attended these efforts at imposition — so far as they have been successful — is I think almost wholly due to the religious element in several of the designs. These are at the same time self-interpreting and mystifying; and their presence has seemed to turn the attention of many away from consideration of the material and the crass incongruities in design and technique. I have seen some of the pieces handled with unfeigned reverence.

There is no danger that by frauds such as these purchasers for museums will be imposed upon; but it is the duty of the expert to protect so far as possible the amateur collector, not only for his own sake but because he creates the market for archeological remains which without such a stimulus would be neglected or destroyed as of no value and so lost to science.

UNIVERSITY OF MICHIGAN,
ANN ARBOR.

RECENT EXCAVATIONS AT LONG'S HILL, NEBRASKA

By ROBERT F. GILDER

INTRODUCTION

While pursuing archeological studies in the northern part of Douglas county, Nebraska, in October 1906, I chanced upon an excavation in a low tumulus similar to others in the neighborhood. Splinters of human bones lay about the edge of the excavation, which was somewhat more than three feet deep at the beginning of an examination that continued intermittently until ten fractured skulls and many fractured skeletal parts, as well as a few complete bones, had been collected.

When five of the crania had been taken, three of them showed a type new to me, as they exhibited massive supraorbital ridges and low foreheads. These five skulls with the skeletal parts were examined by Prof. Henry Fairchild Osborn, of Columbia University, who observed that two of them, which had been taken from a higher level in the hills than were the other three, differed in type from these others. Professor Osborn devoted special attention to the three skulls from the lower level, which he considered to be the remains of a very primitive people.

At the suggestion of Professor Osborn I asked assistance of Prof. Erwin H. Barbour, state geologist and curator of the museum of the University of Nebraska, in further work at Long's hill. Professor Barbour's first day's study at the mound resulted in his belief that the more primitive remains had been deposited, where found, by other than human hands. Five days of consecutive work resulted in finding dissociated skeletal parts at varying depths to eleven and one-half feet and thus strengthened his earlier conclusion.

The crania of the modern type were found resting upon an area of partially burned earth, or loess, of which the hill is composed. The more ancient type was found mostly below this fired earth. In no instance were parts of the so-called primitive type found nearer the surface than four feet, and at that depth only on the borders of

the burial mound. The results gleaned by my personal work in 1906 consisted of a dozen fractured skulls, of apparently three types, indicating that a burial mound had been reared on the southern end of the Long's hill knoll over other human bones.

Long's hill is named after its owner, Mr Manuel Long. It was visited by Dr Ales Hrdlička, the well-known anthropologist of the United States National Museum, who also examined the material, taken from the mound, in the museum of the University of Nebraska, to which institution I donated the specimens immediately after finding the first five skulls. In a monograph issued as Bulletin 33 of the Bureau of American Ethnology, Dr Hrdlička inclines to the belief that the bones are not of geological antiquity. He

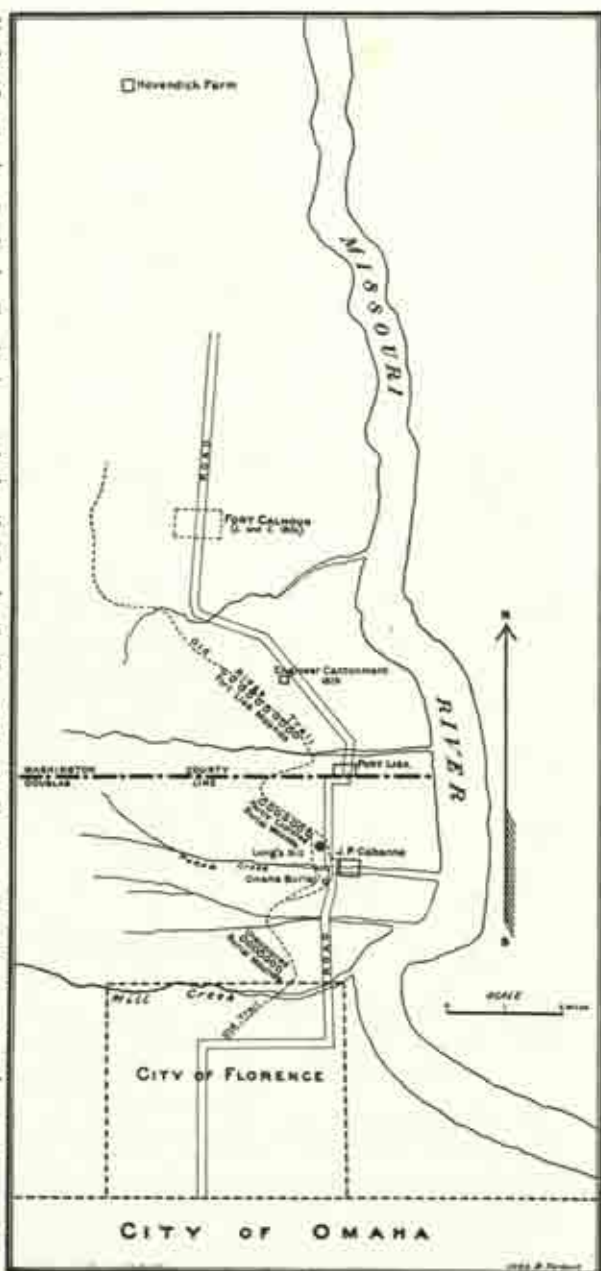


FIG. 29. — Long's hill and vicinity.

regards them as closely resembling the bones of the modern Indians, and with all the facts at hand believes it permissible to call them Indian.

THE RECENT EXCAVATIONS

In October 1907, I recommenced work at Long's hill, 12 miles north of Omaha, on a somewhat extensive plan. From time to

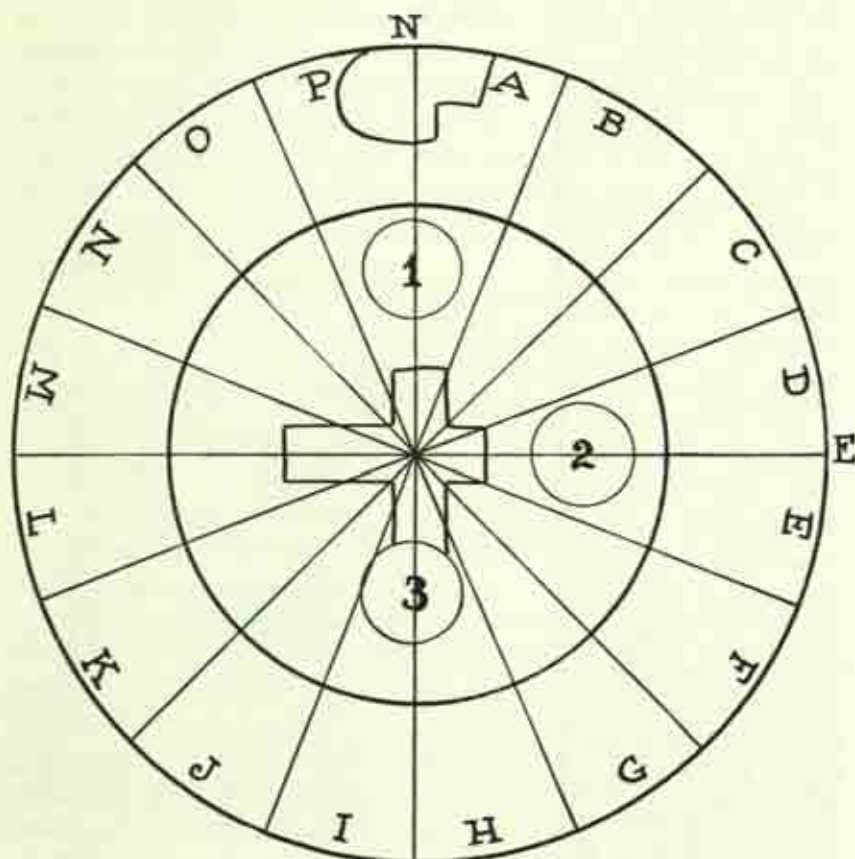


FIG. 30. — The Baird plan. Diameter of outer circle, 30 ft. ; of inner circle, 18 ft.

time during the intervening twelve months since the finding of the so-called "Nebraska Man" was first made public, I visited the old excavation and noted that no one had attempted work there, this having been prevented by Mr Manuel Long, the owner of the prop-

erty. Mr Long readily allowed visitors to inspect the site however, and two distinct paths have been worn from the road to the edge of the excavation. Arrangements were made with a farmer living at the foot of the hill to permit any scientific investigator to make

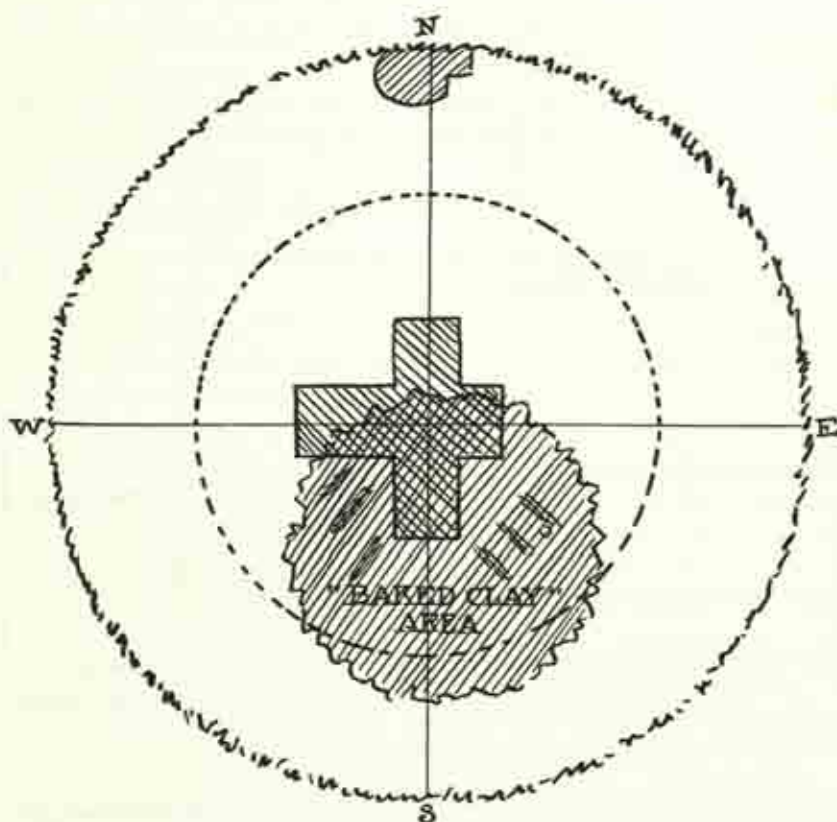


FIG. 31. — Author's plan. Outer circle, 30 ft.; inner circle, 18 ft. The cross in the center represents the original trenches; the small shaded circle indicates the burial mound showing baked clay area with positions of skeletons found lying thereon.

use of my tools should he desire to work there, but with the exception of Prof. Bohumil Shimek, of the University of Iowa, I believe no one took advantage of my offer. Hardly a week passed, winter or summer, without my visiting the hill, and during these visits critical examination was made of everything having the slightest bearing on the deposition of the various cranial and skeletal parts,

so that when the work was recommenced I had as thorough a general knowledge of the conditions as could be gained.

On October 30 I began to cut through a section at the southeastern portion of the excavation, at the point where Dr Aleš Hrdlička had made such an attempt in January 1907, at a time when frost penetrated the ground for three feet, making it impossible to do more than mark the earth.

When the wide trench had reached four and one-half feet southward from the point of beginning a skeleton was encountered at a depth of four feet three inches beneath the original surface. The bones lay together, with femurs reversed, the longer bones on top

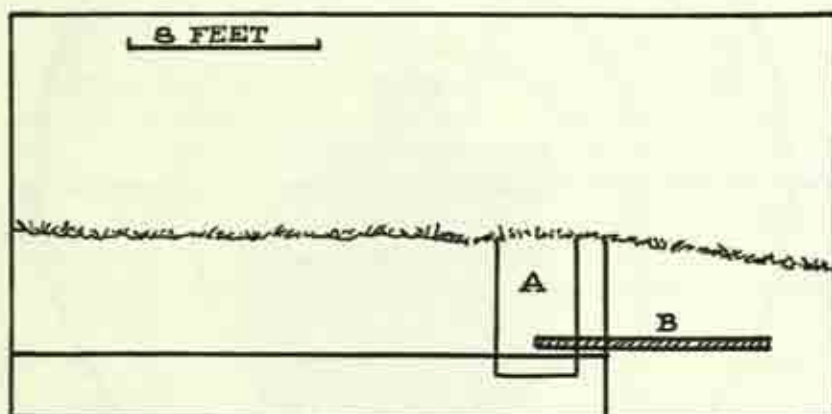


FIG. 32. — North and south cross-section of Long's hill knoll and burial mound. A, Huntington's trench; B, Baked clay area. Below the horizontal line more ancient bones were found extending to the extreme left.

of the vertebræ and ribs, the general direction of the skeleton extending southeast and northwest. The skull, which lay south, and an inch or two west of the other bones, occurred in the same position as that of similar burials I have frequently found in this valley on both sides of the Missouri river. All loose earth and lumps were carefully swept away, and most of the bones and the skull exposed. The latter was resting with face uppermost; a small root the size of a finger had grown through the roof of the mouth and out of the nasal opening, keeping it in that position. The skull was filled with earth. Before removal of this material, ten inches to the southwest

and on the same level all four of the leg bones of another skeleton, with most of the bones of one foot in proper place, were found. Still farther southwest, and on the same level, were the four leg bones of still another skeleton, and all the bones of one foot and several of the other foot lying in proper place. The skeletons lay parallel to one another. On the same level, associated with the bones, were sherds of very thin pottery, one of which showed the markings of a grass-wound paddle, besides a sherd, nearly a quarter of an inch thick, the binder of which is similar to that of pottery fragments I have found on neighboring house sites. There were also a calcined "ivory stone" from a fish head, flakes of charcoal, and pieces of mother-of-pearl — all closely associated with the bones.

The ground upon which the skeletons lay had been baked or hardened by fire. Three of the skeletal parts are calcined, indicating that the bones had been laid upon live coals. With the bones were two small, beautifully made flint scrapers, perfect in outline, skilfully flaked, and altogether similar in material, outline, and workmanship to scrapers from neighboring house sites. These implements were covered with accreted lime, not thicker than ordinary paper, which rubbed off easily between the fingers. A portion of the fired earth or baked clay from beneath the bones where the calcined pieces lay, the pieces of shell, and the flakes of charcoal, some of the latter still embedded in the earth matrix, were carefully preserved. This material I have marked A-II-30-07.¹ (See pl. xi, a, a'.)

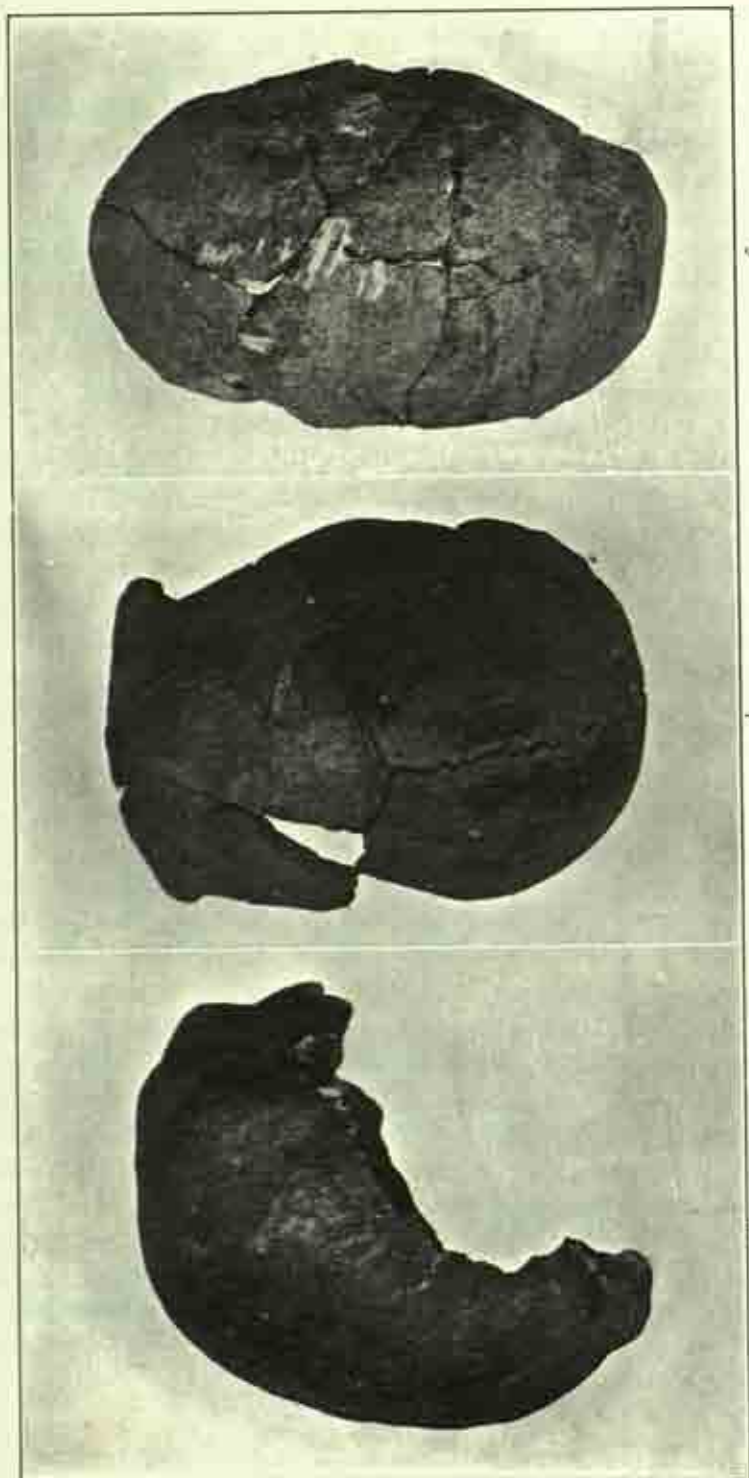
On November 6, I cut a section through the northwestern portion of the Long's hill excavation sunk twelve feet by Professor

¹ In June 1905, accompanied by E. E. Blackman, archeologist of the Nebraska Historical Society, I found a similar burial on the summit of a high knoll a mile from the railroad station of Crescent, Pottawattamie county, Iowa. Fire had been made on the top of a hill, and the longer bones of the skeleton had been bundled before burial. The bones nearest the fire were thoroughly baked and were very much more blackened than those above them. Beneath this material the ground had been reddened by fire, and in describing it I would say it was baked clay, although in reality it was baked loess—a material of which bricks are made in this neighborhood on both sides of the river. On June 14, 1905, I published in the *Omaha World-Herald* an account of this burial, of which the following is an extract: "Beside the bundle, and three inches east, or north by east, was a human skull. The bones lying nearest the surface were partially burned and showed contact with fire. Those farther down were baked rather than burned. Three sets of bones were found, all of which were in a direction from southeast to northwest."

Barbour and later deepened and widened by Professor Shimek. My operations with a geologist's hook and trowel at various times during the year had filled in the deepest part about two feet. At the exact point where I had seen Professor Shimek resting his left hand while wielding a short-handled "cotton hoe" with his right, in sector P of Professor Barbour's ground-plan (fig. 30), I thrust my spade through the upper part of a femur which lay apparently east and west. This led to my cross-sectioning that part of the hill toward the northwest. The femur lay about seven feet beneath the original surface. My method of work consisted of carefully cutting down the face of the section after the manner of a terrace. A foot above and a foot west of the femur, and at a distance of eighteen feet from the center of the Barbour plan, were several crude stone blades heavily incrustated with lime. Four inches beneath the stones were several fractured skeletal parts, some lying east and west while others lay at right angles to them. Two small broken femora were next found, lying beside a fractured jaw. The former were partially covered with an accretion of lime, but the parts were easily fitted together, making two almost complete bones, although apparently not belonging to the same skeleton. Both, however, are cut, and gnawed by animals. These two bones appear to be pitted on all sides, showing surfaces much rougher than any other bones found in the hill up to that time. The lower jaw retained three molars and two premolars. Two of the molars were worn mostly on the outer side, while the other three teeth were worn chiefly on the inner side. Four teeth lay near the jaw.

A large block was next cut out from the right of the terrace, revealing, seven feet from the original surface, the back of a skull. Protruding from the earth filling the skull was a crude unflaked flint blade, heavily incrustated, like the skull, with lime. Of the skull the frontal, parietal, and a small portion of the occipital alone remained. The outer surface is much pitted, and the inner surface is very heavily accreted with lime. Most of the supraorbital ridges have been cut or gnawed away. This material is numbered II-6-07. (See pl. IX, c.)

On November 10 I carried the excavation farther northwestward until well outside the 30-foot circle of Professor Barbour's plan. In



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sector O, nineteen feet from its center and at a depth of six feet, were encountered two badly shattered skulls, with low, retreating frontals and heavy supraorbital ridges. Of neither skull was a piece found as large as the palm of the hand. Each seemed to have laid on the side, one above the other. A dozen skeletal parts, also badly fractured, lay near the skulls, and with them were parts of four skulls of infants. Close beside these bones were what Professor Barbour identifies as the united or coössified metatarsals of a mule deer. This material is numbered II-10-07.

On November 17, assisted by Messrs S. P. Hughes and J. B. Gallatin, who have also rendered valued assistance in the mound work at Fort Lisa, I commenced operations again on the south side of the excavation. Clearing a space five feet square and five feet deep, fragments of shell and charcoal flakes were found.

On the same day considerable work was done outside the northwestern edge of the 30-foot circle (Barbour plan), in sector O, commencing where operations ceased November 10. At a depth of six feet from the original surface, a number of fractured skeletal parts were found. No root or gopher holes marred the simplicity of soil construction. The bones were the upper part of a femur, and some pieces of tibia and humeri. These bones lay 20 to 21 feet from the center of the Barbour plan.

On November 24, again assisted by Messrs Hughes and Gallatin, the wide and deep northwestern excavation was extended five feet farther west and two feet northward, at which point were found one skull, fractured but not scattered (twenty-six parts of this skull have been restored; see pl. XI, *b*, *b'*); one frontal bone, in four parts, a portion of the supraorbital ridge missing; another skull, its frontal minus most of its supraorbital ridges, its occipital lying concave side upward upon its frontal and parietal, which lay with concave side downward; the greater portion of a child's skull which still retains three inches of earth adhering to its concave side. The skeletal parts, including the skulls, were heavily incrustated with lime. This material is numbered II-24-07.

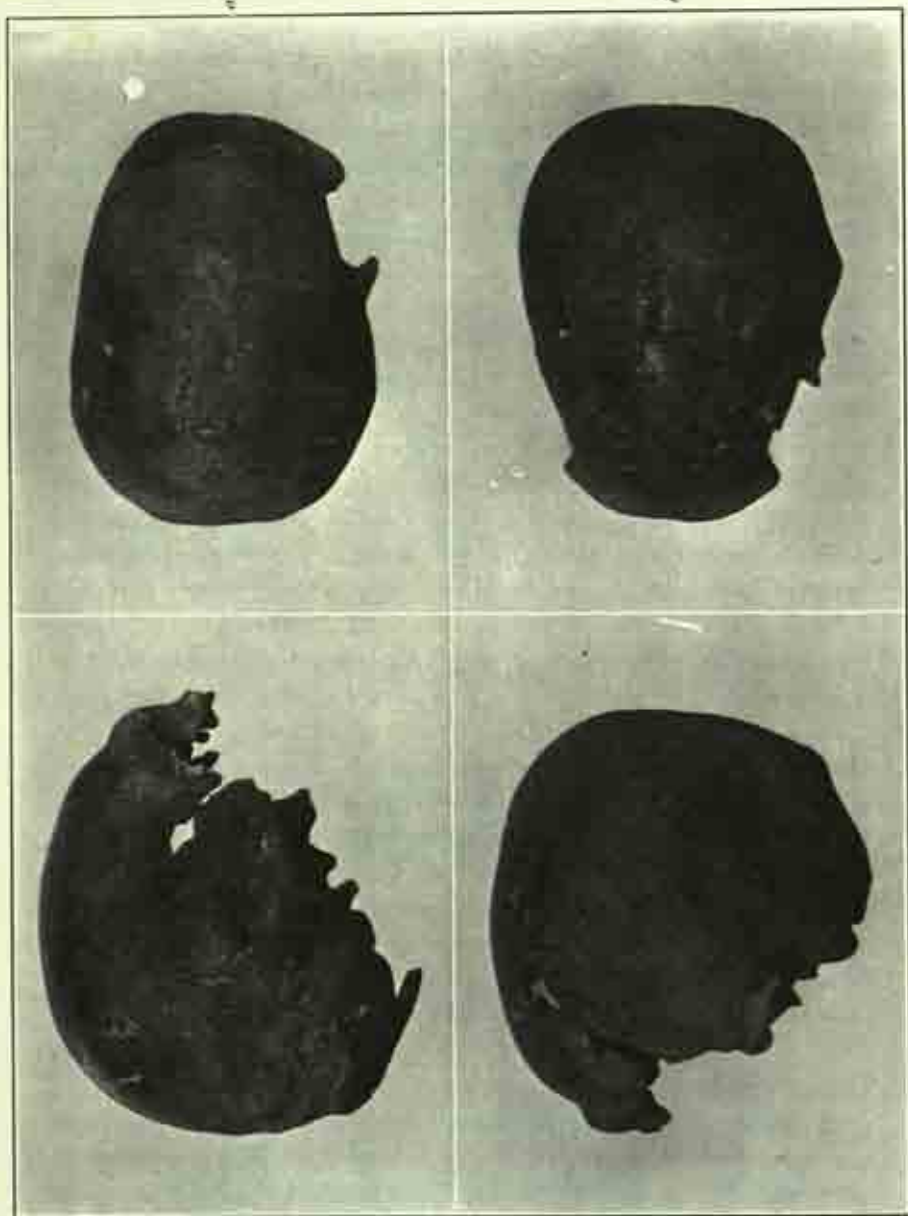
It may be noted that no ancient human crania or skeletal parts have been found south of the center of the ground-plan of Professor Barbour or south of the center of my first east-west trench. The

burial material found south of this line may be Mandan, or at least that of the people who occupied the house sites so numerous in the vicinity of Long's hill. After a careful inspection of the knoll from all sides, and especially from its western slope, at various elevations, it has been determined that the burial mound was originally built over the southern part of the knoll. My opinion, based on careful examination of the entire surroundings, is that the center of the original mound was south and a little east of the plan drawn by Professor Barbour (see fig. 31). The most perceptible descent from the knoll is south, bearing easterly, and erosion was more rapid on that side in consequence. Huntington's trench in reality was not in the original center of the mound when the latter was formed, but it was probably the highest point when the Huntington party began operations, because the earth had eroded from the original crest (see A, fig. 32). The contour of the knoll and that of the burial mound can still be traced in outline from a short distance down the western slope with the hill silhouetted against the sky. The burial mound can also be partially traced from inside the excavation.

The material secured November 24 was taken from a six-foot level under a surface which showed no elevation from the surrounding knoll.

In hastily prepared magazine and newspaper articles of a year ago (1906) I made reference to "baked clay" covering the "lower layer" of bones. The specified limits of these articles did not admit of careful description of really important features in connection with the position of the various osseous remains. From time to time there has been made in the press particular and erroneous reference to this burned clay stratum, and I believe a brief description will clear away much of the misunderstanding respecting the mound burial.

"Fire" burial, so called, was not a new or strange feature to me at the beginning of operations at Long's hill. In nearly sixty burials which I have examined on both sides of the Missouri river it was a recorded feature in all but one instance. In every case where fire was noted the skeletal parts were above the ash-bed. I was not surprised to find evidence of fire at Long's hill, nor was the



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presence of baked clay at all unusual. What impressed me as unusual was the finding of human bones beneath the baked clay. With the exception of burials by the Omaha tribe (see Note A), it was the first instance in which such a condition had been found.

A thorough examination of the Long's hill burial mound, covering a period of more than twelve months, has determined conclusively that the baked clay area was approximately nine to ten feet in diameter. Some flakes of charcoal were found outside of that limit, it is true, but I have frequently found charcoal and charcoal flakes at various points in this section, two, three, and even ten feet beneath the surface, where no burial mound or house site was near.

Finding some of the older material beneath the baked clay shows that its area extended north of the south side of my initial east-west trench. In order that there could be no question regarding the extent of the stratum, much of my work last autumn was with a view of determining the exact area covered by the baked clay. As much of the northern part of the burial mound had been dug over several times, this was not an easy task. Southwest of the Huntington excavation I was able to expose a good section of the stratum in situ, two inches in thickness, although sometimes less, running out in the hilltop immediately to the west. It extended seven feet south of the point of starting. The distance from the extreme southern point to and a foot beyond where material numbered A-10-30-07 was found lying upon baked clay, with charcoal flakes and calcined human bones, was a fraction short of nine feet. The northeastern part of the area was so broken by repeated digging that an accurate line of demarkation of the baked clay was not obtainable on that side, which should be in sector D of the Barbour plan and in circle No. 2, were it opposite the northwestern extremity of the baked-clay stratum.

In all twenty-five crania or parts representing that number have been taken from all levels of Long's hill.

In closing I would call attention to an apparent relationship between the cranial material and the manner of burial of skeletons in Long's hill burial mound and from tumuli at Fort Lisa and the Hovendick farm (See Note B, 1 and 2), and I would also direct especial attention to the sherds and the finely made flint implements

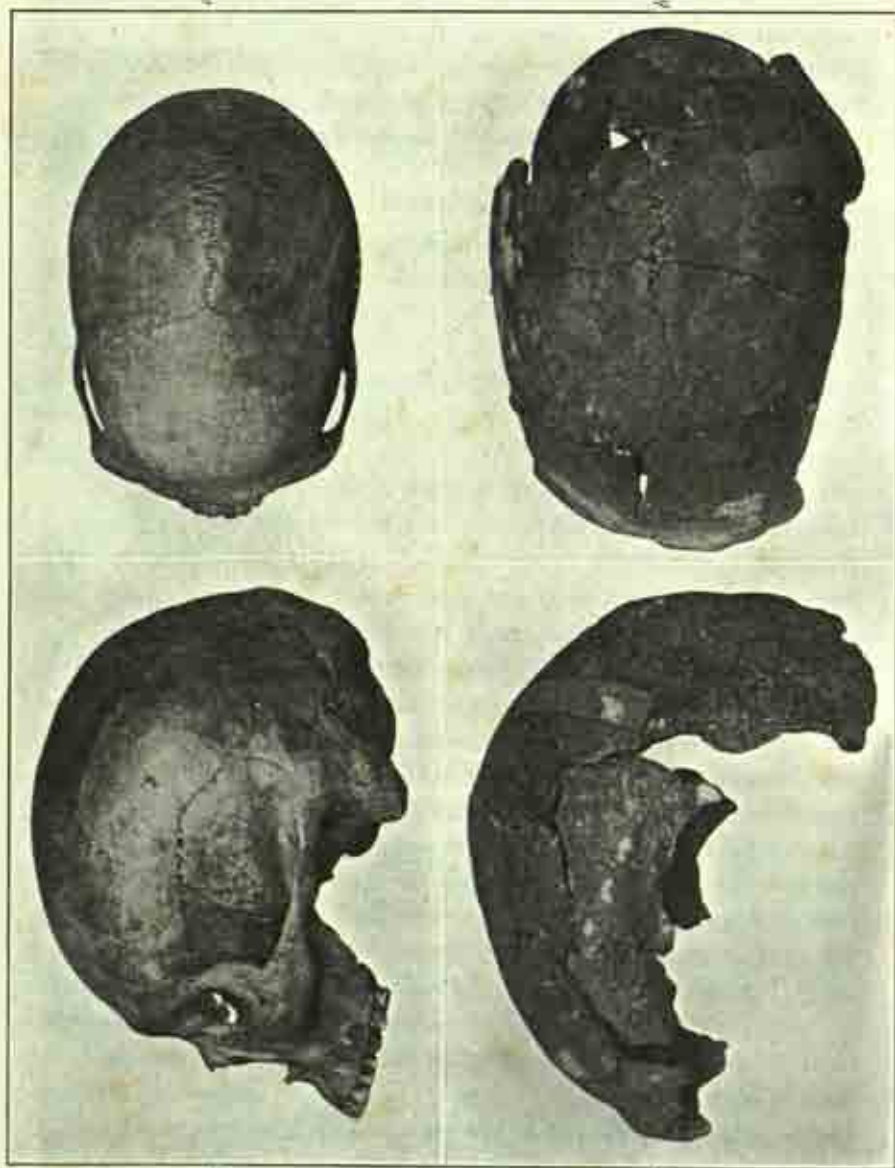
associated with the bones in the mound covering the baked-clay area on Long's hill and then to the crude, heavily accreted, unflaked flint and quartzite blades associated with the material called "Loess or Nebraska Man" scattered without order at various depths through the northern part of Long's hill knoll.

POSTSCRIPT

An unusually open winter enabled a continuation of field work to date. After finishing my cross-section of Long's hill in November last, made at the suggestion of Mr Harlan I. Smith, and the determination of the presence of a deposit of fractured bones from six to seven feet beneath the surface, and well outside the tumulus, I worked over the earth inside the excavation, securing several important skeletal parts.

On January 22, 1908, I sunk a trench cross-sectioning the Long's hill ridge fifty feet north of the center of Long's hill excavation in a scarcely perceptible elevation about fifteen feet in diameter. The earth for two feet down consisted of a mixture of dark and light soil. Three feet from the surrounding surface I found a skeleton the bones of which lay north and south. The skull lay toward the north, the occipital reposing upon two bivalve shells, while arranged about and in close proximity to the skull were six other shells. One of the shells is that of a freshwater mussel, the others being very thick and similar to shells I have collected about the Virginia capes. To the west of the skull and shells lay a black flint punch, $3\frac{1}{2}$ by $2\frac{1}{2}$ by 1 inches, which fits the thumb and fingers of the right hand. Just above the punch lay a large barbed arrowhead of flint, similar to arrowheads in my collection from the valley of the Mississippi and known as the "Mound-builder" type. Neither of these two flints is native to this section.

The anterior portion of the skull is wanting, only about two-thirds of the frontal bone being present. The two femora, a portion of two pelves, a dozen disintegrated vertebræ, and some bits of ribs were saved. The femora were reversed in position, and the pelves lay at the southern end of the burial. The position of the bones of this burial was similar to that of the burials on the burned-clay area of Long's hill burial mound, except that the skull lay at the



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north. The earth beneath the bones was unmoved loess, and it appeared as if the latter had been laid on the top of the hill.

The femora are unusually heavy, and compare well with the femora from the baked-clay area of Long's hill burial mound. This material is numbered I-22-08.

On January 26, 1908, accompanied by Messrs Gallatin and Hughes, I dug another cross-section 44 feet north of the work last described, and in the same ridge. At about the same depth were found the remains of a female Indian skeleton; the skull, which is entire, is low-browed, and most of the skeletal parts procured correspond well with the skeleton found a few days before. Fractured drift spalls, flint scrapers, and a shell ornament were found with the human remains.

NOTES

NOTE A.—A hundred yards south of Ponca creek, Douglas county, Nebraska, near the base of one of the higher bluffs bordering the river valley and twenty rods immediately west of the site of the old trading post of John P. Cabanne (see fig. 29), thirty feet above the valley road, in the late fall of 1906, I commenced operations in a low mound which had been partially explored by unknown parties. The hole which had been dug was on the northern slope of the elevation. Immediately south of this excavation, a foot beneath the black vegetal mold, I found evidence of fire. The earth (loess) had been burned until a soft brick somewhat more than twelve inches square had resulted. The baked portion was reddish orange in color and four to five inches in thickness. Four inches beneath the baked clay (loess) were three iron spear-points, a knife blade six inches long, and, lying beside it, a handle for the latter, made from the rib of some large animal. This handle had three holes pierced through near one end which fit opposite three holes in the haft portion of the knife blade, indicating that the rib had been fastened to one side of the blade by rivets or bolts. Five brass rings, probably bracelets, lay a few inches beneath the blades. Four feet beneath the implements reposed a skeleton at full length, or the longer bones of a skeleton, with the skull and lower jaw. Six inches of finely powdered earth (loess) covered the bottom of the grave, which was six feet long by two feet wide. A dozen glass beads, some blue and others black, lay in the dust, and just beneath the bones was a round rifle bullet, similar to that used in an old-fashioned flintlock rifle, suggesting a tragedy. The remains were more than three feet beneath the fired earth. The burial was similar to Omaha burials of

historic times, and the development of the cranium indicates an Omaha Indian. Roynon C. Jones, my nephew, and George C. Clark, stepson, assisted in this work, designated in my field notes as B-II-06.

NOTE B 1. — Early in June, 1907, a farmer named Hovendick, while plowing for corn on the summit of a plateau 100 feet above the Missouri river valley, in Washington county, Nebraska, twenty miles north of the city of Omaha, turned up a number of human bones. With a spade he succeeded in unearthing five human crania. Word of the "find" reached me the next day, and accompanied by Mr Thomas Osterman, editor of the *Blair Democrat*, I visited the Hovendick place. At the point where the farmer had dug up the skulls no elevation above the surrounding surface was noticeable. His operations in recovering the five skulls almost destroyed a number of others and factured many skeletal parts, but I was able to save two fairly well preserved crania of a type similar to those recovered by the farmer. These remains were within six inches of the surface. Thirty paces north of where Hovendick had found the first bones, he plowed out others, but these, fortunately, were not further disturbed. Within four inches of the surface at the latter point I uncovered a section four feet square, revealing a stratum of bones eighteen inches thick. Those nearest the surface had been broken by tillage, but the ones farther down appeared to be laid with some degree of regularity in bundles. The marginal limits of the bone bed could not be determined because of lack of sufficient time. Three fairly good crania and many skeletal parts were procured, and at the time I was compelled to leave there were six other crania in sight. One of the femora was thrust through an occipital. There was a fairly well developed supraorbital ridge in these skulls, and a somewhat depressed frontal. Near the surface I obtained a modern Indian frontal bone, presumably that of a young woman, showing good eminences, no marked supraorbital ridges, and moderately thick skull walls. The lower stratum of skulls differed materially from that described in Note A. No evidence of contact with whites was found.

NOTE B 2. — In Washington county, Nebraska, three miles north of Long's hill and the Ponca Creek district, on a ridge which extends northwest from "Fort Lisa," where Manuel de Lisa established his first trading post, occurs a succession of well-defined mounds that cap the ridge at intervals of 100 yards throughout its entire length. Experience has taught me that these eminences are artificial, and excavation that they contain human bones. The Fort Lisa mounds are similar to those that may be seen for miles along the crest of the river bluffs on both sides of the Missouri. Early in the spring of 1907 I noted human bones in a corn-

field in which some of the Fort Lisa mounds are situated. Our first work resulted in finding a large number of human bones upon a slight eminence under only fourteen inches of earth. The plow had disturbed many of them, but two distinctly marked layers were noted. The crania from both layers were broken into many pieces, and although handled with extreme care, only two of ten skulls approached entirety when taken from their wrappings. These two exhibit widely different types, and on one the marks of fire appear. Four skulls from the upper layer had probably been buried intrusively. Two of the broken skulls have been partially articulated or restored, and they do not exhibit the type indicated by the present-day Omaha Indian. They have quite heavy supraorbital ridges, thick cranial walls, and very slight frontal eminences, if any. All the deeper skeletal material lay in bundles: the longer bones close together like a bundle of fagots, with the skull invariably at the southwestern end and a little to the side. Many calcined bones were procured; with them were flakes of charcoal, chips of white or grayish flint, and calcined limestone spalls. In working over an irregular circle twelve feet in diameter twenty-one frontal bones were noted. Other skeletons remain undisturbed, the owner of the property objecting to further excavation. (See pl. ix, *a*, *b*, and pl. x.)

North of the burial just described the mounds are a prominent feature of the landscape. The slight elevation of the mound last mentioned is readily explained. The ridge, like all others skirting the valley, is the site of the old trail, which had been used for ages by Indians until a deep depression had been worn. Following the Americans came voyageurs, trappers, emigrants, and lumbermen. There was no road along the bottoms then, for the river washed the foot of the bluff and prevented travel there. The ridge was the only possible trail, hence the white man's road followed the Indian trail along the ridge. Twenty-five years ago, when the river left its western bluffs, this ridge road was abandoned and a better thoroughfare was made at the foot of the bluffs. Then came the farmer, whose plow further cut the mounds. In fact the man who plowed the field last, informed me that, having experienced much trouble with the little eminences, he had plowed much deeper here than elsewhere in order to level them. To the north of the cornfield the old ridge trail just misses the mounds, and today they are several feet higher than the surrounding backbone of the ridge.

OMAHA, NEBRASKA.

NOTES ON THE UTE LANGUAGE

By A. L. KROEBER

The following sketch of the Ute language is based on notes taken at the Uinta reservation in Utah in 1901 as a by-product of an expedition made for the American Museum of Natural History. But little time was given to the prosecution of linguistic inquiries. As, however, there still exists no published grammar of any dialect of the great Shoshonean division of the Uto-Aztekan family, other than the late Mr Sparkman's valuable but brief sketch of Luisefño in the *American Anthropologist* for 1905, the present notes may be of at least temporary value.

The Ute language forms part of what has been called the Ute-Chemehuevi dialectic division, extending from Colorado to Southern California as the southernmost of three groups constituting the Plateau branch of the Shoshonean subfamily of the Uto-Aztekan stock. The Plateau branch is the largest of the four coördinate divisions of the Shoshonean subfamily, far exceeding in point of territory and numbers the Kern River, Southern California, and Pueblo branches.

The sounds of Ute are not full and clear. Besides the ordinary vowels, there are nasalized vowels, especially *a*ⁿ and *o*ⁿ. Ute has also the distinctive Shoshonean *ə* and *ü*. Final vowels are sometimes barely articulated. Sonants are distinguished from surds with difficulty. Velars (*q*) are infrequent. *R* occurs, but *l* is lacking. A characteristic sound is spirant *g*, *g'*, which resembles a velar *r*. The guttural nasal *ñ* is found, but not initially. *V* is always bilabial. *S* and *c* (*sh*) resemble each other. There is no accumulation of consonants. Composition or derivation occasionally brings two consonants in juxtaposition, but this is infrequent. *Nd*, *ntc*, *mb*, *pʷ*, and *kʷ* occur in stems, but these may all be developments of simple consonants. *Kʷ* is the only one of these that has been observed initially. The language makes an impression of phonetic softness rather than harshness, but of vagueness rather than distinctness.

One of the most important characteristics noted by Mr Sparkman in Luiseño is presented by the "article pronouns." These are particles differentiated for person and number, as well as for mode, logically the subject of the verb of the sentence or in apposition to it, and attached to the first word of the sentence, of whatever part of speech this may be. They resemble the incorporating or affixing pronominal elements of other American languages, except that instead of being made part of the verb with which their sense and function connect them, they are superficially attached to any word in the sentence provided this occupies a certain position. It is therefore obvious that they are short, independent, but unaccented words, which are enclitic to the first word of the sentence. When attached to an adjective, a pronoun, or the object of the sentence, they are no more combined with this than Greek *te* or Latin *que* constitutes a single grammatical form with the word which it follows. The language is therefore pronominally non-incorporating. Its peculiar treatment of the pronominal particles may help to make clear the nature of the employment of the pronominal elements in certain other American languages, such as Selish, whose "then-I saw-him" constructions are a grammatical illogicality bordering on impossibility when viewed as a form of pronominal incorporation, but are intelligible on the basis of the Shoshonean enclitism.

Incorporation being looked for during the brief study made of Ute, the Luiseño type of treatment of the pronoun was not observed; but that some form of this pronominal particle enclitism exists, is probable from several instances, though nothing like the Luiseño association of a modal signification with a designation of person in the same syllable, has become apparent.

piupi-en tikazar, heart-I eat

acendi-g'-um nozintcuⁿ manoku, (I) like-you Utes all

nū acendi-g'-uñ Purānk at' tazatc, I like-him Frank good man

#mi-en acendi tigizu-n, you-I like friend-my

punike-em qauⁿ, (I) saw-you yesterday

#m-a kukzi-iñ, you-did shoot-him?

kukzi-va-iñ, shoot-him!

nag'ami-en, sick-I

nūmi katc-um acendi-g'oaⁿ, we not-you like

oa^acura yumbute-*uñ* tokpūg'a, then porcupine-it ran
 oa^acura yog'uvitc-*uñ* onipūg'a-ic, then coyote-he did-also

Other instances appear in the text below.

It would appear that the forms for the three persons are -*n*, -*m*, -*ñ*, and that objective as well as subjective pronouns are enclitics. The objective forms have been found attached chiefly to the verb; the subjective to other parts of the sentence. The -*ñ* of the third person has been found only a few times, always with objective meaning.

Another feature of interest in Luiseño is the noun-endings which are lost in composition with a possessive prefix. In Luiseño-Cahuilla these endings, whose use and omission closely parallel those of the Nahuatl noun-suffixes, are -*c*, -*l*, and -*t*; but parts of the body, which ordinarily cannot occur without a possessive prefix, do not show these endings. The Ute noun-suffixes are quite different from the Luiseño, being -*p*, -*v*, -*tc*, and so on, or entirely lacking as in *pa*, water. They are not lost before the possessive pronominal elements.

witc, knife; witc-im, your knife; *nā* witc, my knife
 tcaxatc, younger brother; tcaxatc-in, my younger brother
 tutcivov, hair; tutcivou-an, my hair

Piupí, heart, and sōup, lungs, become pi-nañ and sō-añ in locative forms. Ordinarily locative case-suffixes and postpositions do not cause loss of the noun-ending: tog'umbābi-ba, in the sky; qai^v-am, on the mountain; ōtcedj-i-*vauñ*, in a water-basket. Saridj, dog, and muladj, mule, become sari-*vuñk* and mula-*vuñk* when preceded by a possessive pronoun such as *nūni*, my, or *ūmi*, yours. The possessive pronoun in suffix form can also be added to the -*vuñk* suffix: mula-*vuñ-un*, my mule; -*vuñk* is therefore only a suffix denoting possession, which replaces the noun-ending.

The possessive affixes differ from those of Luiseño in being throughout suffixes. They resemble the enclitic pronominal elements, being -*n* and -*m* for the first two persons. The independent pronouns placed before a noun have the force of a possessive: *nūni* kan, my tent; ag'u-m, your tongue. The possessive elements are prefixes—*no-*, *mo-*, *po-*, or *ni-*, *mo-*, *a-*,—in all three Southern California groups, as well as in the Mono-Paviotso division of the

Plateau branch of Shoshonean; in the Kern River branch they are suffixes as in Ute-Chemehuevi.

My: nose, *movi-n*; eye, *poi-n*; hair, *tutciɔ-an*; tongue, *ag'u-n*; mouth, *timpa-n*; father, *mo-en*; younger brother, *tcaxatci-n*, *tcaxatci-en*; younger brothers, *tcakaitciɔ-u-n*; horse, live possession, *puŋgu-an*.

Your: tongue, *ag'u-m*; mouth, *timpa-m*; knife, *witc-im*; younger brother, *tcaxatci-m*¹, younger brothers, *tcaxaitciɔ-m*.

The independent personal pronouns are:

First person singular, *nū*, *nūni*, *nūñū*

Second person singular, *ūm*, *ūmi*

First person plural, inclusive, *tavi*, *tami*

First person plural, exclusive, *nūmi*

Second person plural, *mūni*

These forms can be used subjectively, objectively, or as attributive possessives. They can be provided with locative case suffixes: *nū-va*, with me; and are syntactically the equivalents of nouns.

Demonstratives, Interrogatives, Indefinites:

hin, this: *hin-ai*, *hina-nuc*, *hin-tc*, this, these. Cf. *in*, who.

*oa*c*, that, he: *oa*c*, *ua*c*, *oa*c-ek*, that one, he; *umuc*, those, they; *oric*, perhaps *uru*, that inanimate, it; *umuent*, one of them.

mac, this, he: *mac*, this one, *maic*, his; *mamoca*, these, they; *mamaic*, their; *mañaic*, his.

iv, here: *izat*, *izat-ini*, here.

ov, there (probably related to *oa*c*, *ov-a*c*): *ov-a*, *ov-ai*, there.

yen, here: *yen*, here, *yan-ak*, *yan-akuc*, here it is.

in, who? *in*, *ina-ara*, *hin-unik*, who, who is he, what is he?

im, what? *imb-un*, with what? *himb-ara*, what is it?

Demonstratives are alike whether substantive or attributive.

As in other Shoshonean dialects, binary composition is not much of a factor. The qualifying element precedes the determined, whatever its part of speech. Derivation, etymological and grammatical, is much more developed. It proceeds entirely by suffixation. Not a prefix is known in the language. The negative, *katc*, is often preposed to words, but this seems to be a process of composition, not of prefixation, as in *katc-airat*, not-good, bad.

There is reduplication both in noun and verb, though apparently not to any great extent.

masorutc, woman, plural ma-masorutc-u

makoets, magpie, plural ma-makoets

In the transitive verb reduplication can accompany plurality of the subject.

acendi *nñni*, he likes me

aacundi *nñni*, they like me

acendi-g'um, I like you

aacendi-g'uk, we like you

ratcum, I caught him

va-ratcum, we caught him

ratci-pūga, he put him

va-ratci-pūga, they put him

puni-ke, look, see

umuc-ura pu-pun-tkai-pūga, they all looked up.

There is reduplication also to express iteration, repetition, or distribution.

ti-tik-pūga, ate of it (stem tika)

ma-mande-, taste of

paibani qai^v ko-koaridj, three mountain-ridges extending

paiini ag'ump adj-idjaip, three pines fallen

Powell mentions the frequent occurrence of two distinct stems to denote the singular and plural of Ute verbs. Only one apparent instance was found: pa'ka, to kill one; qo, to kill several.

There is a plural in -u, -uv, -um for animate nouns.

person, Ute	nozintc	nozintc-uv
American	marikadj	marikadj-u
man	ta'vate	tand ^v vate-i-ru
woman	masorutc	ma-masorutc-u
my younger brother	tcaxatci-n	tcakaitci-ru-n
horse	kava	kava-u
dog	saridj	saridj-u
elk	pari	pari-ov
deer	diri	diri-auv
buffalo	kutc ^a	kutc-um
bear	k ^v iag'ant	k ^v iag'ant-um
coyote	yog'uvitc	yog'uvitc-uv
skunk	poni	poni-ev
porcupine	yumbutc	yumbutc-u

beaver	parintc	parintc-uv
fish	pag'ū	pag'ū-uv
star	putciṽ	putciṽ-u-zu

In man and younger brother there is stem change.

An objective is formed by -e or -ai. It is used on animate or inanimate nouns.

horse	kara	kara-ya
dog	saridj	saridj-e
porcupine	yumbutc	yumbutc-u-ai, yumbute-i
knife	witc	witc-e
moccasin	patc	patc-ai
sun	tab*	tab-ai
horses	kara-u	kara-uv-e
buffalos	kutc-um	kutc-um-e

There are an indefinite number of locative, instrumental, and similar case-suffixes and postpositions. Some of these, like the general locative -ba and the instrumental -im, have no independent existence and are probably as truly suffixes of case as are similar endings in any American language. Other, and longer, endings are apparently adverbial stems postposed or enclitic to the noun. In some cases such postposed stems themselves possess locative suffixes: pa-tiroa-vanduk, water-middle-to. No rigid separation of case-suffixes and adverbial postpositions can be made.

-ba, -m	locative
-van, -vaufi	inessive, superessive
-urur	superessive
-mandux, vanduk	terminalis
-ra	comitative
-im	instrumental
-ini	similative
-intce	ablative (?)
-ayan	against
-ivoe	out of
-guara	near, toward
-naria-van	between
-ag'aru-van	through
-vointa-van	into
-patog'a	inside (?)
tog'umbāb-i-ba,	in the sky

siramb-u-ba,	on the sand
nirab-im-ba,	in the snow
teirip-ura,	on the ground
qair-am,	on the mountain
ag'ump-um,	on the pine
nū-ran,	on me
pa-roñ,	in the water
kan-i-raufi,	in the house
otcedj-i-raufi,	in the water-basket
yurump-urur,	on the pine
qair-a-mandux,	to the mountain
pa-tiroa-randuk,	into the middle of the water
nū-ra,	with me
saridj-i-ra,	with a dog
wite-im,	with a knife
kzipanump-um,	with an ax
novintc-ini,	like a person
kriag'ant-ini,	like a bear
pa-intce,	away from the water
panakar-ayan,	against metal
kan-i-guara,	near the house
pa-goara,	toward the water
pinañ-guar-andux,	near the heart
apu-naria-ran,	between the horns
pa-pointa-ran,	into the water
nū-patog'a,	inside me (?)

The numerals, in counting, or when subjective, end in -ni. When objective they end in -ku. An unexplained form shows the suffix -ba-ni. When partitive or selective, they end in -ni-ke. The subjective and objective suffixes -ni and -ku are found also on manu, all.

1	cuis	cu-ku-c	cuis-ike
2	wai-ini	wai-ku	wai-bani
3	pai-ini	pai-ku	pai-bani
4	watciwi-eni		
5	manigin		manigi-bani
all	manu-ni	mano-ku	

nū cukuc putci^z punike, I one star see
nūñū waiku puñgu-an naruai, I two my-horses sold
 waiinike *nūñe* puñgu nag'ami, two-of-them of-my horses are sick

No numeral classifiers were found.

Adjectives of color end in -ar:

añag'-ar, red
oak-ar, yellow
tucag-ar, white
tok-ar, black
savag'-ar, blue, green

Verbal endings are numerous.

The common suffix of narrative tense is *pūg'a*. The use of this is illustrated in the text.

To *pūg'a* as a base are added several other suffixes:

-*pūg'a-c* has the meaning of too, also, again.

op'a-pūg'a-c, started again
oni-pūg'a-ic, did it also
qaian-pūg'a-c, gone too

-*pūg'a-con* seems to have a similar sense.

tiviñga-pūg'a-con, asked again

-*pūg'a-iñ* may be *pūg'a* with the objective pronominal element of the third person. In the text below it occurs several times, always on transitive verbs with object.

-*pūg'-ura* seems to be the same suffix with a particle *ura*, to be mentioned among connectives. It also occurs in the text.

-*vani* is an intensive or optative future

nū nandine-vani-em, I will track you
tig'ani-van(i), let him butcher it
punike-krai-vani, I am going to see it
nū-patog'a wiga-vani, inside of me you would rather enter
ūm-a nū-van karuvia-vani, you on-me do you want to ride?

The interrogative is -a, usually added to the first word in the sentence, as in the last example. In this it resembles the Luiseño pronominal enclitics, one or two forms of which also express an interrogation.

ūm-a kuk-vi-iñ, did you shoot him?
oa^c-a nūni acendi, does he like me?

hinto-a paiini timpuitc, those three rocks?

novinto-a, a man? are you a man?

-va-iñ is the imperative with object of third person. Compare -pūg'a-iñ.

punike-raiñ, see him!

pa'ka-raiñ, kill him!

kukzi-raiñ, shoot him!

-akant denotes the agent.

uni-ukant, he who did it

tavisar-akant, liar

-puag'ai expresses indefiniteness of the subject.

punike-puag'ai, someone saw him

kukzi-puag'ai, someone shot him

-kvaik means to tell, order, send, or go to do.

maiden-kvaik, did not tell to do that

parigi-ñ-kvaik, told him to wash it, went to wash

-karmak, cessation.

vaci-karmak-pūg'aiñ, they were done driving them

nag'uk-i-kiarmak-pūg'a, stopped fighting

-pag'a, continuation.

tiviñ-pag'a-pūg'a, he kept asking

-ke, of unknown meaning.

maik, maikek, find

pun-, punike, punikeke, see

tuzicaroi, tuzicaroi-ke, lie, tell untruth

gwtca-p, excrement; gwtca-k-pūg'a, defecated

-ini, of unknown meaning. There are several occurrences in the text.

-ag'a, when added to nouns makes verbs denoting nature, kind, condition, and, when combined with reduplication or plural, collectivity. It is probably the verb substantive ara or ag'a used as a suffix.

kan, tent

kan-i-ag'a, there are tents

kan-i-ag'a-i-pūg'a, there were tents

putciz, star

potci-ag'a, there are stars, it is starry
 pag'inav, cloud
 pag'ina-g'a, it is cloudy
 sizamp, sand
 sizamp-u-ag'a, it is sandy
 pō, road
 pu-ag'a, it goes on, there is a road
 makoets, magpie
 ma-makoets-i-ag'a, there are many magpies about
 ne-ara nozintc, I am a Ute
 in-ara, what is he?
 himb-ara, what is it?
 nozintc-ara, he is a Ute
 ara-rak nāni kan, where is my tent?
 ara-rām tcakaitciv-u-m, where are your younger brothers?

There are many other verbal suffixes, the meaning of which remains to be determined. Such are -rakam, -djuakan, -g'ai, -varanam, -up, -dis, -noapa, -tsañ, -tan, -ventik, -pūg'a-ik.

It is of special interest that the tense suffixes are not always final. It is true that they follow derivative suffixes, such as -karmak and -pag'a; but in turn pronominal, adverbial, and connective elements attach to the tense-suffixes, whether as true suffixes or as enclitic particles, remains to be ascertained.

There is no evidence of incorporation of the object-noun in the verb.

An important rôle is played in the language by what seem to be combinations of demonstratives and connectives. The nature of these is not clear, but may be surmised from the text. The frequent *oa*^h*cura*, plural *umucura*, usually translated "then," "he," or "then that," consists of the demonstrative *oa*^h*c*, that, he, the, and an element *ura* which must be regarded as adverbially connective or introductory, and which occurs again in *oric-ura*, *ov-ura*, *ovai-ura*, *ovantuzas-ura*, *ovantuv-ura*, the verb-ending *pūg'*-*ura*, and separately. *Ura-pūg'a* is also found. The demonstrative stem *ov* occurs in various forms: *ovantuvura*, *ovantuzas*, *ovantusug'*, *ovisauv*, *ovasura*, *oviuu*, *ovaiapūg'a*. The ending -*uv*, occurring also in *ivis-uv*, seems to mean "now then." Other forms related to *oa*^h*c* and *ov* are *oi*^h*a*-*pūg'a* and *oā*^h*dux*. *Azic-ura* means "that

is all." A form *-isar* occurs in *oa*c-isar ūmi sari-vuñk ag'a-vak*, where is your dog? and in the corresponding inanimate form *oric-isar*.

The following are the principal verbal stems determined. The majority contain more than one syllable.

ara, ag'a	be	acendi	like
gwtca	defecate	hari	lie
idjai	fall	iekzo	die
kari	sit	kzari	lie, extend
kzik	take	kzipa	hit, whip
kukzi	shoot	qo	kill, pl.
mai	say, think	maik	find
mai'ti	lose	mande	eat, taste
nag'ami	sick	nag'u	sell
nag'ug'i	fight	nanaku	grow
nasinti	appear	nifla	hear (<i>nūñlara-</i> , ear)
op'a	go, travel	o'rua	give
pa'ka	kill	parig'i	wash (pa, water)
parai	war	pikañ	pain
podjina	run	pūg'a	leave
pun-ike	see (poi-, eye)	puru	start
sapig'aka	reach	tapuni	awake
tazapi	sleep	tapi	walk, step arrive
tig'ani	cut up	tik-a	eat
tizig'a, tizifla	ask	tok	run
tupik	finish	turisa	true
tcikarina	cut	tcipo, tcipi	emerge
uni	do	zanai	throw
zaci	drive	ratci	put
zaun, zaufi	jump	zipag'ai	dance
wibi	fall off	wig'a	enter

The following is a text with approximate translation :

oa*c	yu'mbutc	o'p'a-pūg'a	kutc-u'm-me	nandi'n-pūg'a
That	porcupine	went;	buffalo (obj. pl.)	tracked.
oan-tur-u'ra	kutcu-umu'	gwtca'-k-pūg'a	oa*c-ura'	tizi'g'a-pūg'a
Then there	buffalo	had defecated.	Then he	asked
uru	kutcu'ñ-gwtca'pa	uru-cura'	nū-ag'a'	wi'tceufi
that (inan.)	buffalo-excrement.	Then it :	" I am	long ago
gwtca'p	oa*c-ura'	tizi'ñ-pag'a-pūg'a'	orai-ura	a'g'arūmp
excrement "	Then he	kept asking.	Then there	recent

ura'-pūg'a was.	o'vai-ura' Then there	o'p'a-pūg'a-c went again,	na'zampa-moru tracking them.	ozai-ura Then there
a'g'arūmp fresh	ura'-pūg'a were	narañk-mor their tracks.	umuc-ura' Then they	toḡoya' just
pa-i-tokvi'nde river	kzā'ndup across	tciv'o'-pūg'a emerged	manu'-ni all.	oa''c-ura' Then the
yumbutc-u'ñ porcupine-(he):	ag'ani-veni-en-ura' "What shall I do?"	mai'-pūg'a-ini thought.	oa''c-ura Then he	
kari'-pūg'a sat.	oa''c-ura' Then he	o'raiok there:	no''vin "Carry me over,"	mai'-pūg'a said.
u'muent One of them;	nū-a' "I?"	mai'-pūg'a said	kutc buffalo	u'muent one of.
nū-nū-a' "I?"	mai'-pūg'a he said.	katc "No"	mai-pūg'-u'ra said	o'c the
pa'-manoku-mura' All	ma'ru-puiñi-pūg'a' completed;	tupik-uka-mura' when finished,	a't-oarim good one	
nūnay-a' "Me?"	mai'-pūg'a said.	oa''c-ura' Then he:	o'rai "Yes"	mai'-pūg'a said.
mo''c-ura' Then	kutc-u'ñ buffalo-(he)	oa''vatcug emerged	tc'pi-pūg'a water-(from).	pa-g'aba ride-will?"
oa''c-ura' Then he	tiviñ'-pūg'a asked:	ñm-a' "You	ni-va'n me-on	karu'ñia-ran ride-will?"
katc "No,"	mai'-pūg'-ura said,	wi'bi-djuakan "I would fall off	pa'-rointuk water-into."	
a'pu-naria-zan "Horns-between	at-ov'o' better."	katc "No"	mai-pūg'a said.	oa''c-ura Then he:
pa'-vovi'nto-zan "Water-in	wi'be fall."	ma'nu-ni All (subj.)	ura' manu'k-tuacufi all (obj.)	
tupi'k-pūg'a finished.	oa''c-ura' Then he:	nū-patog'a' "Me-inside	wig'a'-vani enter-wish?"	oa''c-ura' Then he
yumbutc-u'ñ porcupine-(he)	o'v-ai "Yes"	mai-pūg'a said.	oa''c-ura Then he	oa''-pa
ig'a'-pūg'a entered.	ozai-ura Then there	oa''c that	pa-ron water-in	ig'a-pūg'a entered
kutc-u'ñ buffalo-(he).	oa''c-ura' Then he	yumbutc-u'ñ porcupine-(he):	maik "Say,	ag'a-randuk-aram where are you?"
pa-ti'roa-randuk "Water-middle-to."	pinañ-ura' After a time	tivi'ñia-pūg'a'-con asked again.	pa-guara "Water-near	
tcaram crossed."	tika'vi Then he	oa''c-ura Then he	tivi'ñia-pūg'a'-con asked again.	krañdu "Across
tcipi'-ñ emerged;	iri's-u now then	tc'pi'-u come out!"	katc "No,	mana'ñutci-randux farther."
oa''c-aru'-vai Then he there:	me "	tsaram crossed,	tika'vi now then	oi-u'v get off!"

oa ^a c-ura'	o'rai-uk	pi'nañ	uru'	kzaci'	kzipa'-pūg'a
Then he	there	heart		with tail	struck.
oa ^a c-ura'	podjina-pūg'a	kutc-u'ñ	ozantuzas	kzipa'-	
Then he	ran	buffalo-(he).	Then there	struck	
bi'tcira-pūg'a'	paka-ñu-pūg'a'-iñ	oa ^a c	yumbutc-u'ñ		
fell down,	killed-him	that	porcupine-(he).		
umuc-ura'	pō'auñ	a'ku	kzipu-gai-pūg'a-iñ	oa ^a c	
Then they	herd (?)	horns	tried to strike him.	That	
yumbutc-uñ	a'vacav	o'va	kari'-pūg'a	katc-i'o'ra'	
porcupine-(he)	rib	there	sat.	Not	
sapi'g aka-pūg'a	awi'c	kutc-um-uñ	mito'nikzia-pūg'a'		
could reach.	Finished	buffalo (pl.)	went off.		
oa ^a c-ura'	yumbutc-uñ	pi'nitux	tcipi'-pūg'a	oa ^a c-ura'	
Then the	porcupine-(he)	out	emerged.	Then he	
o'p'a-pūg'a	imb-um	samb	tig'a'ni-up	oa ^a c-ura	
went.	"What with	something	butcher!"	Then that	
yog'u'vitc	ora	tava'pvi-pūg'a	tapu'ni-pūg'a	ani'akak	
coyote	there	slept	awoke.	"What is it?"	
mai'-pūg'a-ini	ura'	nifia'-tcaika-pūg'a	ovai'a-pūg'a		
thought.		Heard	it was there:		
imbw-i'm	samb-uru'	tig'a'ni-ni-g up	mai'-pūg'a	ura'	
"What-with	something	butcher!"	he said		
nifia'-kaik-uñ	uru'	oa ^a c-ura'	oa ^a batcugañ-pūg'a'	yanak	
he heard.		Then he	went to him.	"Here	
ne	nā-witc	tig'a'ni-ni-zaranam	umu'c	o'p'a-pa'xkza-pūg'a-in	
	my knife	butcher with it."	They	went together.	
o'v-ura'	kutc-u'ñ	ha'zi-pūg'a	oa ^a c-ura'	ma'vax	ra'un-dis
Then there	buffalo-(he)	lay there.	Then he:	"Over	jumps
tig'ani-ran	mai'-pūg'-ura	oa ^a c	yog'u'vitc-uñ	uni'-pūg'a	
let him butcher,"	said	the	coyote-(he);	they did it	
oa ^a c-ura	yumbutc-uñ	to'k-pūg'a	azatav'anduraseñ		
Then that	porcupine-(he)	ran	rib over		
ra'uñ-pūg'a	oa ^a c-ura	yog'u'vitc-uñ	oni'-pūg'a-ic		
jumped.	Then the	coyote-(he)	did it also		
kvañk-padjuañk	ra'uñ-pūg'a	oa ^a c-ura'	kva'uñ-pūg'a'-iñ		
entirely over	jumped.	Then he	beat him in jumping		
tig'ani-pūg'a-iñ					
butchered it.					

The evident characteristics of the Ute language are a phonetic system that contains obscure sounds, but is simple in lacking elaborate combinations or permutations of sounds; preponderatingly disyllabic or polysyllabic roots; a fairly well developed system of suffixes, by which the business of the language is carried on; the

absence of prefixation and the slight development of polysynthetic processes, substantival affixes and noun-incorporation being wanting; the use of the pronoun either in its full form as the equivalent of the noun, or as an enclitic but usually unincorporated particle; a moderate development of reduplication to express number in both noun and verb; the use of demonstrative elements in combination with connective or introductory particles; suffixes to express the plural and objective, and a large series of locative and prepositional case-suffixes or postpositions; and apparently a fairly extensive equipment of the verb with derivative, modal, temporal, and adverbial suffixes. There is very little structural resemblance to Kootenay, to Washo, or probably to Kiowa, three small isolated linguistic families whose contiguity naturally leads to conjectures of the possibility of their relationship with Shoshonean and Uto-Aztekan.

AFFILIATED COLLEGES,
UNIVERSITY OF CALIFORNIA,
SAN FRANCISCO.

MARRIAGE AND DESCENT IN THE ARRANDA TRIBE, CENTRAL AUSTRALIA

By R. H. MATHEWS

As there is a difference of opinion among ethnologists respecting the line of descent in the Ar-ran'-da tribe at Alice Springs and the Finke river in Central Australia, I have endeavored to obtain correct details on this important point. The sources of my information are men who have resided in the country of the Arranda tribe for many years. These men have taken a vast amount of trouble and have spent much time in answering my inquiries, which have been repeated in various forms and at different periods during the last twelve years.

The territory of the Arranda (or Arunta of Spencer and Gillen), reaches from about Macumba river to Alice Springs and the upper Finke river. The people within the limits indicated are divided into four intermarrying sections, as follows :

TABLE A

<i>Cycle</i>	<i>Husband</i>	<i>Wife</i>	<i>Offspring</i>
A	Pananka	Purula	Paltara
	Kamara	Paltara	Purula
B	Purula	Pananka	Kamara
	Paltara	Kamara	Pananka

Taking an example from the above table, it is seen that Pananka marries a Purula woman, and has a son Paltara. In the next generation, Paltara marries a Kamara woman and has a son Pananka, the same section name as his father's father, who was also a Pananka. Looking again at Table A, we observe that Purula is the mother of Paltara, and in the next generation Paltara is the mother of Purula, and so on in continuous alternation, showing that a woman takes the section name of her mother's mother.

It appears then, that all the children, boys and girls alike, take the section name of their father's father as well as that of their mother's mother. For example, the father's father of Paltara and

his sisters was a Paltara like himself and his sisters. The mother's mother of Paltara and his sisters was also a Paltara like themselves.

Let us now make a table of the four sections of the Kamilaroi tribe in New South Wales, in which it is well known that descent is counted through the mother only.

TABLE B

<i>Cycle</i>	<i>Husband</i>	<i>Wife</i>	<i>Offspring</i>
A	{ Murri	Kumbo	Ippai
	{ Kubbi	Ippai	Kumbo
B	{ Kumbo	Murri	Kubbi
	{ Ippai	Kubbi	Murri

In this table we see that Murri marries a Kumbo wife and has a son Ippai. In the next generation Ippai marries a Kubbi woman who has a son Murri, the same section name as his father's father. We observe also that Kumbo is the mother of Ippai, and Ippai is the mother of Kumbo in perpetual alternation. That is, a woman takes the section name of her mother's mother. It is therefore plain that every child, irrespective of sex, takes the section name of its father's father and also of its mother's mother.

Up to this point there is no difference at all either in the laws of intermarriage or in the descent of the section names, in the Arranda and in the Kamilaroi.

When we get into the extreme northern limits of the Arranda territory, say northward from about the 24th parallel of latitude, we find that there are four additional divisions, making a total of eight intermarrying sections in the sociology of the people. Some remarks on these intrusive sections will be made farther on. In the meantime it will be necessary to reproduce a table I published in 1899.¹

TABLE C

<i>Cycle</i> ²	<i>Husband</i>	<i>Wife</i>	<i>Offspring</i>
A	{ Pananka	Purula	Bangata
	{ Knuraia	Ngala	Paltara
	{ Mbitjana	Bangata	Ngala
	{ Kamara	Paltara	Purula

¹ Divisions of North Australian Tribes, *Proc. Amer. Philos. Soc.*, vol. XXXVIII, p. 76.

² The cycle consists of the names given in the column headed "wife" in all these tables. Thus, Purula, Ngala, Bangata, and Paltara constitute Cycle A in Table C, and so on.

B	Purula	Pananka	Kamara
	Ngala	Knuraia	Mbitjana
	Paltara	Kamara	Knuraia
	Bangata	Mbitjana	Pananka

An explanation of the foregoing table was given in 1899 in the article above quoted and need not be repeated. Since then I have at different times obtained, from the most competent of my correspondents in that region, tables of genealogies which I have collated and present in the following table. This table, D, gives the particu-

TABLE D

No.	Individual Answering the Question		Section of Individual's Father	Section of Individual's Offspring
	Name	Section		
1	Arkara	Purula	Kamara	} Kamara
1a	Tjupuntara	Pananka	Paltara	
2	Tpitarinja	Kamara	Purula	} Purula
2a	Laramanaka	Paltara	Pananka	
3	Jukuta	Purula	Kamara	} Kamara
3a	Ruth	Pananka	Paltara	
4	Tjirtjalkuka	Purula	Kamara	} Kamara
4a	Relkua	Pananka	Paltara	
5	Nathaniel	Bangata	Pananka	} Pananka
5a	Maria	Mbitjana	Ngala	
6	Paulus	Mbitjana	Ngala	} Ngala
6a	Helena	Bangata	Pananka	
7	Moses	Knuraia	Paltara	} Paltara
7a	Sophia	Ngala	Mbitjana	
8	Petrus	Paltara	Knuraia	} Knuraia
8a	Rebecca	Kamara	Purula	
9	Johannes	Purula	Kamara	} Kamara
9a	Maria II	Knuraia	Paltara	
10	Jonathan	Paltara	Knuraia	} Knuraia
10a	Emilie	Mbitjana	Ngala	
11	Makana	Bangata	Pananka	} Pananka
11a	Nakara	Kamara	Purula	
12	Jakobus	Pananka	Bangata	} Bangata
12a	Lydia	Ngala	Mbitjana	

lars of twelve marriages, and will be readily understood from one example. No. 1 is a man named Arkara, of the section Purula. His father's section, Kamara, is given in the next column. No. 1a is the wife of No. 1, and is known as Tjupuntara, of the section Pananka. In the next column is her father's section, Paltara. The offspring of this married pair, both boys and girls, belong to the section Kamara, found in the extreme right-hand column.

In examining the above table we observe that in Nos. 1 to 8 inclusive, the marriages and the descent of the children are exactly in accord with the laws laid down in Table C. For example, No. 1, a Purula man marries a Pananka woman and the children are Kamara. These eight families are examples of what I have elsewhere denominated "direct," or "tabular," marriages. But in the Arranda, as in the Warramunga¹ and other tribes a little way to the northward, there are what I have called "alternative" marriages.

Next, if we examine Nos. 9 to 12 inclusive in Table C it is discovered that they are all instances of the "alternative" system. Taking No. 9 as an example, we see that Johannes, a Purula man, marries a Knuraia woman, instead of his regular or "tabular" wife Pananka. Moreover, according to Table C, the children of his marriage should be Mbitjana, but they are actually Kamara. A similar irregularity is noticed in the section name of the offspring in Nos. 10, 11, and 12, Table D. These irregularities will be explained later.

I shall now endeavor to explain how this variation in the descent of the section name of the progeny has occurred in the four families illustrated in Nos. 9 to 12. More than thirty years ago a mission station was formed on the Upper Finke river, a district in which the native inhabitants had only four sections in their social structure, the names of which are given in Table A. Soon after the mission station was established and the blacks learned that it was for their special benefit, they flocked to it from all parts, not because of the Gospel, but because of "the loaves and the fishes." They went there for tobacco, sugar and tea, flour, shirts, blankets, fat beef, tomahawks, and so on.

¹ *Journal Royal Society New South Wales* (1898), xxxii, 73, seq. I showed both "tabular" and "alternative" marriages among the Warramunga in a table given on p. 73. See also *American Antiquarian*, xxviii, 87-143.

At the time referred to, the eight-section system was in vogue among the most northerly portion of the Arranda tribe, but had not made any deep impression on the sociology of the natives about Ellery Creek, Idracowra, Owen Springs, Henbery, and other cattle stations, where the social structure remained the same as in Table A.

When the Reverend Louis Schulze went to the mission station about 1877, he had to deal with a heterogeneous population, some of whom professed the four-section system and others the eight-section system. He was a man who took pride in his work and studied the laws of marriage and descent. Owing to the two types of organization marrying one with the other in their new home, some modifications in the laws appear to have been made by the natives. In 1891, when Mr Schulze published the results of his labors, he prepared a table showing four pairs of sections, in which the four original sections and the four additional ones were not consolidated as in my Table C, but were placed in juxtaposition, as follows :

TABLE E, OR "SCHULZE'S TABLE"

	<i>Husband</i>	<i>Wife</i>	<i>Offspring</i>
1st Pair {	Pananka	Purula	Paltara
	Knuraia	Ngala	Bangata
2d Pair {	Kamara	Paltara	Purula
	Mbitjana	Bangata	Ngala
3d Pair {	Purula	Pananka	Kamara
	Ngala	Knuraia	Mbitjana
4th Pair {	Paltara	Kamara	Pananka
	Bangata	Mbitjana	Knuraia

Mr Schulze discovered that a man could marry a wife from either of a prescribed pair of sections. For example, a Paltara man could marry his "tabular" wife Kamara, or he could take a Mbitjana woman as the "alternative marriage."¹ In regard to the descent, Mr Schulze said: "Whether Paltara has a Kamara or a Mbitjana for his wife, the children are Pananka, according to paternal descent."² In 1898 I republished Mr Schulze's table, but contended that descent was through the mother, and not the father.³

¹ *Queensland Geographical Journal*, xvi, p. 74.

² *Trans. Roy. Soc. S. Australia*, xiv, p. 224.

³ *Jour. Roy. Soc. N. S. Wales*, xxxii, p. 72.

Let us examine Mr Schulze's statement that if Paltara take a Mbitjana wife, his children will be Pananka, instead of Knuraia. Mr Schulze was no doubt reporting a case or cases which he actually knew, and I desire to show how such a state of things could come about. Supposing that the Paltara man whom Mr Schulze had in mind belonged to that part of the Arranda tribe which had only the four sections given in Table A. By all the usages and traditions of his people his wife should be Kamara, and when he married Mbitjana she was probably said to be the equivalent of Kamara and her children were accordingly ranked as Pananka. I should suppose that she was received into the tribe on the same footing as a stranger; the same as any other stranger, from say the Chingalee, would be received; and was given the status of a Kamara, so that her children were Pananka.

When I caused further inquiries to be made by a friend in 1899 it was found that the important question of the intermarriage and descent of the eight sections had been settled or "consolidated," if the expression may be applied, so that the regular or tabular child of a Mbitjana woman was Pananka, whilst the tabular child of a Kamara woman was Knuraia (Table C), being exactly a transposition of the progeny of these two women in Mr Schulze's table. The offspring of the women of the Purula and Ngala sections were also similarly transposed. In all other respects Tables C and E are identical.

We will now be able to understand some further explanations regarding the descent of the children of the married pairs in Nos. 9 to 12 of Table D. We will select No. 12 in that table as an example. Jakobus, a Pananka man, marries Lydia who is a Ngala. By the consolidated law in Table C she is his "alternative" spouse and her progeny ought to be Paltara. The children, however, are actually classified in the Bangata section. The reason of this would appear to be that Lydia, being a Ngala, is treated as the equivalent or complement of Purula, and take the status of the Purula section; consequently her children, Table C, would rank as Bangata, being in accordance with the old laws of the southern branch of the Arranda, that the child shall take the section name of the father's father and also that of its mother's mother. This case is precisely the same

in principle as Mr Schulze's example, the only difference being in the names of the parties. If we had taken Nos. 9, 10, or 11 as our example, the result would have been the same.

It will be observed that throughout Table D I have given the section names of the fathers of each married pair, because some of those who follow Mr Schulze and maintain "paternal descent" lay great stress upon those instances in which the child is allotted the section name of its father's father. Let us again refer to Nos. 9 to 12, Table D, in each of which the child possesses the section name of its father's father. No. 9 will serve as an example of the four families. The child of Johannes is Kamara, the section name of the father of Johannes. But a little further study discloses that the child of Johannes also possesses the section name of its mother's mother. Maria II is Knuraia, and her mother, per Table C, is Kamara, the section allotted to the child. It is evident then, that in the four reported cases, Nos. 9, 10, 11, and 12, Table D, the child takes the section name of its mother's mother, as well as that of its father's father.

But Table D contains further evidence to the same effect. Nos. 1 to 4 inclusive represent the pedigree of one of the oldest families known to my correspondents. These four marriages go back to the time when there were only four sections (Table A) recognized in the district in which the mission station is now situated. There was an old chief named Jukara, of the Kamara section. He married Mokurkna, a Paltara woman, and his eldest son was Arkara, who, with his wife, was given as Nos. 1 and 1a in Table D. Arkara was the father of Tpitarija, No. 2 in Table D. Tpitarija was the father of Jukuta, shown as No. 3 in that table. The old chief Jukara had a second son, Tjirtjalkuka, given as No. 4 in Table D. To recapitulate, Jukara was the father of Arkara, who was the father of Tpitarija, who was the father of Jukuta, being the pedigree of four generations in the direct male line.

Returning again to the question of descent, and taking No. 3 of Table D as an example, we learn that Jukuta, a Purula man, whose father was Kamara, married Ruth, a Pananka, and the child is Kamara, the same as its father's father. But by inspecting Table A, which was the only system in force in those days, we find that

Ruth's mother was Kamara. Therefore her child takes the section name of its mother's mother. Precisely the same result would be obtained by examining Nos. 1, 2, and 4.

From what has been said respecting the variations in the rules of descent, it would appear that lineage is reckoned by two methods. In one system there is a tendency to continue portions of the regulations of the southern branch of the Arranda organization, exhibited in Table A. This is observed in Nos. 9 to 12, where the section name of the mother's mother is inherited by the child. We know that descent in this form has been in vogue for a long time. Jakobus, No. 12 of Table D, is descended from old Jukara already mentioned. Tjirtjalkuka, No. 4, had a daughter Nakara, No. 11*a*, who is the mother of Jakobus, a man who is now about 35 years of age. He married Lydia, a Ngala, and the child takes the section name of the mother's mother and the father's father.

In Nos. 5 to 8 inclusive, Table D, we find the descent is in accordance with what I have called the "consolidated" system. By this method all the women of the tribe can be classified into two cycles, A and B, which have perpetual succession. Taking the women in the upper half of Table C, or Cycle A, we find that Purula is the mother of Bangata; Bangata of Ngala; Ngala of Paltara, and Paltara is the mother of Purula, and this order of succession is continually repeated. The women of the lower half of the table have a similar succession. This arrangement brings the sociology of the northern branch of the Arranda into line with the Wombaia,¹ Binbingha,² Chingalee³ and other communities among whom I have elsewhere reported that descent is invariably counted through the women.

When Rev. L. Schulze made his report, already quoted, that Paltara's child must be Pananka irrespective of the mother's section, he does not give a reason why it is an evidence of "paternal descent." If it was because the child was assigned the section name of Paltara's father, Table E, then there is no weight at all in the argument, because the very same thing happens in the Kamilaroi, where the

¹ *Proc. Amer. Philos. Soc.*, XXXVII (1898), p. 152.

² *Ibid.*, XXXVIII (1899), p. 77.

³ *American Anthropologist*, N. S., II (1900), p. 495, with map.

descent is unmistakably through the mother only. In fact, in every tribe I know possessing female descent, all over Australia, the child takes the name of the father's father. This holds good no matter whether the tribe be divided into two, or four, or eight parts. I am of course referring to the normal or "tabular" marriages.

But when we come to the women, matters are somewhat different. Taking the Yanderawantha tribe, with maternal descent, whose two cycles I reported in 1899,¹ we find that a child takes the name of its father's father, and also that of its mother, because the cycle contains but one denomination and is reproduced in the first generation. When dealing with Table B in an earlier page, in which the cycle is bisected, it was shown that the progeny took the name of the father's father and of the mother's mother. There being two divisions of women in a cycle, they reproduce each other in the second generation, instead of in the first, in continuous alternation.

I will now take the northern Arranda tribe, Table C, in which each cycle of women contains four sections, which reproduce each other in an established order. Here again the child takes the sectional name of its father's father. But as there are four divisions of women in a cycle, instead of two as in the Kamilaroi, they reproduce each other in the fourth generation instead of in the second generation. A child must therefore take the section name of its mother's mother's mother's mother. For example, taking Bangata, the first name in the "offspring" column of Table C, its mother is Purula, whose mother is Paltara, whose mother is Ngala, whose mother is Bangata, the same as the child.

The above examples show that whether there are two, or four, or eight partitions of the tribe, the resulting offspring gets the sectional name through the women. The child in each of the examples also gets the section name of its father's father, but this is a necessary result of the normal or "tabular" marriages. When we examine the "alternative" marriages, the father's father's succession disappears, but the descent through the women remains unaltered.

¹ *Jour. Roy. Soc. N. S. Wales*, xxxiii, p. 108; *Proc. Amer. Philos. Soc.*, xxxix, p. 83, with comprehensive map. Dr A. W. Howitt mentioned these two divisions in 1904, without giving me the credit of discovering them five years earlier. He also made free use of my map, without acknowledgment.

Going back to Table B, if Murri marries Ippai instead of Kumbo, the child is Kumbo, but its father's father is Ippai. Then if we look again at Table C we find that if Pananka marries Purula the child is Bangata, the same as its father's father. But if Pananka marries Ngala, his "alternative" or No. 2 wife, the child is Paltara, although its father's father is Bangata.

I am not finding fault with Mr Schulze's tabulation, Table E; on the contrary, I republished it and became responsible for it in 1898; but I differ now, as I did then, from his conclusions in regard to the descent of the children. When the small detachment of people possessing eight sections came to settle at the mission station years ago, they would no doubt bring with them the rules regulating marriage shown in Table C; but the other people with four sections were by far the most numerous, and the two systems never became properly amalgamated. Some families would conform to the eight-section system; whilst others, although incorporating the northern section names, would treat them as equivalents of their own, and still count descent in the way in which they had been accustomed. This would account for Mr Schulze's table, which actually represents the families Nos. 9 to 12 in Table D at the present time. On the other hand, Nos. 5 to 8 indicate the intermarriages of such of the people who conformed to the amalgamated laws of Table C. Nos. 1 to 4, although falling into line with Table C, contain only the original four section names.

It will be well to give my reasons for saying that the four-section organization prevailed in the district around the mission station. Mr W. H. Willshire,¹ a police trooper, went to Alice Springs in 1881 and his duties took him all over the Finke river. Although he reports the four-section system, no mention is made of eight sections. Mr H. E. W. Krichauff² in 1886 also speaks of the intermarriages of four sections only. When the Horn Scientific Expedition visited the mission station, amongst other places, in 1894, Dr E. C. Stirling, the anthropologist of the party, reported that there were only four sections.³ He said he had questioned several blacks who, although

¹ *Aborigines of Central Australia*, p. 13.

² *Proc. Roy. Geog. Soc. South. Australia*, II, p. 33.

³ *Report Horn Sci. Exped.*, IV, p. 47.

quite familiar with Pananka, Kamara, Purula, and Paltara, had never heard of the other four names reported by Mr Schulze. To quote the conclusion of Dr Stirling's remarks in his own words: "From no single individual, whether white or black, could I get a confirmation of Mr Schulze's scheme." At that time the eight-section contingent must have been out on a cattle-spearing expedition, or else away on a visit to their northern congeners, but we may infer that they could not have been numerous.

I have read the statements of Spencer and Gillen that descent among the Arranda (Arunta) is counted through the father, but I am of the opinion that they are mistaken. From what has been said in the foregoing pages there is no doubt in my mind that descent is counted through the mother. It is quite a common thing for white men to conclude that descent among the aborigines is reckoned through the men. This comes about by the fact that a wife is taken into the tribe and hunting grounds of her husband, where all her children are born and bred and inherit their father's territory.

A few words will now be said about the descent of the totems. When a woman first becomes conscious of the approach of the maternal function, she reports that she had a dream somewhat to this effect: One night when she and her husband were camped near a certain spring or waterhole, she heard the voices of infants laughing among the leaves of a tree growing near. Her husband may also say that he heard the infant coming down out of the tree just before daylight, when it came and pulled his hair, after which it vanished and was believed to have entered the woman's body through the navel or any other part. When the child is born, it is assigned the totem of the locality where the mother or father had the dream. For example, if the spot be traditionally known to be haunted by Magpie people, invisible to human ken, the new-born child would get the totem of the magpie, quite irrespectively of the totem of either parent.

The component parts of a tribe having the totemic organization described in the preceding paragraph are in many respects similar to the Kamilaroi. For example, there is a local division in which are found the totem names of animals, plants, the heavenly bodies, etc. People whose totems may belong to any or all of these departments of the universe roam about together, or at any rate fra-

ternize when they foregather in any part of their common territory. There are certain spots in this territory which are specifically haunted, some by one object and some by another, from which the children receive their totemic names, instead of from the mother.¹ It appears then, that like the Kamilaroi, the totems are scattered throughout the tribal territory, but are allotted to the offspring according to locality of birth instead of parentage.

In other publications in America, Europe, and Australia I have reported several tribes inhabiting the northern parts of Australia in whose sociology there are eight divisions similar to those in Table C, and have maintained that the devolution of the section names is through the women. In this journal² I published a map of the whole of that portion of Australia inhabited by the eight-section type. In the *Proceedings of the American Philosophical Society*,³ I published a map of Australia showing the regions inhabited by each type of social structure. The boundaries of many of the organizations were established from my own personal knowledge, whilst the remainder were determined from information obtained from reliable correspondents. In the text explaining the map (pp. 574-578) I gave the names of the subdivisions prevailing in about twenty-five groups of tribes.⁴

Before closing this article I should like to refer briefly to other tribes occupying the country between the Arranda and the Gulf of Carpentaria. In 1899 I described the sociology of the Binbingha tribe on the Macarthur river,⁵ in Northern Australia. In the table of eight intermarrying sections published at that time I reported "that each group (cycle) has perpetual succession through its females." The following is a copy of that table, which was constructed on exactly the same principles as Table C of the present treatise ;

¹ *American Antiquarian*, XXVIII, 143-147.

² N. S., II, p. 497.

³ XXXIX, 1900.

⁴ I may here state that Mr N. W. Thomas in his recent work, *Kinship Organizations and Group Marriage* (London, 1906), has copied very extensively from the above mentioned map of Australia, without the slightest acknowledgment. He has given me credit for being the first to report a large number of section and phratry names, but it is a pity he did not acknowledge his obligations to my map. If the reader will compare Mr Thomas' maps II and III with my own, the extent to which he has drawn on the latter will be abundantly apparent.

⁵ *Proc. Amer. Philos. Soc.*, XXXVIII, p. 77, table iii.

		TABLE F	
<i>Cycle</i>	<i>Husband</i>	<i>Wife</i>	<i>Offspring</i>
A	Joolanjagoo	Jungalagoo	Bullaranjee
	Jinagoo	Jooralagoo	Bungaranjee
	Jameragoo	Bullaranjee	Jooralagoo
	Yukamurra	Bungaranjee	Jungalagoo
B	Jungalagoo	Joolanjagoo	Yukamurra
	Jooralagoo	Jinagoo	Jameragoo
	Bungaranjee	Yukamurra	Jinagoo
	Bullaranjee	Jameragoo	Joolanjagoo

There is a feminine form of the name of every one of these eight sections, but they are not given in the table, because it is thought that their omission will enable the reader more readily to follow the details of the rules of marriage and descent, by having eight sections to deal with instead of sixteen.¹ Besides, by omitting the feminine names a direct comparison can be made with Table C, if necessary.

In the present Table F, the cycle is represented by the names given in the "wife" column. Taking the first woman in cycle A, we see that Jungalagoo produces Bullaranjee, who produces Jooralagoo, who produces Bungaranjee, whose offspring is Jungalagoo, being the name we commenced with. This series recurs in the same order indefinitely.

Joolanjagoo marries Jungalagoo as his "tabular" or No. 1 wife and the progeny is Bullaranjee. If he weds Jooralagoo as his "alternative" or No. 2 wife, his family is Bungaranjee. Should he take a Jinagoo as his No. 3 spouse, his offspring will be Jameragoo. And if Joolanjagoo mates with a woman of his own section name as his No. 4 wife, his children will be Yukamurra. From this we observe that the children of a given man, say a Joolanjagoo, may have any one of four section names, this matter depending altogether upon the woman who is his wife. In other words, succession of the sections cannot possibly be counted through the father.

Although a woman may likewise have a conjugal mate from any one of four sections, this matter makes no difference at all to her progeny. For example, a Jungalagoo woman might be married to

¹The feminine forms of the sectional divisions of the Binbingha are given in the *Queensland Geographical Journal*, XX, p. 71, table viii.

a Joolanjagoo, or a Jinagoo, or a Jooralagoo, or a Jungalagoo, but her children would be Bullaranjee just the same as in Table F, because the succession of the sections through the woman is absolutely invariable.

In 1900 I contributed a paper to the Anthropological Society of Washington, reporting the eight sections of the Chingalee tribe in Central Australia,¹ accompanied with a table showing the section to which a man belongs, the section into which he can marry, and the designation of the children. I also stated that the sectional name of the offspring is determined through the mother, and likewise that they belong to the mother's phratry or cycle. In a further contribution to the same society² I supplied a table showing the English names of eight married pairs in the Chingalee tribe, some of whom were of the "tabular" or No. 1 type; others were "alternative" or No. 2; whilst others were No. 3 and No. 4. All these were actual marriages of individuals personally known to my correspondents residing in the district. This tabulated list is of great value, because it proves beyond question that men of one section can marry into four different sections of women. And not only so, but it shows that two of a man's possible wives and consequently two of his possible families belong to one cycle, and two to the other cycle. The last mentioned fact points to the non-existence of exogamy, a subject which would require a special article.

My object in presenting the present treatise is to place before the ethnologists of America my views respecting the line of descent in all the tribes dealt with. My facts cannot be contradicted, and I shall be glad to learn whether my conclusions are equally unassailable. There are at present two opinions regarding descent in these tribes. Spencer and Gillen assert that it is through the men, whilst I maintain that it is counted through the women. Referring to differences of conclusions in difficult matters of this kind, I may mention that Dr A. W. Howitt, in his *Native Tribes of South-east Australia*, reported that descent in the Turrubul and Kaiabara tribes in Queensland is in the male line, whereas I have incontestably proved that descent in these tribes is maternal.

¹ *American Anthropologist*, N. S., II, pp. 494-501, with map.

² *Ibid.*, VII, pp. 301-304.

CORRECTION

In vol. 11 of this journal, for 1900, p. 499, I reported a variety of totems appertaining to some tribes on Sturt creek and adjacent country, situated partly in the Northern Territory and partly in Western Australia. The information was gathered for me by Mr Stretch, Mr Wilson, and other residents of that region. Upon continuing my inquiries through these men, and gathering further details, I find that the totems are not definitely attached to the pairs of sections mentioned in my paper, nor yet to the quartettes of sections, but are dispersed throughout the tribal territory. The totem of any particular person is determined by the locality where his mother first became aware that she was enciente. In other words, the totems are not divided between the two phratries, nor allotted to any specific section, but depend upon the accident of conception. There is still much to be learned in regard to this subject, and I am continuing my investigations under difficulties.

PARRAMATTA,

NEW SOUTH WALES.

ANTHROPOLOGY AT THE CHICAGO MEETING
WITH PROCEEDINGS OF THE AMERICAN ANTHROPOLOGICAL ASSOCIATION FOR 1907

BY GEORGE GRANT MACCURDY

The joint meeting of Section H of the American Association for the Advancement of Science, the American Anthropological Association, and the American Folk-Lore Society was held at the University of Chicago, December 30, 1907, to January 2, 1908.

MEETING OF THE SECTIONAL COMMITTEE

Professor Boas, vice-president of Section H, presided over the Sectional Committee meeting, other members present being Miss Alice C. Fletcher and Dr George Grant MacCurdy, acting secretary. Officers for the Chicago meeting were nominated as follows: Member of the General Committee: Prof. Frederick Starr. Member of the Council: Miss Fletcher. Sectional offices were filled by the nomination of Prof. R. S. Woodworth, Columbia University, New York, as vice-president for the ensuing year, and of Prof. Roland B. Dixon as member of the Sectional Committee to serve five years. These nominations were later approved by the Association in general committee.

COUNCIL MEETINGS OF THE AMERICAN ANTHROPOLOGICAL ASSOCIATION

Professor Boas as president of the Association likewise presided over the deliberations of the Council. Members of the Council present in addition to the President were Miss Fletcher, Charles Peabody, G. A. Dorsey, E. L. Hewett, R. B. Dixon, B. T. B. Hyde, and G. G. MacCurdy.

The secretary, Dr George Grant MacCurdy, reported that there had been no special meeting of the Association since the beginning of the year, but a meeting of the Council was held in Yale University Museum, October 11, in the interest of the program for the Chicago meeting. Those present were: Professor Boas, chairman;

Professor Saville, Dr Peabody, and Dr MacCurdy, secretary. There was also a meeting of the Committee on Program in New York on November 18.

The responsibility for the Chicago joint meeting having been left in Dr MacCurdy's hands by the secretaries of Section H and of the American Folk-Lore Society, a call for the meeting was mailed in October to the more than seven hundred members of the three societies. In response to this call thirty-nine titles were received. A preliminary program was prepared and mailed to members December 14. In addition all abstracts that reached the Secretary in time to be submitted for approval were printed (fifteen in number) and were distributed on the opening day of the meeting.

There have died during the year: Col. Paul Edmond Beckwith, U. S. National Museum; William Wells Newell, for many years secretary of the American Folk-Lore Society; P. S. Sparkman, Valley Center, California; Dr Daniel Garcia, Guadalajara, Mexico.

Membership in the Association is now open to libraries and societies, and many have taken advantage of this privilege during the last year owing in large measure to their interest in receiving the *Memoirs*. Efficiency as a medium of publication is the lodestone that attracts members. In this connection the Secretary emphasized the importance of a concerted effort to increase the membership of the Association in order that the present high standard of both journal and *Memoirs* might be maintained. His report included the names of the new members¹ elected the following day: Miss L. P. Smith, J. C. Brush, Library of Brown University, Watkinson Library, Newberry Library, University of Illinois Library, Somerville Public Library, J. H. Terry, Peabody Museum of Harvard University, J. T. Bowne, Geological Survey of Canada, Dr A. Peñafiel, American Geographical Society, American Philosophical Society, Bernice Pauahi Bishop Museum of Polynesian Ethnology and Natural History, J. C. Herrick, City Library Association of Springfield, Mass., Public Library of Cincinnati, The John Crerar Library, New Hampshire Historical Society, St Louis Mercantile Library Association, Library of the University of Toronto, Public Museum of the City of Milwaukee, P. G. Gates (life member), A. B. Lewis, Rev.

¹ Full addresses are given in the list of members to be found in this issue.

B. Meyer, L. Welles, W. E. Roth, Dr T. M. Owen, P. A. Brannon, R. F. Gilder, Leland Stanford Junior University Library, E. K. Putnam, G. B. Noyes Jr, Carnegie Library of Pittsburg, S. G. Morley, R. G. Fuller, E. P. Valentine, J. P. Camp, Indiana State Library, W. Jochelson, A. W. Fairbanks, R. H. Lowie, Adelbert College, Howard Memorial Library, H. J. Spinden, Prof. B. Cummings, Prof. Mitchell Carroll, Prof. W. I. Thomas.

The following letter¹ urging the establishment of a Department of Anthropology for the purpose of investigating the problems of anthropology in South America has been signed by practically all students of anthropology in the United States:

April 3, 1907.

TO DR R. S. WOODWARD,

President of the Carnegie Institution of Washington.

SIR: The undersigned were appointed by the American Anthropological Association, the Archæological Institute of America, the American Folk-Lore Society, the Anthropological Society of Washington, the American Ethnological Society of New York, and Section H of the American Association for the Advancement of Science—the six societies of the United States entirely or mainly anthropological in scope—to discuss the subject of the most important researches that should be undertaken for the furtherance of anthropological science, and to outline a plan of research of such importance as to be worthy of the consideration of the trustees of the Carnegie Institution of Washington.

The committee believes that the isolation of the continent of South America from the great land masses of the old world in recent geological times makes the study of man's appearance on the continent and the development there of the numerous tribes, languages, and cultures in early times, a problem the solution of which would be of supreme importance to anthropological science.

In such a research the study of the racial and cultural development of the peoples of this continent and particularly of the contact of this remote area with other parts of the world would be of fundamental importance.

Since it is not likely that any government will take up such an international investigation, and as it is impossible for any of the existing societies and institutions devoted to anthropological research to engage in so extensive an undertaking, the committee respectfully submits the following resolutions to the Carnegie Institution of Washington:

¹ *Science*, May 10, 1907.

Resolved, That the trustees of the Carnegie Institution of Washington be respectfully requested to establish an anthropological department for the purpose of investigating the problem of the anthropology of South America, with special reference to the lines of contact between the early inhabitants of that continent and other continental areas.

Resolved, That should such a department be established its work should be based on the following four lines of investigation:

1. The antiquity of man in South America with special reference to the discoveries made in the Pampean formations. This work should be in charge of a competent geologist who should make a critical study of the strata in which the human remains have been found for which great antiquity is claimed. Associated with the geologists should be a trained archeologist who should make archeological investigations in the region of the alleged discoveries.

2. While historically no relation has been traced between the cultures of the more advanced tribes of the Andean Highlands and those of Central America, there is a general resemblance in fundamental types which seems to indicate that either a very early connection between North America and South America existed or that the later cultures grew up on the basis of an older type common to both continents. This investigation would require painstaking archeological researches extending from Mexico southward into the most southern regions to which the influence of Andean culture extended. The investigation of the ethical relation between South America and North America would require particularly an exhaustive study of the early remains extending from Colombia northward through Central America, toward southern Mexico, to be correlated with the investigations now being carried on in Middle America.

3. Another line of connection between South America and North America probably extended over the Antillean islands toward the Atlantic coast of the North American continent. The investigations of explorers have demonstrated that Caribbean and Arawak influences extended from southern Brazil northward to the eastern coast of the Gulf of Mexico; and North American archeology makes us suspect the existence of an earlier connection, which may have extended between South America and the southern and central portions of the United States. In this research is involved an investigation of the many scattered and isolated tribes inhabiting the Amazon valley and neighboring regions.

4. While the indications of North and South American contact are fairly definite on some lines, we have much vaguer indications of foreign influence on the Pacific coast of South America, where certain traits of

culture, as well as physical appearance, suggest possible contact with the Polynesian islands. Notwithstanding the vagueness of the indications, this question is theoretically of fundamental importance. Equally uncertain are the indications of relation with the Old World on the Atlantic side, but the possibility of contact by way of the Atlantic islands to northwest Africa may be considered.

Resolved, That to take up the four lines of research here outlined, an annual appropriation of not less than twenty thousand dollars would be required; and the extension of the work, which would necessarily follow, would make it advisable that an anthropological department, charged with the investigation of the particular problem of the ethnical relation of South America to other continents, should have a continuous appropriation of not less than forty thousand dollars, and that its work should not be limited to a definite number of years, because even now, in the imperfect state of our knowledge, we can see that the solution of the problem will require many distinct and important lines of research. The work should therefore be continued as long as results of importance are secured in the various lines of research.

Respectfully submitted,

(Signed) F. W. PUTNAM, Chairman, *for the Archaeological Institute of America.*

ROLAND B. DIXON, *for the American Folk-Lore Society.*

W. H. HOLMES, *for the Anthropological Society of Washington.*

A. L. KROEGER, *for the American Anthropological Association.*

FRANZ BOAS, Secretary, *for the American Ethnological Society, and for Section H of the American Association for the Advancement of Science.*

REPORT OF THE EDITOR¹

It is gratifying to be able to report that, inasmuch as the chief activity of the Association lies in the diffusion of knowledge by means of its publications, the year now closing has been the most successful one in its history.

The usual quarterly numbers of the *American Anthropologist* have been issued, containing thirty nine (39) articles, the reviews of Periodical Anthropological Literature by Dr Alexander F. Chamberlain, about

¹ Read by the Secretary in the absence of Mr Hodge.

thirty Book Reviews, and the usual Anthropological Miscellanea. So great has grown the demand for space and the need for prompt publication that it became necessary to increase the normal size of the first three numbers of the year by 110 pages. The illustrations have been increased in number, and also, it is believed, in quality. Beginning with the volume just closed a better grade of paper was adopted for the *American Anthropologist*, permitting the insertion of small half-tone illustrations in the text when necessary, and giving assurance of greater permanency of the Association's published material.

Notwithstanding the increased demand by students for space in the *American Anthropologist*, the Association has done more during the year in the publication of its series of *Memoirs* than in the previous two years of their publication. Parts 3 to 6 of Volume I (completing a volume of 500 pages), and Parts 1 and 2 of Volume II (comprising 164 pages) have been issued during the year. Other material, highly recommended for publication, is awaiting the necessary funds.

It may be remarked that one of the results of the publication of the *Memoirs* has been the application of a number of the leading libraries and other institutions throughout the country for membership in the Association. With further increase in the membership, a matter resting largely with our individual members, the activities of the Association will be correspondingly augmented.

Respectfully submitted,

F. W. HODGE, *Editor*.

REPORT OF THE TREASURER

The Treasurer's report, which was received and referred to an Auditing Committee appointed by President Boas, consisting of M. H. Saville, H. I. Smith, and G. H. Pepper, is as follows:

Receipts

Balance from 1906.....		\$1,079.80
From Anthropological Society of Washington for <i>American Anthropologist</i>		
Vol. VIII, nos. 3 and 4.....	\$164.63	
Vol. IX, no. 1.....	81.91	
Vol. IX, no. 2.....	83.55	
Vol. IX, no. 3.....	90.02	
Extra copies.....	3.25	
Reprints.....	4.93	428.29

From American Ethnological Society for *American Anthropologist*

Vol. VIII, nos. 3 and 4.....	\$137.38	
Vol. IX, no. 1.....	61.72	
Vol. IX, no. 2.....	61.71	
Vol. IX, no. 3.....	61.71	322.52
Annual dues.....		1,172.56
Annual Subscriptions to <i>American Anthropologist</i>		751.40
Sale of back numbers and extra copies of <i>American Anthropologist</i>		175.04
Sale of <i>Memoirs</i>		69.38
Publication Fund: Annual Subscriptions.....		125.00
Authors reprints (at cost).....		102.67
Advertising in <i>American Anthropologist</i>		6.00

\$4,232.66

*Expenditures*For printing, binding, and mailing *American Anthropologist*:

Vol. VIII, no. 4.....	\$307.32	
Vol. IX, no. 1.....	472.16	
Vol. IX, no. 2.....	423.32	
Vol. IX, no. 3.....	408.54	\$1,854.71
Printing Prospectus.....		22.97
Reprints.....		407.90
<i>Memoirs</i> :		
Vol. I, no. 2.....	\$128.34	
Vol. I, no. 3.....	60.60	
Vol. I, no. 4.....	128.26	
Vol. I, no. 5.....	148.82	466.02
Insurance on back numbers of <i>American Anthropologist</i>		25.00
Illustrations for <i>American Anthropologist</i>		297.67
Illustrations for <i>Memoirs</i>		87.50
Editorial expenses.....		148.50
Printing Report of Committee on Linguistic Stock Nomenclature.....		21.50
Printing Report of Committee on Archeological Nomenclature.....		117.25
Treasurer's expenses.....		116.65
Secretary's expenses.....		86.61
Subscriptions returned.....		12.00
Expenses in connection with "Periodical Literature".....		10.00
Adjustment of dues of member of Ethnological Society.....		10.00
Adjustment of dues of member of Anthropological Society of Washington.....		5.00

Part of expense of Joint Committee for Memorializing Carnegie Institution.....	6.00	3,745.28
Balance.....		\$487.38

Bills in Hand Still Unpaid

New Era Printing Co.....	479.56
Tuttle, Morehouse & Taylor Co.....	36.58
Dr George Grant MacCurdy, Secretary ..	14.54
Total outstanding indebtedness.....	530.68
Balance in bank.....	487.38
Deficit.....	\$ 43.30

With the above it must be taken into consideration that bills for Vol. IX, no. 4, of the *American Anthropologist*, and Vol. 2, no. 2, of the *Memoirs* have not yet been presented.

Respectfully submitted,

B. TALBOT B. HYDE, *Treasurer*.

The only other report presented to the Council was that of the Committee on Publication, by its chairman, President Boas.

It was moved and carried that a committee of three be appointed to investigate the subject of possible future state legislation, particularly in so far as it may affect the recent national enactment. The report of this committee, consisting of Messrs Dorsey, Hewett, and Peabody, was made a part of Mr Hewett's report for the Committee on the Preservation of American Antiquities read in the general session on the following day. The report of the committee of three was accepted, and further investigation of the subject of state legislation was referred to the standing Committee on the Preservation of American Antiquities, with full power to act.

It was voted to send the *Memoirs* for 1908 to all members of the Association. Mr E. L. Hewett was appointed to take the place of Professor W. H. Holmes, absent, as a member of the Council of the American Association for the Advancement of Science.

The chair appointed as Committee on Nominations: Messrs Dixon, Starr, Peabody, and Hewett. The report of this committee was accepted on the following day, officers being elected as follows:

President: Prof. Franz Boas, New York.

Vice-president, 1911: Miss Alice C. Fletcher, Washington.

Vice-president, 1910: Dr George A. Dorsey, Chicago.

Vice-president, 1909: Mr Clarence B. Moore, Philadelphia.

Vice-president, 1908: Prof. W. H. Holmes, Washington.

Secretary: Dr George Grant MacCurdy, New Haven.

Treasurer: Mr B. Talbot B. Hyde, New York.

Editor: Mr F. W. Hodge, Washington.

Council: W J McGee, F. W. Putnam, F. Boas, G. A. Dorsey, Alice C. Fletcher, W. H. Holmes, C. B. Moore, G. G. MacCurdy, B. T. B. Hyde, F. W. Hodge (*ex-officio*); E. L. Hewett, J. N. B. Hewitt, W. Hough, A. Hrdlicka, A. L. Kroeber, O. T. Mason (1911); C. P. Bowditch, A. F. Chamberlain, S. Culin, R. B. Dixon, J. W. Fewkes, G. B. Gordon (1910); F. Baker, L. Farrand, B. Laufer, J. D. McGuire, J. Mooney, C. Peabody (1909); G. H. Pepper, M. H. Saville, H. I. Smith, F. Starr, J. R. Swanton G. G. Heye (1908).

To represent the Association in the Council of the American Association for the Advancement of Science: Franz Boas and E. L. Hewett.

The incoming president, Professor Boas, has appointed committees as follows:

Committee on Program: G. G. MacCurdy (chairman), F. Boas, F. W. Hodge, A. L. Kroeber.

Committee on Finance: B. Talbot B. Hyde, Stanley McCormick, G. G. MacCurdy, W. H. Furness, 3d.

Committee on Publication: The names of the members of this committee appear on the third page of the cover of this number of the *Anthropologist*.

Committee on Policy: F. Boas (chairman), W J McGee, F. W. Putnam, C. P. Bowditch, G. A. Dorsey, F. W. Hodge, A. L. Kroeber, C. Peabody.

Committee on American Archeological Nomenclature: C. Peabody (chairman), J. H. Wright, W. K. Moorehead, F. W. Hodge, J. D. McGuire.

Committee on Book Reviews: F. W. Hodge (chairman), A. F. Chamberlain, R. B. Dixon, G. B. Gordon, C. Wissler.

Committee on the Concordance of American Mythologies: F. Boas (chairman), J. R. Swanton, A. L. Kroeber.

Committee on Nomenclature of Indian Linguistic Families North of Mexico: F. W. Hodge (chairman), W. H. Holmes, F. Boas, A. L. Kroeber, R. B. Dixon, G. A. Dorsey, J. Mooney.

Committee on the Preservation of American Antiquities: W. H. Holmes (chairman), E. L. Hewett (secretary), G. A. Dorsey, Alice C. Fletcher, G. G. MacCurdy, G. B. Gordon, A. L. Kroeber, M. H. Saville, F. W. Putnam, S. Culin, C. V. Hartman.

Among the social functions arranged for the benefit of the anthropologists was a reception on the evening of January first by Dr. and Mrs. George A. Dorsey at their home, 5609 Monroe avenue.

ADDRESSES AND PAPERS

Professor Boas' address as president of the American Anthropological Association was on "Anthropology as a Subject of University and College Instruction."

The address of the retiring vice-president for Section H, Dr. A. L. Kroeber, which was read by title in the absence of the author, was printed in *Science* of February 21st.

The president of the American Folk-Lore Society, Prof. Roland B. Dixon, chose for his subject "Some Aspects of the American Shaman." The shaman was considered in the making, in regard to functions and activities as healer, sorcerer, seer, priest, and educator, in relation to the degree of organization, and as regards his position in and influence on the community. The geographical distribution of several features connected with the shaman was briefly considered, and some of the characteristics of American shamans, as opposed to those of other regions, were pointed out.

Brief abstracts of the papers read are given in so far as material at the disposal of the Secretary will permit.

Prof. Roland B. Dixon read a paper on "The Chimariko Language." A few of the more characteristic features of the language were considered and compared with the types found in neighboring languages. The question of loan-words from surrounding stocks was briefly discussed, as were also one or two phonetic traits.

Dr. Alfred M. Tozzer presented two papers. The first of these was "On the Teaching of Anthropology to large Classes." He discussed the character of a general course in Anthropology, taking "Anthropology I" at Harvard as an example. Requirements for entrance; composition of the class; difficulties peculiar to a large

class, and how these difficulties are met; aids in conducting the course, and results were all touched upon. In "A Note upon Star-lore among the Navaho," Dr Tozzer emphasized the keen powers of observation of the Navaho as seen in the case of a gourd rattle which is used in connection with the Night Chant ceremony. Holes made in the rattle have been identified as representing stars which are seen in the month of the year in which the ceremony takes place and in the particular part of the sky toward which the special rites of the day are directed. The stars thus seen are supposed to represent certain gods of the tribe.

In "A Number-form from Folk-medicine," Prof. Charles Bundy Wilson presented a peculiar combination of numbers occurring in a remedy for rheumatism, which was discovered by the writer when gathering material for a paper on folk-medicine. The application of the remedy calls for three series of doses of three doses each. When the numbers of units in these doses are arranged in regular form, the sums of the vertical, horizontal, and diagonal columns present interesting results, particularly with reference to 13 and 3.

Prof. Francis W. Kelsey's paper on "Some Archeological Forgeries from Michigan" was accompanied with photographs and specimens illustrating the forgeries of 1891-92, 1898, and 1907, respectively. The paper appears in the present issue of the *American Anthropologist*.

In "The Prehistoric Habitations of the Sioux," Prof. N. H. Winchell called attention to the evidence which indicates that in prehistoric time the well-known form of earthen house of the Mandan was common in Minnesota. This evidence consists of traditions amongst the Ojibwa; the existence of many flat-topped, or concave-topped, low mounds; the persistence of such terms as "Ground House river," come in through the Ojibwa, who expelled the Sioux, found in Kanabec county; the stock alliance of the Sioux with the Mandan and the Hidatsa, as well as with the Omaha, all of whom are known, even in historic time, to have occupied such habitations, and finally some slight historic allusions to houses of this kind.

"Recent Aspects of the Eolithic Discussion" were reviewed by

Dr Charles Peabody, who called attention to Rutot's Tertiary eoliths and to his eolithic series persisting through all ages to and including recent Tasmanian cultures; also to a proposed change in the connotation of "eolithic," "paleolithic," etc. It is proposed to determine whether an eolithic industry may not exist in America.

Dr Peabody also presented a "Report for the Committee on American Archeological Nomenclature," of which he is chairman. This Report has been printed and is already in the hands of members of the American Anthropological Association. It covers only certain divisions of objects in clay and objects in stone, and is accompanied with sixty-six illustrations. The classifications offered and the definitions proposed are based so far as possible on form alone, due weight being given to systems of classification already made standard by writers of distinction. In all cases measurements are considered as referring to an upward direction. The variations in the body, rim, neck, foot, and handle of a clay vessel are noted. Articles in stone are classified as *chipped* and *ground*; and these two groups are subdivided, with an enumeration of all the types in each subdivision.

The "Report for the Committee on the Preservation of American Antiquities" was prepared and read by Prof. E. L. Hewett, secretary of the committee. Attention was called to the national monuments that have been declared such by Executive proclamation during the last year, including Chaco Cañon, Montezuma Castle, and others.

Owing to the unsatisfactory nature of the rules and regulations prescribed by the Secretaries of the Interior, Agriculture, and War, to carry out the provisions of the Act for the preservation of American antiquities, not much has been done in the way of field work. The Joint Committee on the Preservation of American Antiquities prepared a revision of these rules, which was approved by the Secretaries of War and the Interior, but the approval of the Secretary of Agriculture has not yet been procured. This failure to agree on a revision has resulted in an abrogation of the rules, the following order from the War Department by direction of the President taking their place:

CIRCULAR }
No. 40. }

WAR DEPARTMENT,
WASHINGTON, June 19, 1907.

By direction of the President, the following is published to the Army for the information and guidance of all concerned:

1. Pending further investigations of conditions by the Secretaries of Interior and Agriculture, the following institutions are granted a general permit to conduct such archeological researches as are contemplated by the act of June 8, 1906, for the preservation of American antiquities, subject to such special regulations as may be prescribed by the secretaries of these departments. This order is intended to take the place for the present year of any rules previously issued under this act, because of serious objections offered to said rules by the educational and scientific institutions of the country. In consideration of this privilege, the institutions named are directed to use every possible effort to coöperate with the government in the protection of these ruins from vandalism and in preserving them for the broadest educational use.

The Smithsonian Institution, the Archæological Institute of America, Harvard University, Yale University, Columbia University, the University of Chicago, Cornell University, University of California, University of Michigan, University of Minnesota, University of Pennsylvania, University of Iowa, University of Wisconsin, University of Texas, the American Museum of Natural History in New York, the Brooklyn Institute of Arts and Sciences, the Field Museum of Natural History in Chicago, the Carnegie Museum in Pittsburg, the Southwest Museum in Los Angeles, Stanford University, or any other reputable institution or association.

2. Applications received by post and department commanders from the above named or any other reputable institution or association should be forwarded through military channels to the Secretary of War, with report of the conditions involved and the limitations which should govern in order that the Secretary may prescribe the necessary regulations.

BY ORDER OF THE ACTING SECRETARY OF WAR:

WILLIAM P. DUVALL,

OFFICIAL:

Brigadier General, Acting Chief of Staff.

HENRY P. MCCAIN, *Adjutant General.*

Prof. Franz Boas, chairman, reported for the Committee on the Concordance of American Mythology. The "Advance Report on the Nomenclature of Indian Linguistic Families," by Mr F. W. Hodge, chairman of the committee, was printed for distribution and in his absence was read by title.

The paper by Prof. W. H. H. Rivers, of Cambridge, England,

on "The Genealogical Method in Anthropology," was illustrated with lantern slides. Dr George A. Dorsey's paper on "Field Work of the Department of Anthropology, Field Museum of Natural History," was supplemented by inspection of the Museum collections under the guidance of Drs Dorsey, Lewis, and others. Prof. A. E. Jenks presented "Race Statistics of the University of Minnesota," and Rev. S. D. Peet discussed "Migrations as shown by Archeology."

Papers were read by title as follows:

Dr Walter Hough: Blowguns of the Abbott Malaysian Collection in the United States National Museum.

Mr R. Lowrie: Catchwords for Mythological Motives.

Prof. M. H. Saville: (a) The Archeology of Esmeraldas; (b) Further Investigation of the Archeology of Manabi.

Prof. Henry Montgomery: Prehistoric Man in Manitoba and Saskatchewan. (Published in this issue.)

Miss Adela Breton: The Ancient Mexican Sites near Juchipila, Teuchitlan, Zapotlan, Perote, and Yoalliche.

Mr Frederick Monsen: A Description of Certain Ruins in an Unnamed Cañon in Southeastern Utah.

Dr Berthold Laufer: (a) The Ancient Culture Types of Asia; (b) The Coconut Palm as a Historical Problem

Mr William C. Mills: (a) Explorations of the Seip Mound; (b) Explorations of Jackson County Rock-shelters.

Mrs M. Burton Williamson: The Haliotis or Abalone Industry of the California Coast: Preservative Laws.

Mr H. J. Spinden: Mythology of the Nez Percé Indians.

Dr Geo. B. Gordon: (a) Ethnology of the Kuskokwim Valley; (b) Linguistic Variation among the Alaskan Eskimo.

Dr A. H. Thompson: Anthropology Past and Present.

Mr V. Stefánsson: (a) Physical Characters of the Eskimo of the Coast West of Cape Bathurst; (b) Social Organization and Daily Life of the Mackenzie River Eskimo; (c) The Treatment of Disease among Mackenzie River Eskimo.

Dr Maximilian Herzog: The Brain-weight of the Filipino. (Published in this issue.)

Prof. Otis T. Mason: Mind and Matter in Culture.

Dr Sarah Newcomb Merrick: (a) A Unique Method for Preserving the Inscriptions in our Historic Burial Grounds; (b) Present-day Beliefs in Some Medical Superstitions.

YALE UNIVERSITY MUSEUM,

NEW HAVEN, CONNECTICUT.

PROCEEDINGS OF THE ANTHROPOLOGICAL SOCIETY OF
WASHINGTON

Meeting of November 15, 1907

The 407th meeting was opened by the newly-elected president, Dr Aleš Hrdlička.

The paper of the evening was by Prof. E. L. HEWETT, Director of American Archæology for the Archæological Institute of America, on *Recent Explorations and Excavations in Colorado, Utah, and New Mexico*, illustrated with lantern slides. Professor Hewett accomplished, with the aid of volunteer students, an extensive reconnaissance of ruins on San Juan river in Utah and Colorado, and interesting views were shown of the aboriginal remains in Mesa Verde park, McElmo cañon, Monument park, and Grand gulch, the latter containing several hundred cliff-dwellings of the "Basket Makers." The work in New Mexico was concentrated on a large ruin in the Puye, where 120 rooms were cleared out and a collection of 3,500 specimens secured. The paper was discussed by Messrs Hrdlička and Robinson.

Meeting of November 17, 1907

The 408th meeting was addressed by Prof. MARSHALL H. SAVILLE, of Columbia University, on *Archeological Researches on the Coast of Ecuador*. Professor Saville, in charge of the George G. Heye Expedition, plans to examine the antiquities of the entire region between Mexico and Peru, taking up, in order, the coast and interior valleys. Thus far, two seasons have been spent in western Ecuador, between 4° south latitude and 1½° north latitude. Two cultures anciently occupied the coast: the Manabi in the dry region of the south, and the Esmeraldas in the humid region at and north of the equator. The ruins of the former are situated on the slopes of forested foothills that are watered with night fogs which descend about midway of their flanks. The houses, which were light wooden structures capable of resisting earthquakes, were placed on terraces excavated from the hillsides and resembling the trincheras of Mexico. The remains are a few slabs sculptured in low relief, and numerous great stone seats of U-shape, each represented as resting on the back of an animal. Mounds occur in which skeletons and pottery are found. The remains of Esmeraldas are exposed on the sea bluffs and along the river banks.

Enormous deposits of art objects are found along the coast for 250 miles, and on Atacamanes river are great deposits in the alluvium, showing on the two sections two lines of human remains, pottery, etc. In these deposits were upright tubes of pottery that served as coffins. Numerous gold objects and some emeralds were found by the expedition. A remnant of the Caiapas Indians living in northern Ecuador, about eighty miles north of the town of Esmeraldas, were visited and photographed.¹

The thanks of the Society were extended to Professor Saville for his interesting address.

Meeting of December 3, 1907

At the 409th meeting the President read the program for the coming academic year of the Paris School of Anthropology, and exhibited a photograph, by A. Frič, of a band of professional Indian-hunters still employed in southern Brazil. Several of the man-hunters show wounds, while in their midst is a small group of captured Indian women and children.

Prof. W. H. HOLMES presented an account of the prehistoric sites in Arizona and New Mexico recently set apart for preservation as public monuments. These consist of great pueblos in Chaco cañon, New Mexico; Inscription Rock near Zuni, New Mexico, bearing autograph inscriptions of early Spanish explorers; and Montezuma Castle on the Rio Verde, Arizona. Professor Holmes was followed by Prof. EDGAR L. HEWETT, who presented many interesting details regarding the Chaco Cañon pueblos and the cliff-ruins of the Mesa Verde. Illustrations of these ruins were shown, and a prolonged discussion engaged in by Messrs Lamb, Kober, Robinson, and Hewett.

Dr HRDLÍČKA demonstrated the right humerus of an adult wild orang, showing perfect healing after a complete oblique fracture at the middle of the shaft, just below the attachment of the deltoid. The bone, which was collected in Sumatra for the U. S. National Museum by Dr W. L. Abbott, is somewhat shortened, but there is little displacement, the animal having been left with a very serviceable limb. In view of the arboreal habits of the orang, the situation of the fracture in the right arm, and the time needed for a strong union of the fragments, the healing effected is remarkable. The case aroused much speculation as to the behavior of the animal under such conditions, and it seems certain that the injured arm was given a prolonged rest. Discussed by Professor Holmes and by Drs Lamb, Baker, and Kober.

¹ For a further account of the investigations of the Heye Expedition, see the Book Reviews in this issue.

Dr I. M. CASANOWICZ exhibited specimens of ancient textile work in the U. S. National Museum. Until quite recently little was known about textile art in antiquity, notwithstanding the numerous references to it by classical writers. But since 1885 large quantities of hand-woven textiles have been discovered in the cemeteries in upper Egypt (the Panopolis of the Greeks) and Antinoi (Antinopolis of Hadrian), which illustrate almost all the phases of this important art amongst the Greeks and Romans and the Egyptian Christians (Copts) from the third to the seventh century of the present era. The material found is mostly of linen or cotton. Wool forms only a small proportion, while silk is exceedingly rare, having been employed mainly in small patches for the adornment of more common fabrics. The linen stuffs are, as a rule, simple shuttle-woven fabrics, sometimes of great fineness, but frequently also woven like Turkish towel-ing (rough only on one side, however). Cotton is sometimes woven in the manner of flannel. The ornamental and decorative features which abound in these textiles, as centerpieces on covers and curtains, or borders on garments, were almost invariably made with colored threads of wool wrought in the same manner and with the same implements as modern tapestry. The pattern of these decorative pieces was pricked out with white linen thread; the designs for the greater part are geometrical, combined with conventionalized vegetal forms and animal figures. More ambitious pieces represent mythical Biblical scenes. Dr Casanowicz stated that it may be safely assumed that these textile designs represent not merely the local traditions and art of Upper Egypt, but the art and customs of the Empire. And in the decay of other branches of pictorial art the designs in tapestry were more broadly disseminated than before, and constituted the patterns for the artisans who were engaged in the production of the conventional low reliefs in stone which, from the fifth to the ninth century, were the most common monumental expression of decorative art.

Meeting of December 17, 1907

At the 410th meeting native cotton raised by the Hopi Indians of Oraibi, Arizona, was exhibited by the Secretary, who said that its seed is similar to that found in ancient graves in northeastern Arizona. The Hopi use this cotton for cord and textiles devoted to ceremonial purposes.

The paper of the evening was by Major JAMES ALBERT CLARK, of the Bureau of Immigration, on *The Effects of Immigration on the Ethnic or Race Composition of our Population*. Major Clark held that the pessimistic view that the country will be injured by immigration is baseless;

on the contrary, it is made by immigration. Teutonic, the term including English, German, and North Europeans, Major Clark maintained, will always be the backbone of the nation, and though 25,318,067 foreigners have come to the United States since 1820, this number has not smothered the basic population. He discussed the various characteristics and prejudices of the racial elements which make up the American nation, and concluded that the alchemy of assimilation is forming the greatest nation the world has ever known. The address was discussed by Messrs McGee, Robinson, Hrdlička, and others, and a vote of thanks was tendered Major Clark for his illumining treatment of the subject.

Meeting of January 7, 1908

At the 411th meeting, Dr D. S. LAMB exhibited a calvarium showing *ostitis deformans*, a disease found only in the white race, and anthropologically interesting.

Dr H. PITTIER DE FABREGA read a paper on *The Native Tribes of Costa Rica*, describing their probable affiliation and their present condition and customs. Costa Rica seems to have been the meeting point of two main migratory currents, the most ancient of which came from South America and imported into the country elements of Chibchan affinity, to which the still existing tribes all belong. These tribes are the Brunka, Tirúb or Terraba, Cabécar, Bribri, and Guatuso. Later migrations, that probably took place during the epoch of highest development of the pre-Columbian empire of Mexico, brought from the North the Nahuas and Chiapanecs, which occupied the Pacific coast and were annihilated or absorbed by the Spanish conquerors.

Mr G. N. COLLINS illustrated with slides his *Notes on the Indians of Chiapas*. The Zoque and Tzotzil Indians of Pantepec were especially referred to, and a brief account given of their modes of subsistence, architecture, arts, and customs.

Dr O. F. COOK, in his *Notes on Guatemalan Indians*, spoke of the great number of natives in that country. The Indians of Alta Vera Paz were particularly examined. Many slides illustrating deforesting, reforesting, cornfields, and cottonfields, were shown. Dr Cook believes that the high interior did not encourage habitation until comparatively recent times. A series of views illustrating the cotton-cloth industry was received with interest. The appearance and customs of the Kekchi and Cahabon Indians inhabiting this portion of Guatemala were discussed.

Meeting of January 21, 1908

The paper of the 412th meeting was by Dr George Byron Gordon, of the University of Pennsylvania, on *An Ethnological Survey of the Kuskokwim River, Alaska*. Illustrations were by lantern. Dr Gordon said that in continuation of his Alaskan explorations, begun in 1905, he visited during the summer of 1907 the region of the upper Kuskokwim river, and embarking on that stream, descended its whole length to the mouth of Bering sea. The upper river for 200 miles was found to be untenanted by man and it appears that there is a corresponding scarcity of animal life. The first habitations reached were abandoned, and in one house five dead bodies were lying as though overtaken by a sudden pestilence; later it was ascertained that virulent pneumonia had swept the valley. Lower down the river an inhabited village was reached; here Dr Gordon observed that the people were of Eskimo type, but spoke the Tinne (Athapascan) language. Their houses are of logs erected in arch shape and covered with earth. Assembly or "club" houses of large size exist here, and there are numerous caches, graves, and salmon-drying racks. The caribou, on which the natives depended, have left their former range and do not now visit the Kuskokwim. Dr Gordon visited the Eskimo villages at the mouth of the river and obtained photographs, measurements, and other data concerning the people. The inroads of disease among the natives, Dr Gordon said, are appalling; in a few years it is probable the inhabitants of this region will be exterminated by maladies introduced by whites. In answer to a question of Mr Robinson, Dr Gordon stated that the timbers of the old houses on the upper Kuskokwim had been cut with ivory and stone tools.

The discussion of Dr Gordon's interesting paper was participated in by Messrs Heye, Robinson, Hrdlička, and others.

The following active members have been elected during the last quarter: Miss Louise A. Rosenbusch, U. S. National Museum; Major James Albert Clark, Bureau of Immigration; and Mr Edgar L. Hewett, Archæological Institute of America.

WALTER HOUGH,
General Secretary.

BOOK REVIEWS

Contributions to South American Archeology. The George G. Heye Expedition. The Antiquities of Manabi, Ecuador. A Preliminary Report. By MARSHALL H. SAVILLE, *Loubat Professor of American Archeology, Columbia University.* New York: 1907. 4°, 135 pp., 55 pl., 9 figs.

The researches embodied in this handsome volume were undertaken by the author with the support of Mr George G. Heye, whose interest in American archeology is attested by the rich collections of art objects brought together by him and by the substantial aid he has given to students of the subject. The plan of the work is to collect and publish data relating to the precolumbian inhabitants of the extensive region lying between Peru on the south and Panama on the north, and the present volume is referred to as a preliminary report on a single province of this great and practically unexplored region.

The explorer, accompanied by his brother, left New York in May 1906, and proceeding by way of Panama soon reached Manta in the province of Manabi, the point of departure for the proposed expedition. The work in Manabi continued without interruption for six weeks. Later a trip was made to the interior where six weeks were spent in examining the antiquities of the vicinity of Riobamba, representing a distinct culture group. Later the excursion was extended to Mocha, Ambato, Latacunga, Quito, and Perucho.

The province of Manabi lies beneath the Equator and has an area of 20,442 square kilometers. It is moderately mountainous but without high ranges or peaks, the surface rising gradually from the Pacific toward the base of the Andes. The lower lands are arid, while the portions that rise above a thousand feet are moist and support a rich tropical flora. There are few streams, and although beneath the Equator, the climate is salubrious, the temperature at night rarely exceeding 70 degrees F. Until now the province has remained practically unexplored, and little is yet known of its geography, geology, and natural history. The capital is Porto Viejo, situated about twenty miles from the coast, and has about 5,000 inhabitants, two churches, a college for boys, a college for girls, a school of art, and various government buildings. Manta is the seaport. At the present time there are no pure-blood Indians within the province, the population consisting of a few whites, numerous blacks, and a still

larger percentage of mixed bloods. A number of pages of the work are devoted to the very interesting history of the province and the neighboring province of Esmeraldas. The various works consulted by the author are given in the bibliography at the end of the volume, some of the more important authors being quoted at length. The principal pre-columbian inhabitants were known as the Caras, a warlike people who had intruded themselves among the earlier inhabitants but who later abandoned the country gradually to various local tribes. There are widely divergent traditions to the effect that the country was at one time occupied by a race of giants, but these stories are without verification and may have arisen from the presence of mastodon remains in the region.

The vanguard of the more civilized Quichua tribes of the south, usually referred to as the Incas, arrived in Manabi, according to tradition, early in the fifteenth century. Colonies were established and the southern culture was introduced to a limited extent, but today there appear to be few traces of it among the archeological remains of the province. Spaniards first reached the region in 1526, and in 1527 Pizarro skirted the coast of Manabi on his way to Tumbez in northern Peru, while in 1534 Pedro de Alvarado landed in Manabi and marched with a large mixed force into the interior.

It would appear that there were numerous native villages in the region, many of the names being preserved in the Spanish records and some remaining even today. Although the archeological remains indicate that the Manabi culture was somewhat homogeneous, differing materially, however, from that of neighboring provinces, the people known historically were by no means homogeneous, the various villages speaking different dialects and given to discord and war. The Spanish annalists give some information regarding the manners and customs of the people which indicates a rather low state of culture emphasized by a debased system of religion. The province had two principal temples, one of them celebrated for its possession of a great emerald, worshiped as a deity, which had such wonderful curative powers that the sick and decrepit came long distances to be cured. The sacrifices were of gold, silver, precious stones, fine fabrics, skins, human beings—especially women, children, and captives. The other temple, situated on the island of La Plata, was also reputed to be a Mecca for the people of the mainland, a statement given substantial support by the remarkable finds of relics of varying and unique character made by Dr G. A. Dorsey in 1892, and now preserved in the Field Museum of Natural History.

Without dwelling at length on the field operations of the expedition,

the author takes up serially the archeological features of the province and the collections of art objects made.

It is recorded by the Spanish chroniclers that the lack of fresh water in the arid areas of Manabi was overcome by the ancient inhabitants by digging wells, which were sunk in the surface of the living rock to a surprising depth. It would seem that in more recent times many of these wells were abandoned and became filled with debris. Of those cleaned out in recent years, some are dry while others afford an excellent water supply. Two examples are described by our explorer: one, cut in "a sort of spiral fashion through the solid rock," is at present 42 feet deep; the opening at the surface is only 2 or 3 feet across and the diameter gradually diminishes to a few inches at the bottom. The other, which had been recently discovered, is cleaned out to a depth of 25 feet, and yields a good supply of potable water at that depth. It is 8 feet in diameter at the surface, and although excavated in the solid rock is walled up with rough stones. The natives on the arrival of the Spanish attributed these wells to the mythical giants of former times. It is quite apparent that they owe their origin to a people of greater intelligence and enterprise than the tribes encountered in the region by the whites.

That the ancient peoples possessed a considerable degree of culture is attested by the remains of buildings as well as by numerous works of sculpture and the plastic art. At Manta are traces of an extensive settlement, including the remains of hundreds of house sites and mounds, while stone implements and potsherds are scattered over the ground. The buildings contained from one to seven rooms, and were often of large size, the largest measuring forty feet in width by one hundred and ninety feet in length. They were not oriented with any close approximation to accuracy. The walls are from two to five feet in thickness and not more than three or four feet in height above the surface of the ground; they were faced with slabs of stone set on edge, the intervening space being filled with rough stones. As the region is subject to frequent earthquake shocks it is probable that the superstructures were largely of wood, cane, and thatch. Some traces of the use of adobe bricks were noted. Within and about the buildings are numerous rudely sculptured figures of men and animals, generally much weathered.

In the hills north of Monte Cristi are many house sites, generally of the same type as those of Manta. Those on the hill known as Cerro de Hojas furnish the stone seats which form so important a feature of the archeological remains of Ecuador. At one point large quantities of pottery fragments and many spindle-whorls were found in the houses of

Cerro de Hojas. Adjacent to the house sites were found stone columns, and figures of men as well as other curious sculptures, while on a neighboring hill numerous very interesting bas-reliefs were discovered. No temples were identified, and as excavations were not undertaken, no burial places were definitely located.

The most remarkable feature of the antiquities of Manabi is the stone chairs or seats, found on house sites on the low summits of the hills north of Monte Cristi. They were confined to an area about twenty miles in diameter and have not been found elsewhere. The first mention of these strange sculptures is made by Villavicencio, in 1858, who states that on the flat summit of one of the hills, presumably Cerro de Hojas, "there is a circle of seats of stone, no less than thirty in number, each of which is a sphinx, above which is the seat with two arms, all of stone, well worked and of a single piece." Our explorer, however, although encountering many seats still in place found no indication of regular order or arrangement and no traces of slabs of stone which might have served as tables.



FIG. 33. — Stone seats of Manabi.

The seats, which are from one to three feet in height, less than three feet in width, and still less in depth from front to back, are made of sandstone, or, more frequently, of a grayish andesite. The upper part of the seat is quite uniform in character, but the supporting sculptures are more diversified, the larger number representing human figures and the remainder animals, especially the puma, and in exceptional cases the bird, lizard, bat, and monkey. In a few cases geometric ornamentations are carried around the vertical face of the seat. Several hundred of these objects were seen, and thirty-eight are shown in the plates.

Numerous human figures, carved from sandstone and andesite, always extremely primitive in style and rude in execution, were observed in place in the ruins of Manabi, and nineteen examples were brought to New York. Their use is not fully determined, but as they could hardly have served any architectural purpose and are not adapted to serve as

table supports, we are left to assume that they probably represent deities, and as some have depressions in the top of the head or head-dress, they probably served for burning incense. In height they range from a few inches to about two feet. They have little artistic interest, corresponding in general with sculptures of the human figure found everywhere south of the Mayan provinces.

Ruder even than the sculptured human figures are the representations of animals, the puma being the favorite subject. The figures usually have a square base, and support on their backs or are otherwise associated with short columns or pedestals, in the top of which is a cup-like receptacle indicating their identity in use with the human figures. It is not unlikely that they were associated with the stone chairs in the religious ceremonies of the people.

Related to the above in general form and probably in use are numerous short cylindrical stones, the top of which is flat and also slightly depressed or bowl-shaped. Attention is called to the fact that these



FIG. 34. — Stone incense pedestals or altars of Manabi.

pedestal-like columns correspond closely in size and shape with certain columns found in Costa Rica, some of which seem allied to the metate plates of the same region, although it is surmised that the Manabi columns may have served as pedestals for idols or incense burners.

Metates, or mealing stones, occur in large numbers but have been diligently sought by the modern inhabitants of the region for everyday use. They are simple, thin, slightly curved slabs, without legs or ornamentation. It is a remarkable fact that no stone implements, chipped or polished, were obtained, and there appears to be no record of their occurrence in the region; and no emeralds were collected, although, according to common report, the earlier explorers found many of them in possession of the natives — a large crystal of this stone being their chief deity.

Of particular interest are certain fragmentary bas-reliefs found on Cerro Jaboncillo, near Monte Cristi. They are executed on the surface of squarish slabs or plates of andesite a few inches in thickness and probably not exceeding twenty-four inches in length or width. These reliefs represent both human and animal forms, all being very simple and primitive in treatment, agreeing in this respect with the sculpture work of the South American west coast. The most striking feature of the reliefs of human figures is the crown-like arrangement of ornamental figures surrounding the head, the significance of which, unless it represents a head-dress merely, cannot even be conjectured. In the spaces about the body are figures of birds, beasts, and conventional symbols. Two of the tablets contain, instead of the human subject, figures of monsters resembling lizards. The various devices introduced into these sculptures will doubtless be more readily explained when collections have been increased.

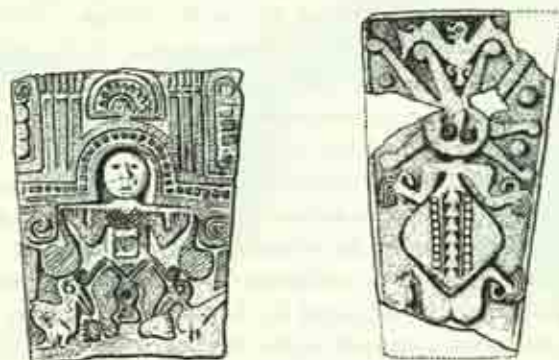


FIG. 35. — Sculptured tablets from Manabi house sites.

Although the Spanish conquerors state that many objects of gold and silver were obtained from the inhabitants of this district, nothing of the kind is in evidence today and no tradition of the discovery of objects of this class seems to exist among the present population. Objects of copper however are not rare, and an ax blade of this material was collected, also three small bells and three disks, the latter supposed to have served as breast ornaments, or possibly as bells, since they are very resonant when struck.

Fragmentary earthenware is plentiful on some of the ancient dwelling sites, but as no excavations were undertaken few entire vessels were acquired. At Manta there was much red ware, the vessels being large and the walls thick. These may have been used either for household or for

mortuary purposes. The decorations are in red paint and in incised lines. Of the minor articles of clay, spindle-whorls, displaying a variety of decorative designs, are most plentiful. There are also figurines of men and animals, stamps, and molds.

It is refreshing to have these preliminary glimpses into an untrodden archeological field, and the researches initiated by Heye and Saville are full of promise of additional interesting and valuable results. The problems of prehistoric South America and of the relation of the ancient peoples of that country to Central and North America, as well as to other adjacent land areas, are fraught with deep interest to all Americanists.

W. H. HOLMES.

Archeological Researches on the Pacific Coast of Costa Rica. By C. V. HARTMAN. Pittsburgh: Published by the Authority of the Board of Trustees of the Carnegie Institute. August, 1907. *Memoirs of the Carnegie Museum*, Vol. III, No. 1. 4°, 95 pp., 47 pl., 72 figs.

This is a valuable addition to the archeological literature of Central America, affording students the opportunity of becoming acquainted with a large number of rare and interesting works of art in stone and clay from a region heretofore barely touched by the scientific explorer. The work consists of introductory matter relating to the discovery and early history of the Nicoya peninsula and to archeological explorations made previous to the year 1897, followed by an account of the researches of the author with descriptions of his own collections and the rich material of the Velasco collection recently acquired by the Carnegie Museum, as well as of the great collections preserved in the National Museum of Costa Rica. The native peoples of the Nicoya region have been almost completely absorbed into the mixed Spanish population and have lost nearly all their primitive habits and customs as well as their language. The student of their history is thus limited in his resources almost exclusively to the study of their burial places and the objects of art obtained therefrom.

The burial ground of Las Guacas, in which the author conducted his principal researches, is situated near the pueblo of Nicoya on the peninsula of Nicoya in western Costa Rica, and was entirely covered with forests when the first settlers took possession of the site about 1877. There were no indications above the ground of the treasures hidden below. The numerous pieces of broken pottery and the metates met with close to the surface proved nothing, as similar finds are common in these regions near ancient settlements and do not necessarily indicate burials. The entire burying ground does not seem to have included more than a



FIG. 36. — Examples of the elaborately carved metates of Costa Rica.

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few acres, but it is described as varying much in depth, containing, especially in the central part, two or more burials one above another. The burials were in pits excavated in a layer of conglomerate which is overlaid with deposits of humus and clay. The human remains had been buried not as bodies are buried today, but the bones of one or more individuals had been gathered in heaps or bunches and cast into the pit along with various objects of art.

The author's descriptions of the several classes of objects are full and clear, and his large series of illustrations is most admirable. The identification of the numerous varieties of stone used seems, for certain parts of the collections, to have been very carefully attended to — a matter of much difficulty, however, for the reason that precious specimens cannot be submitted freely to the tests of the mineralogist. Of first importance among the many artifacts obtained from these graves are the elaborately sculptured metates or mealing plates in the manufacture of which the ancient people must have expended a large share of time and energy. Upward of fifty specimens were taken out by the author during his explorations of a small remnant of the cemetery of Las Guacas, and it is estimated that at least two thousand examples have been at one time or another collected from the site. Hewn from large blocks of lava, they served during the lifetime of the owners and were cast into their graves in order that they might not suffer for want of food in the spirit world, or as simple offerings. They are elaborate works of art requiring great skill and patience in their manufacture, and are remarkable for their graceful lines and their artistic and often elegant ornamentation. The numerous forms embodied and the sculptured designs were doubtless symbolic and related to deities believed to preside over the functions of the utensil, which was, more intimately than any other, connected with the food supply of the people.

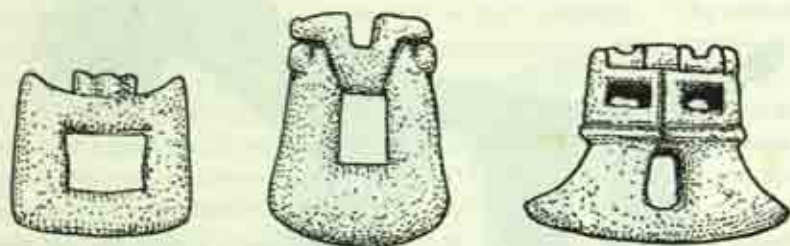


FIG. 37.—Handstones or mullers used with the metate plates of the Costa Ricans.

The number of hand-stones, mullers, and pestles obtained from the graves was not so great as might be expected considering the great number of grinding plates. They appear to be of three principal varieties:

the small sub-rectangular flattish forms, plain or with humps to fit the hands; the long cylindrical forms, the ends of which project beyond the margin of the plate for convenience in holding, and the remarkable stirrup-shaped variety found but rarely in other parts of America. Minor objects of stone are numerous and interesting. Chipped implements are comparatively rare and include only a few two-bladed axes of unique shape,

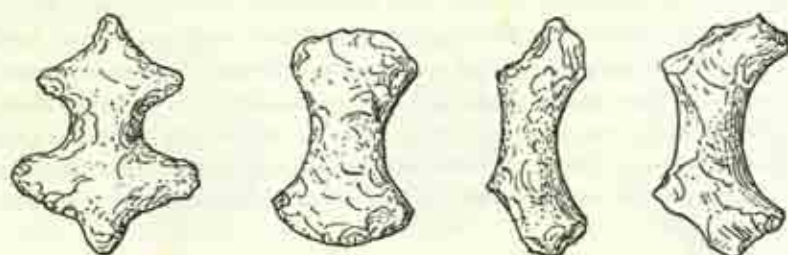


FIG. 38. — Chipped slate axes of the ancient Costa Ricans.

and a single arrowpoint. Objects of polished stone are exceedingly plentiful. Many are implements, as celt heads and hammers, but the larger number are amulets or ornaments. Celts of ordinary form, mostly oval or round in section, are numerous and were evidently the principal stone implement of the Nicoyans. They are usually made of fine-grained green stone and are highly polished, save in cases where the upper end was left rough for insertion into the haft. A number of channeled bark scrapers or beaters are seen in the collection, and mace heads are remarkably numerous. The latter are perforated for hafting and are shaped to represent life forms in great variety. All are small and must have been



FIG. 39. — Mace heads of the ancient Costa Ricans.

employed in ceremonial uses rather than as club heads for actual warfare. Many specimens bear evidence of the use of the hollow cylindrical drill in their manufacture. At no other locality has such a large number of implements of this general class been found. They are classified as human heads, mammal heads, heads of birds, birds, two-legged monsters, alligators, and clubs without animal characters.

Polishing stones, usually pebbles of more or less translucent agate, are numerous. There are also whetstones, grindstones, cutting tools, and cores, the latter displaying the scars due to removal of portions by sawing and breaking.

The Nicoyan lapidaries were very skilful in carving all varieties of stone, and many examples of their work are described and illustrated. Although it is impossible to draw any definite line between those objects which had significance as amulets and those which were ornaments, pure and simple, the author is doubtless correct in referring to them in general as amulets. They are of small size and are usually perforated, notched, or grooved for convenience in attachment to the person or to some part of the costume. They are classified as celt-shaped objects, figurines sculptured in the round, tubes, beads, and objects without animal characters.

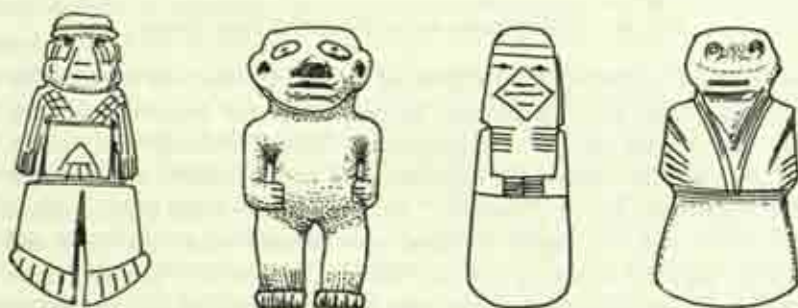


FIG. 42.—Amulets of the ancient Costa Ricans.

According to the author the Las Guacas burial ground has yielded more objects of jade than all other sites in southern Central America combined. The materials of the Carnegie Museum collection have as yet, however, not been fully identified. Professor Brown of the University of Pennsylvania, who has made a study of the Velasco collection, considers it to contain probably the best assemblage of worked American jade in existence.

Notwithstanding the frequency of the occurrence of jade on the Nicoyan peninsula no indication of the source of supply has yet been discovered. However, the fact that so much of this material has been found and that numerous blocks of the crude or partially worked stone are present, indicates the probability that the source of the raw material is near at hand.

Objects of clay are not numerous, the locality differing in this respect from most of the culture centers of middle America. A few small vessels,

some ocarinas or whistles, and numerous small figurines comprise the list. The surface of the ware displays the natural color of the clay or is painted red, and the decorations, which are always simple, appear to be in the main incised. Larger vessels, probably used for domestic purposes, were found by the early explorers, but nearly all when found were in a crushed or fragmentary state and were not preserved.



FIG. 41. — Ocarinas or whistles of the ancient Costa Ricans.

In concluding the author defines the limits of the Nicoyan culture as probably not extending beyond the peninsula, the islands in the Gulf, and limited areas on the neighboring mainland. The art of the region is in many respects different from that of the neighboring provinces, while occasional features remind us of the art of the Chiriqui and other more distant sections.

It is to be regretted that a map of Costa Rica indicating clearly the sites referred to is not included in the volume. On the whole, however, the Carnegie Museum is to be congratulated on the publication of this excellent memoir, and students of archeology will anticipate with much pleasure the appearance of other promised volumes of the series dealing with kindred subjects.

W. H. HOLMES.

Publications of the Department of Anthropology of the University of California.

The history and status of this Department have been the subject of a special report issued by it in 1905, to which the reader is referred for fuller information. Regarding the establishment of the Department this pamphlet gives the following information:

"The Department of Anthropology was constituted by the Regents of the University of California, September 10, 1901, as the outcome of numerous archaeological and kindred researches carried on for the University of California for some time previous through the generosity of Mrs Phoebe A. Hearst. These investigations were of such importance and

the collections formed in connection with them had assumed such large dimensions, that a more definite organization seemed desirable for their direction and coördination. The purposes of the Department were defined as the conducting of special researches in the field and museum in the various subdivisions of the Department, the preservation of materials and facts secured and the formation of a museum, the diffusion of knowledge by publication and lectures, and the establishment of courses of instruction and research in the University. The Department was placed under the direction of an advisory committee, a year later succeeded by an executive committee. Professor F. W. Putnam, of the Peabody Museum of Harvard University and of the American Museum of Natural History, was chairman of both committees. In 1903 Professor Putnam definitely assumed headship of the Department by his appointment as Professor of Anthropology and Director of the Museum of Anthropology, resigning his position in the American Museum of Natural History.

"The policy and work of the Department are directed by the Executive Committee. The various investigations are carried on and the collections formed by the officers and collectors of the Department.

"The researches supported by Mrs Hearst have been most extensive in Egyptian archaeology, Græco-Roman archaeology, and North and South American archaeology and ethnology, but have by no means been confined to these fields. Expeditions have been sent out to other regions and collections from many other places have been acquired. Valuable collections have also been received and investigations carried on through the generosity of several other donors, especially the Alaska Commercial Company, Mrs W. H. Crocker and Mrs Whitelaw Reid, Mr Cornelius E. Rumsey, Mr William R. Hearst, and the Archaeological Institute of America.

"Systematic anthropological explorations in California were begun in 1899 under the patronage of Mrs Hearst. Dr Philip Mills Jones carried on archaeological work, supplemented later by ethnological collecting, until 1902. In 1901 Drs A. L. Kroeber and P. E. Goddard were appointed to carry on archaeological and linguistic investigations, and Professor J. C. Merriam of the University was given charge of investigations on the antiquity of man, both of these lines of exploration being under the direction of Professor F. W. Putnam, who at this time assumed supervision of the Department. In 1903 Professor Putnam became active head and director of the Department and the investigations in progress were coördinated and expanded into an Ethnological and Archaeological Survey of California.

"In order to obtain the greatest results with available means, coöpera-

tion with other institutions was arranged so as to avoid duplication of effort and to increase the systematization of the researches made in the anthropology of California. In general ethnological research the Department has coöperated with the Huntington California Expedition of the American Museum of Natural History, in connection with which Dr R. B. Dixon of Harvard University had for several years before made investigations in northeastern California."

Besides Special Volumes and Memoirs in quarto, the Department embodies the results of its investigations in three series of publications, treating respectively of American Archeology and Ethnology, Greco-Roman Archeology, and Egyptian Archeology. The first of these is practically devoted to the work of the "Ethnological and Archæological Survey of California," above referred to, and so far as published or projected consists of the following volumes:

- Vol. I, No. 1. Life and Culture of the Hupa, by Pliny Earle Goddard. Pages 88, plates 30, September, 1903.
 No. 2. Hupa Texts, by Pliny Earle Goddard. Pages 290, March, 1904.
- Vol. II, No. 1. The Exploration of the Potter Creek Cave, by William J. Sinclair. Pages 27, plates 14, April, 1904.
 No. 2. The Languages of the Coast of California South of San Francisco, by A. L. Kroeber. Pages 52, June, 1904.
 No. 3. Types of Indian Culture in California, by A. L. Kroeber. Pages 22, June, 1904.
 No. 4. Basket Designs of the Indians of Northwestern California, by A. L. Kroeber. Pages 60, plates 7, January, 1905.
 No. 5. The Yokuts Language of South Central California, by A. L. Kroeber. Pages 213, January, 1907.
- Vol. III. The Morphology of the Hupa Language, by Pliny Earle Goddard. Pages 344, June, 1905.
- Vol. IV, No. 1. The Earliest Historical Relations between Mexico and Japan, by Zelia Nuttall. Pages 47, April, 1906.
 No. 2. Contributions to the Physical Anthropology of California, by A. Hrdlicka. Pages 16, tables 5, plates 10, June, 1906.
 No. 3. Shoshonean Dialects of California, by A. L. Kroeber. Pages 100, February, 1907.
 No. 4. Indian Myths of South Central California, by A. L. Kroeber. Pages 84, May, 1907.
 No. 5. The Washo Language of East Central California and Nevada, by A. L. Kroeber. Pages 67, September, 1907.
 No. 6. The Religion of the Indians of California, by A. L. Kroeber. Pages 38, September, 1907.

- Vol. V, No. 1. The Phonology of the Hupa Language: Part I, the Individual Sounds, by Pliny Earle Goddard. Pages 20, plates 8, March, 1907.
- No. 2. Navaho Myths, Prayers and Songs, with Texts and Translations, by Washington Matthews, edited by Pliny Earle Goddard. Pages 43, September, 1907.
- Vol. VI, No. 1. The Ethno-Geography of the Pomo and Neighboring Indians, by S. A. Barrett. Pages 332, maps 2, February, 1908.
- No. 2. The Geography and Dialects of the Miwok Indians, by S. A. Barrett. Pages 36, map 1, February, 1908.
- No. 3. On the Evidences of the Occupation of Certain Regions by the Miwok Indians, by A. L. Kroeber. Pages 12, February, 1908.
- Vol. VII, No. 1. The Emeryville Shellmound, by Max Uhle. Pages 106, plates 12, June, 1907.
- No. 2. Recent Investigations bearing on the Question of the Occurrence of Neocene Man in the Auriferous Gravels of the Sierra Nevada, by William J. Sinclair. Pages 25, plates 2, February, 1908.
- No. 3. Pomo Indian Basketry, by S. A. Barrett (in press).
- Vol. VIII, No. 1. A Mission Record of the California Indians, from a Manuscript in the Bancroft Library, by A. L. Kroeber (in press).
- No. 2. The Religion of the Luiseno and Diegueño Indians of Southern California, by Constance Goddard DuBois (in press).
- No. 3. The Ethnography of the California Indians, by A. L. Kroeber (in press).

The material so far published may be classified as follows: Papers on General Ethnology, five covering 490 pages; Archeology, three of 158 pages; Technology, one of 60 pages; Physical Anthropology, one of 16 pages; Mythology and Religion, two of 122 pages; History, one of 47 pages; Philology, eight of 1,129 pages. It is evident from the report of the Department that much more attention has been paid to some of these subjects relatively, such for instance as archeology, than this enumeration would appear to indicate, and it must not be forgotten that the linguistic material contains a great deal bearing on mythology and other subjects. At the same time the very great preponderance of philological work both in number of treatises and in actual bulk is an accurate index of the prominence of philological problems in this state and the necessity the ethnologists have been under of adopting language as the

leading-string of their survey. In fact this puzzle-ground of North America formerly comprised within its borders sixteen entire stock languages and representatives of five others, while the number of languages and dialects within these would aggregate a hundred to a hundred and fifty or more. The distribution of stocks in California as determined by the workers of the Bureau of American Ethnology and laid down in the Powell linguistic map of the regions north of Mexico was naturally used as a starting point by the California students, and it is creditable to the work done at that time that it has been found necessary so far to drop but one stock from the list then determined and to add none. On the other hand the limits of the several stock areas have, with more accurate information, been altered almost everywhere, so that the stock map of California now presents a very different appearance. So far but two languages have been treated at all exhaustively — the Hupa dialect of Athapascan in the north and the Yokuts in the south; but there are interesting papers on the Washo, the only small stock of California entirely on the great plateau, the small and rapidly dying coastal families south of San Francisco, and the Shoshonean dialects within the state, besides a wealth of material on Pomo, Moquelumnan, Yuki, and Wintun in the first two parts of volume VI which is here classed under the head of General Ethnology. A beginning has also been made in publishing the valuable Navaho material left by the late Dr Washington Matthews. In the recently published first part of "The Phonology of the Hupa Language" Professor Goddard has embodied the results of the most careful and painstaking study of the nature of American phonetics ever attempted. One wishes the author might be enabled to extend this work over much more of North America than even California.

In view of such great linguistic diversities in California it was to have been expected that the physical types would be equally varied, but the paper of Dr Hrdlicka shows that such is not the case. Says the writer:

"The general results of the examination are as interesting as unexpected. The California mainland crania from all the regions represented in the collection show numerous and important relations in absolute and relative proportions, in shape, and in many other features. All this points to the conclusion that the skulls are those of one single physical type of people. There are, as can be seen in the detailed data, local differences in some particulars, but these differences are in no case great enough to allow a separation of distinct types. An almost necessary conclusion from the above is that many, if not all, of the California tribes, as we see them today, with their different languages and perhaps other ethno-

logical differences, sprung from one original people, their ethnological differentiation taking place later.

"As to its relations, the California mainland physical type is practically identical with that of the Santa Barbara mainland, and with that of at least a large part of the adjoining archipelago. Beyond the boundaries of the state no indication of this type has yet been found in the immediate north or the northwest. Along the eastern border of California are the Pa-Utes. Of the physical type of these people but little is as yet known, but the few crania that have been described or are in our collections are very close indeed to the Californians. . . .

"In the immediate south are the Mission Indians, who represent perhaps a comparatively recent immigration into that country and are of the physical type of the Mohave. Ancient crania from the California Peninsula are also of a different type. Arizona and Sonora show no population, recent or ancient, allied physically to the Californians. In Mexico, however, are several great Indian peoples who in many features approach the Californians to such a degree that an original identity must be held as probable. One of these is the Otomi, of the States of Hidalgo and Mexico. A large group of peoples in the States of Puebla, Michoacan and farther south, even including the Aztecs, and finally the Tarahumare, in Chihuahua, are all physically related to the Otomi as well as to the Californians."

The divergent results arrived at from linguistic and somatological surveys in this one area show how important it is that neither should be neglected. The third of the three great methods of classifying peoples, i. e. by culture, has not been lost sight of by the California workers, and in particular has been made the subject of a preliminary treatise by Dr Kroeber (in volume II, number 3 of the series). Dr Kroeber finds that exclusive of the narrow fringe of plateau to the east, four cultural areas may be distinguished within the limits of the state. The largest of these occupies nearly all of the central and northern parts of the state and presents the most typical form of Californian culture. From this is specialized a small northwestern area centering about the lower Klamath river and extending southward as far as lower Eel river and northward to the Siskiyou range and southern Oregon. While distinct from the north Pacific coast culture beyond the Columbia, in both the economic and social life of its people it shows certain points in common and is evidently one step in the transition to that culture. In the southwest, along the coast of Santa Barbara, Ventura, and perhaps Los Angeles counties, and on the Santa Barbara islands, is another specialized area of which little can now

be learned ethnologically except from the writings of early travelers and missionaries but which, on the other hand, is one of the richest archeological areas within the state. It shares with the northwestern area a higher artistic development and the possession of a well made canoe, but is in most respects entirely independent of it. The fourth cultural area is in the southernmost part of the state occupied by Shoshonean and Yuman tribes. It possesses certain characteristic features but is in many respects transitional between the Californian cultures to the northwest and the Pueblo cultures of New Mexico and Arizona. It should be noted that there is also a general agreement in the type of languages spoken in the first three areas in question, those of the northwestern and southwestern groups being complicated while the languages of the central tribes are relatively simple. The only tribe so far treated specifically from a cultural point of view, however, is the Hupa, so that a mere beginning has been made in the publication of this part of the work. The religious side of Californian culture has been considered in a separate pamphlet, also by Dr Kroeber, in which in the main the same ethnographical facts are again brought out though the treatment is much fuller. The ethno-geography of the Pomo and their neighbors, and of the Miwok, have been discussed in two comprehensive reports by Mr Barrett and represent a branch of ethnological investigation to which too little attention has been paid in other parts of the continent.

As already remarked, the amount published regarding archeological remains is as yet hardly proportionate to the interest which the question of early man in California has excited in previous years. The conclusions arrived at by Mr William J. Sinclair in his papers on "The Exploration of the Potter Creek Cave" and "Recent Investigations Bearing on the Question of the Occurrence of Neocene Man in the Auriferous Gravels of the Sierra Nevada" are distinctly opposed to the idea that man existed in this region in extremely ancient times. In the latter paper various supposed finds of human relics in the gravel, including the case of the famous Calaveras skull, are taken up and found to lack a proper scientific foundation. "A review of the evidence favoring the presence of the remains of man in the auriferous gravels," says Mr Sinclair, "compels one to regard it as insufficient to establish the fact. On the preceding pages it has been shown either that there have been abundant opportunities for the relics in question to be mixed with the gravels accidentally, or that the geological conditions at the localities are such as to render it improbable that the implements and bones have been associated in the gravels to the extent supposed."

Mrs Nuttall's paper on "The Earliest Historical Relations between Mexico and Japan from Original Documents Preserved in Spain and Japan" is of very great interest and importance on account of the frequent assertions of Asiatic influence on the Pacific coast and the known presence of several objects from Asia in unexpected situations.

As a result of the work of this survey — ably seconded by that of Prof. Roland B. Dixon of Harvard University — ethnologically speaking we have a new California. Ten years ago ethnologists busily occupied in other quarters of America were looking on helplessly at the fast disappearance of these rich aboriginal cultures of California, while to-day we have an excellent general understanding of those cultures, a number of detailed linguistic treatises, and an experienced corps of investigators pushing the survey of the region along a number of different lines after an intelligent plan and to positive and valuable results. Among these as an instance might be mentioned that flood of light being thrown on the question of the origin of stocks by the work here which is facilitated by the great number of families within a limited area. In short, the work of this new Department of Anthropology at the University of California is now in the very front rank of anthropological investigation in America.

JOHN R. SWANTON.

1876-1906. *L'Ecole d'Anthropologie de Paris*. Paris: 1907. 8°, ix, 210 pp.

In these days of memorials and anniversaries Anthropology comes in for its share. The present volume, which has appropriately enough for its frontispiece a portrait of Paul Broca, records the activities of the famous Parisian "School of Anthropology," whose foundation in 1876 was "the last step in the creative action of Paul Broca." The contents include a sketch of the School since its foundation, by Dr Henri Thulié, the director (pp. 1-27); a list of the chairs, their holders, and the subjects of instruction (pp. 30-99); other courses and lectures given at the School from time to time (pp. 100-104), etc. Pages 113-210 are occupied by a bibliography of the anthropological works of the professors now or formerly connected with the School. Outlines of the scope and problems of certain branches of anthropology are also given: Physiological anthropology (Manouvrier), prehistoric anthropology (Capitan), zoölogical anthropology (Mahoudeau), ethnography (Zaborowski), ethnology (Hervé), anthropological geography (Schrader), sociology (Papillault). The chairs, past and present, occupied by the professors of the School are:

1. *Anthropology and Embryology* (Duval 1886-91. Dr Duval retained the title, though not lecturing on account of ill health, till his death in 1907).

2. *Anatomical Anthropology* (Broca 1876-80. After Broca's death occupied by Dr Duval, till the creation of the chair of Anthropology and Embryogeny in 1886, as professor of Zoological Anthropology, q. v. Lectures on anatomical anthropology were also given by Dr Papillault 1900-03).

3. *Biological Anthropology* (Topinard 1876-82; Laborde 1891-1903).

4. *General Anthropology* (Topinard 1882-90. Lectures on general anthropology were also given in 1900-05 by M. Rabaud).

5. *Linguistic Anthropology* (Hovelacque 1876-85. Since 1888 this chair, re-named Ethnography and Linguistics, has been occupied by A. Lefèvre).

6. *Pathological Anthropology* (Capitan 1896-99. This chair, which replaced the chair of Medical Geography in 1896, was abolished in 1899, when Dr Capitan became professor of prehistoric anthropology).

7. *Physiological Anthropology* (Manouvrier 1887 to the present time).

8. *Prehistoric Anthropology* (G. de Mortillet 1876-98; Capitan 1898 to the present time).

9. *Zoological Anthropology* (Duval 1880-86; Hervé 1888-91; Mahoudeau to the present time).

10. *Demography* (A. Bertillon 1876-83. Not continued after his death).

11. *Ethnography* (Zaborowski 1904 to the present time. From 1894 on M. Zaborowski delivered courses at intervals on this subject).

12. *Comparative Ethnography* (A. de Mortillet 1891-98. Changed to chair of Comparative Technology).

13. *Ethnography and Linguistics* (A. Lefèvre 1888-1904).

14. *Ethnology* (Dally 1876-85; Manouvrier 1885-88; Hervé 1891 to the present time).

15. *Geographical Anthropology* (Schrader 1895 to the present time. Previously, 1891-95, M. Schrader had been lecturing on the same topic).

16. *Medical Geography* (Bordier 1878-95. Became in 1896 the chair of Pathological Anthropology).

17. *Sociology* (Letourneau 1885-1902; vacant 1902-04; Papillault 1904 to the present time).

18. *Ethnographic Technology* (A. de Mortillet 1899 to the present time. From 1889 to 1898 called the chair of Comparative Ethnography).

Besides the regular instruction given by the professors, additional

and supplemental courses have been given from time to time by Drs Rabaud, Huguet, Verneau, and others; also lectures of a more or less general character by a number of specialists, of which a list is given on pages 103-104. The first number of the *Revue de l'Ecole d'Anthropologie de Paris*, now in its eighteenth volume, appeared January 15, 1891. Both in the matter of instruction and of scientific research this anniversary volume bears testimony to the fruitful labors of the little group of men who created the science of Anthropology in France.

ALEXANDER F. CHAMBERLAIN.

SOME NEW PUBLICATIONS

BOAS, FRANZ. *Anthropology*. New York: The Columbia University Press, 1908. 8°, 28 pp.

A lecture outlining the methods, aims, and hopes of anthropology, delivered at Columbia University in the series on Science, Philosophy, and Art, December 18, 1907.

CURTIS, EDWARD S. *The North American Indian. Being a Series of Volumes Picturing and Describing the Indians of the United States and Alaska. Written, Illustrated, and Published by Edward S. Curtis. Edited by Frederick Webb Hodge. Foreword by Theodore Roosevelt. Field Research Conducted under the Patronage of J. Pierpont Morgan. In Twenty Volumes. Volume I, 1907. 4°, xx, 161 pp., 79 pl., together with a large portfolio of 39 plates.*

The second volume of this sumptuous work has also appeared (1908), and it is proposed to publish the remainder of the series at the rate of three volumes per year, with a portfolio for each volume. Altogether the work will contain more than 2,200 photographic plates.

DURRETT, REUBEN T. *Traditions of the Earliest Visits of Foreigners to North America, the First Formed and First Inhabited of the Continents. Filson Club Publications, No. 23. Louisville: John P. Morton and Co., Printers, 1908. 4°, xxii, 179 p., 20 pl.*

Reviews the Atlantis, Phœnician, Chinese, Norse, Irish, and Madoc (Welsh) traditions bearing on the reputed ancient discovery of America, with some new material.

ELROD, M. J. *Pictured rocks. Indian writings on the rock cliffs of Flat-head lake, Montana. Bulletin University of Montana, No. 46; Biological Series, No. 14. Missoula, Mont., 1908. 8°, 10 pp., 9 pl., 4 figs.*

EMMONS, GEORGE T., and BOAS, FRANZ. *The Chilkat Blanket, by George T. Emmons, with Notes on the Blanket Designs, by Franz Boas. Memoirs Am. Mus. Nat. Hist., N. Y., 1907, III, pt. IV, p. 327-401, figs. 535-592, pl. XXIV-XXVII, 4°.*

FROBENIUS, LEO. *Im Schatten des Kongostaates. Bericht über den Verlauf der ersten Reisen der D. I. A. F. E. von 1904-1906, über deren*

Forschungen und Beobachtungen auf geographischem und kolonialwirtschaftlichem Gebiet. Berlin: Georg Reimer, 1907. Roy. 8°, xiv, 468 pp., 8 maps, 33 pl., 318 figs.

FYNN, A. J. The American Indian as a Product of Environment. With special Reference to the Pueblos. Boston: Little, Brown, and Co., 1907. 12°, (xi,) 275 p., 8 pl.

HAMY, E. T. Croyances et Pratiques Religieuses des Premiers Mexicains. Le Culte des Dieux Tlalques. Paris, 1907.

HOLMES, W. H. Biographical Memoir of Lewis Henry Morgan, 1818-1881. Read before the National Academy of Sciences, November 20, 1907. Washington, 1908. 8°, p. 219-239, port.

HOUGH, WALTER. Antiquities of the Upper Gila and Salt Rivers in Arizona and New Mexico. Bureau of American Ethnology, Bulletin 35. Washington: Government Printing Office, 1907. 8°, 96 pp., 11 pl., 51 figs.

JENKS, ALBERT ERNEST. Ba-long-long the Igorot Boy. Illustrated by Marian Deborah Seiders. Chicago: Row, Peterson & Co. [1907]. 12°, (viii,) 183 + 1 p., ill.

JONES, WILLIAM. Fox Texts. Publications of the American Ethnological Society. Edited by Franz Boas. Vol. 1. Leiden: Late E. J. Brill, 1907. 8°, vi, 383 pp.

The Texts, in Fox and English, consist of five historical tales, twelve miscellaneous myths and traditions, twelve parables, seventeen stories of the culture hero, and four prayers. "The plan of the translation was to follow the order of ideas expressed in the original as far as the idiom would permit, consequently the text can to a great extent be followed word for word and sentence for sentence in the translation."

MACDONALD, D. The Oceanic Languages: Their Grammatical Structure, Vocabulary and Origin. London: Henry Frowde, 1907. 12°, xv, 352 pp., map.

MARTIN, R. System der (Physischen) Anthropologie und Anthropologische Bibliographie. Braunschweig, 1907.

NORTH, A. W. The Mother of California. Being an Historical Sketch of the Little Known Land of Baja California, from the days of Cortez to the Present Time, Depicting the Ancient Missions therein Established (etc.), together with an Extensive Bibliography. San Francisco and New York: Paul Elder & Co., c. 1908. 8°, xi, 169 p., 32 pl., map. (\$2.00 net.)

To be reviewed.

PARKER, ARTHUR C. Excavations in an Erie Indian village and burial site at Ripley, Chautauqua county, N. Y. (N. Y. State Museum, Bull. 117, Albany, 1907.) 8°, pp. 457-554, 38 pl.

RELIGIONS: Ancient and Modern. London: Archibald Constable & Co. Ltd. 16°, 1 s. per vol.

A handy series, each volume devoted to a particular subject, as Animism, by Edward Clodd; Pantheism, by J. A. Picton; The Religions of Ancient China, by Professor Giles; The Religion of Ancient Greece, by Jane Harrison; Islam, by T. W. Arnold; Magic and Fetishism, by A. C. Haddon; The Religion of Ancient Egypt, by W. M. Flinders-Petrie, etc. About twenty-five volumes have appeared thus far.

ROTH, W. E. Burial Ceremonies and Disposal of the Dead. (From Records of the Australian Museum, vol. 6, pt. 5, July 18, 1907.)

SMITH, HARLAN I. Archaeology of the Gulf of Georgia and Puget Sound. Jesup North Pacific Expedition, II, pt. VI. Memoir of the American Museum of Natural History. Leiden and New York, 1907. 4°, pp. 301-441, figs. 101-198, pl. x-xii.

STREHLOW, CARL. Mythen, Sagen und Märchen des Aranda-Stammes in Zentral-Australien. Gesammelt von Carl Strehlow, Missionar in Hermannsburg, Süd-Australien. Bearbeitet von Moritz Freiherrn von Leonhardi. Frankfurt am Main: Joseph Baer & Co., 1907. 4°, 7 ll., 104 pp., 8 pl., figs. (Veröffentlichungen aus dem Städtischen Völker-Museum, Frankfurt am Main.) 15 M.

TANNER, HENRY S. Pre-historic man. The first settlers on the western continent Oriental Free Masons. [Long Beach, Cal., 1908.] 12°, 48 pp.

This pamphlet is worthless.

TORRES, L. M. Informe sobre la Exploración Arqueológica al Delta del Paraná y sur de Entre Ríos. Buenos Aires, 1907. (Artículo publicado en los Anales de la Sociedad Científica Argentina, tomo 64, página 129 y siguientes.)

WEBSTER, HUTTON. Primitive Secret Societies. A Study in Early Politics and Religion. New York: The Macmillan Co., 1908. 8°, xiii, 227 pp. - (\$2.00 net.)

The chapter titles are: The men's house; The puberty institution; The secret rites; The training of the novice; The power of the elders; Development of tribal societies; Functions of the tribal societies; Decline of tribal societies; The clan ceremonies; Magical fraternities; Diffusion of initiation ceremonies.

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 directly 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

Andrée (R.) Ethnologische Betrachtungen über Hockerbestattung. (A. f. Anthrop., Brunschwg., 1907, N. F., VI, 282-307, 2 pl., 17 figs.) Treats of the racial distribution of the "knee-elbow" disposition of the corpse in burial in America (Aleuts, Eskimo, N. W. Pacific coast, California, "mound-builders," Mohawks, Muskogee, Pimas, Mexico and C. America, funeral-urn region of S. America, — Tupi-Guarani in particular, Chaco, Peru, etc.), Europe (widespread in prehistoric times), Africa (Egyptians, Hottentots, Bantu tribes, and some W. African negroes), Asia (unknown in Islam and over a large part of the continent; known in several regions of Hindustan, Andaman ids., Malacca, Malay archipelago, Japan among poorer classes), Australia, Melanesia and Polynesia, etc. The various methods of disposing the body in this way (sitting, lying, orientation, position according to sex, social standing, etc.) are briefly considered. Among the reasons for the "knee-elbow" position are lack of space (e. g., in urns, etc.) and dislike to dig graves large enough (primitive "laziness"); it is the common position of rest and sleep among very many peoples, and so appropriate to the dead, especially where death is affirmed to sleep; the limbs are tied to the body to prevent the return of the dead, etc. Dr A. rejects the theory that this position for the dead was intended to imitate the

embryo in the womb of the mother, holding that a knowledge of the embryo-position was hardly possessed by man in the stone age, or by later savages.

Bartels (P.) Tuberkulose (Wirbelkaries) in der jüngeren Steinzeit. (Ibid., 243-255, 1 pl., 4 figs.) Describes a skeleton of the later stone age, found in a grave at Heidelberg in 1904, of which the spinal column in the region of the 3d to 6th vertebrae (of which a detailed account is given) show pathological changes due probably to tuberculosis. It is interesting to note that the individual had probably recovered from the disease — *Spondylitis tuberculosa*.

Bergt (W.) Dr Hermann Obst. (Jhrb. d. städt. Mus. f. Völkerk. zu Leipzig, 1906 [1907], I, 7-14, portr.) Sketch of life and scientific activities of Dr H. Obst (1837-1906), ethnologist and man of letters, physician and anatomist, founder and promoter of the Leipzig Museum and its director from 1883.

— Die Abteilung für vergleichende Länderkunde am städtischen Museum für Völkerkunde zu Leipzig. (Ibid., 31-43, 1 pl.) Treats of the origin and development of the section for comparative geography of the Leipzig Museum für Völkerkunde, the labors of Dr A. Stübel, etc.

Berkhan (O.) Zwei Fälle von Skaphocephalie. (A. f. Anthrop., Brunschwg., 1907, N. F., VI, 8-11, 4 figs.) Describes two cases of scaphocephaly — a 60 year old tailor in Braunschweig of unimpaired

intelligence, and a $3\frac{1}{4}$ year old boy, son of a workman and mentally debilitated. In both cases affections of the bony structure (rachitis) were noted, and Dr B. finds the causes of scaphocephaly in rachitic disease of the skull after birth, intracranial dropsy, and irregularities in the ossification of the sutures.

- C. (F.) Francisco Ferraz de Macedo. (Portugalia, Porto, 1907, II, 480, 1 fig.) Brief account of scientific activities, list of chief publications, etc., of Dr Ferraz de Macedo (1845-1907), the Portuguese anthropologist and criminologist. He had charge of the photo-anthropometric laboratory of the criminal court in Lisbon. He was the author of two works relating to America: *O Homem quaternario e as civilizações pré-históricas na America* (Lisboa, 1882) and *Ethnogenie brasileira* (Lisboa, 1886-87).

Curtin (R. G.) The medical superstitions of precious stones, including notes on the therapeutics of other stones. (Bull. Amer. Acad. Med., Phila., 1907, VII, repr. pp. 51.) After discussing generally superstitions relating to "unlucky stones," scarabs, flint knives, "blessed stones," amulets, charms, crystals, changes of color in stones, colors, etc., the author treats of the diamond (classed in some parts of Europe in the Middle Ages with the animals), amethyst (by the Greeks deemed the antidote for wine), topaz (cured lunacy and many other affections of mind and body), turquoise (emblem of success), carnelian, chrysolite (wanes and grows in its faculties with the moon), jet, amber (powerful against witchcraft and sorcery), rock crystal, agate ("almost a universal remedy"), bloodstone, onyx, jade (warded off kidney disease), sardonyx, emerald (older in history than the diamond; now tabooed for engagement rings), opal (one most prized of all stones; now recovering a lost popularity), cat's eyes, lapis lazuli, garnet, carbuncle, ruby (always a "lucky stone"), sapphire, pearls, coral (associated with children), zircon, ranolite, stanotite, spinel, moonstone, hyacinth, jasper, bezoar, toadstone, lodestone, eagle stone, alecoria, mineral stone, vegetable stone, magical stone, angelical stone, white and red stone, lapis porcinus, lapis armenus, philosopher's stone, snake-stone, mad-stone, hag-stone, elf-stones, birth-stones, the months and their gems, symbols of gems, etc. Dr C. is also the author of

Medical Fraternities (Phila., 1907, pp. 24), in which are briefly treated the Greek mysteries, Asclepiads, Pythagoras, Hippocrates, Essenes, Druids, Rosicrucians, Christians, Fraternity in Philadelphia (in 1819), and allied medical clubs, etc. Dr C. thinks that "Moses, Iemhotep, Solomon, Pythagoras, Hippocrates, and the Asclepiads were fellow-fraters of ours, having belonged to secret medical fraternities." Modern Greek-letter societies are essentially of American College origin, and Greek-letter medical fraternities are only a few years old. The author argues in favor of such societies.

Czekanowski (J.) Untersuchungen über das Verhältnis der Kopfmasse zu den Schädelmassen. (A. f. Anthropol., Brnschw., 1907, N. F., VI, 42-89, 4 figs.) Detailed discussion, with many tables, mathematical formulae, etc., of the relation of the measurements of the head to those of the skull—methods, statistical (biometric) ideas, relation between measurements on the living individual and on the skeleton, complicating factors (race, age, sex, nutrition), history of the problem, results of previous studies and of C.'s investigation of 65 male and 54 female corpses from the Zürich Pathological Institute. The general difference between the indices of head and skull is about 3 unities for the same individual. The soft parts reach their maximum thickness at the age of 40-50. Race (type), age, sex, and nutritional condition affect the soft parts as well as the relations between measurements of head and skull.

Emil Schmidt. [(A. f. Anthropol., Brnschw., 1907, N. F., VI, i-iv.) Sketch of life and scientific activities with appreciation of chief investigations, publications, etc.]

Entwicklung (Die) des Museums für Völkerkunde 1901 bis 1905. (Jhrb. d. städt. Mus. f. Völkerk. zu Leipzig, 1906 [1907], I, 15-30.) Describes the development of the Leipzig Ethnological Museum and its various departments from 1901-1905, with a list of collections (gift and purchase) arranged yearly by names of donors and sellers in alphabetic order. Among the specimens from America are: Arndt Eskimo collection of tools and photographs from S. Greenland; Dorenberg collection from Mexico; Kruse collection from Costa Rica; Meyer collection from Xingu region of Brazil;

- Mittelstätt Peruvian collection; Huckerby collection of Carib stone implements; Wie collection from the Caingua, Lengua, and Toba Indians of the Gran Chaco; Hesse collection from S. E. Missouri; Meyer collection from Ecuador; Sapper collection from the Kekchi Indians of Guatemala; Arndt Eskimo collection from Labrador; Zierold collection of modern objects from Mexico.
- Fischer (E.)** Jahresbericht der Literatur über Physische Anthropologie im Jahre 1905. (Sondausg. a. Schwalbe's Jahresbericht über die Fortschritte der Anatomie und Entwicklungsgeschichte, Jena, 1907, N. F., Bd. XI, Abt. 3.) Bibliography of 521 titles, with notes on the more important, of the literature of physical anthropology for 1905.
- Geddes (J.)** Importance de l'unité phonétique. (Congr. Int. d. Amér., xv^e Sess., Québec, 1906 [1907], II, 265-271.) Argues for a unitary phonetic system as a key to dictionary pronunciation, for recording the results of dialect research, and for the teaching of foreign languages. Summarizes efforts in this direction and advocates an international conference. See Hewitt (J. N. B.).
- Hamy (E. T.)** La collection anthropologique du Muséum National d'Histoire Naturelle. Leçon d'ouverture du cours d'Anthropologie faite le 11 avril, 1907. (L'Anthropologie, Paris, 1907, XVIII, 257-276.) Sketches the history of the anthropological collection of the National Museum of Natural History (the chair to which these specimens belong was created in 1635 for the study of surgery), the special collections now number some 49,000 objects, of which about 27,000 were added during the regime of Dr Hamy.
- Hewitt (J. N. B.)** Proposed international phonetic conference to adopt a universal alphabet. (Congr. Int. d. Amér., xv^e Sess., Québec, 1906 [1907], II, 273-276.) Argues that "a single alphabet ought to be adopted by the common consent of all the branches of science concerned." This could be provided by utilizing the variations current already in the forms of the Roman alphabet among the European nations and by a few additional modifications of these letters. To create such a world alphabet an international conference of delegates representing philological societies, the International Geographic Congress, Boards on Geographic Names, the great dictionaries, the International Phonetic Association and certain educational organizations is advocated. See Geddes (J.).
- Höfler (M.)** Gebärdhrote bei Sterbefällen. (A. f. Anthrop., Brunschwig, 1907, N. F., VI, 91-111, 6 fgs., 2 pl.) Treats of funeral bread in the forms of animals, etc. (hare, stag, dog, horse, cow, sheep, pig, fowl, eggs, dove, goose, fish), vegetables, etc. ("soul-corn," millet pap and substitutes for such); in the form of hairbraids, pretzels, rings, crowns and wreaths, etc. These cakes and loaves in forms of animals, etc., represent many relics of the symbols of the ancient cult of the dead. Interesting is the comparison (p. 109) between ancient Egypt and modern Bavaria.
- Kendall (H. G. O.)** The case for eoliths restated. (Man, Lond., 1907, VIII, 84-86.) Author argues that "although we have discovered the handiwork of human beings who may be described as pre-paleolithic, we have not yet got back to a time when some individuals could not make a flaked implement of paleolithic type." Nevertheless the ruder implements seem to have been trimmed by the hand of man.
- Kraus (A.)** Etnografia musicale. Apunti sulla musica dei popoli nordici. (A. p. l'Antrop., Firenze, 1907, XXXVII, 47-87 + 1-12, 3 pl.) Treats of music among the North American Indians, peoples of Siberia and Russia (Aryan and Anaryan), Scandinavians, Scotch, Irish, Gaels, and Celts. Texts and music of American Indian, Siberian songs, etc., are given; also Russian, Scandinavian, English folk-songs, etc. The predominant tonal systems, like the musical instruments, are assigned a Central Asian origin.
- Lattes (L.)** Asimmetrie cerebrale nei normali e nei delinquenti. (A. di Psichiatria, Torino, 1907, XXXVIII, 1-22, pl.) Gives results of examination of 100 right and left hemispheres in the Turin Anatomical Laboratory. The weight-differences between the two hemispheres are greater in criminals; the greatest difference found was 60 gr., larger than previously reported by Saraglia, Giacomini, etc.; 5 per cent. of the cases had equal weight for both hemispheres. Morphological asymmetries in the parietal and occipital lobes and the "Affenspalte" are noted.
- Lomer (G.)** Schädelmasse und Beruf. (Allg. Z. f. Psychiatrie, Berlin, 1907,

LXIV, 612-618.) Gives results of skull measurements of 210 sane and 382 psychopathic inmates of the hospital at Tapiau (East Prussia) compared with 28 criminals, and with special reference to the professions of the subjects (workmen, manual laborers, peasants, merchants, officials, students, and learned men without professional education). Dr L. found that the majority of the cranial measurements were greater with the mentally unsound than with the sane; that the smallest skull-measurements came from the lowest (workmen) social class; and that the skull-measurements of the sane peasants were strikingly large. The measurements of the mentally unsound manual laborers, merchants, officials in general were about the same. As to the cephalic index the learned class has the highest, the peasants the lowest, while the workmen approximate most of all to the dolichocephalic type.

Mannu (A.) Sul rudimenti della vertebra occipitale nel cranio umano. (A. d. Soc. Rom. di Antrop., 1907, XIII, 227-248, 13 figs.) Figures and describes 20 cases (out of 295 skulls) showing more or less traces of the presence of the primitive "occipital vertebra" in the human adult. The pharyngeal tubercle is present in 15 of these cases.

Möbius (P. J.) Ueber die Verschiedenheit männlicher und weiblicher Schädel. (A. f. Anthrop., Brnschw., 1907, N. F., VI, 1-7, 1 pl., 5 figs.) Treats particularly of the greater prominence of the upper portions of the occiput (a fact noted by Gall and confirmed by M.) in woman as compared with man. This peculiar form of the female occiput M. considers related "to the quality of woman in which she exceeds man." This occipital "boss" is the only *plus* in the female as compared with the male skull.

Piccinini (C.) Sul valore degli errori cromatici nell'infanzia. (A. p. l'Antrop., Firenze, 1907, XXXVII, 41-45.) Gives results of investigation of color-errors in 80 children. P. found that, contrary to the conclusions of Garbini, errors of this sort in children of 6 and 7 years are due in large part to lack of attention and do not demonstrate any principle.

Pittaluga (R.) Studi osteologici sulle scimmie antropomorfe. (A. d. Soc. Rom. di Antrop., 1907, XIII, 155-185, 3 figs.) Descriptions and measurements of 4 orang, 5 hylobates, 3 gorilla, and 4 chimpanzee

skulls, of which the last and those of 2 orangs belonged to young individuals. The occipital, temporal, parietal, and frontal bones are studied in detail. Previous data are resumé. The greatest capacity of the orangs is 422 ccm., of the gorillas 510 ccm., of the chimpanzee 403 ccm. The young are more brachycephalic than the adults. The hylobates differ from the other anthropomorphic apes in several respects. The occipital bone nearest that of man is that of the chimpanzee; the temporal bone of all these anthropomorphic apes departs least from that of man, and undergoes variations of little importance in passing from the infantile to the adult state; the parietal bones are notably reduced as compared with the corresponding human ones; two fundamental types of frontal bone occur, between which extremes lies that of the chimpanzee.

Reche (O.) Ueber den Nasenindex. (Korr.-Bl. d. D. Ges. f. Anthrop., Brnschw., 1907, XXXVIII, 49-52.) Argues that the old nasal index (length: breadth) is worthless as a means of distinguishing human from animal forms—a Viti Islander, e. g., has an index of 48 and a *Troglodytes niger* one of 48.1; a Tirolese one of 36.5 and a *Simia satyr* one of 56. Dr R. proposes two new nasal indices, which give better results for higher forms in the animal scale and for diverse races.

Révész (B.) Rassen und Geisteskrankheiten. Ein Beitrag zur Rassenpathologie. (A. f. Anthrop., Brnschw., 1907, N. F., VI, 180-187.) General discussion of mental affections among races and peoples and their prevalence: Japanese (hysteria and neurasthenia common; "possession"), Malays (*latak*, "running amuck"; Tagal *mali-mali*, Burmese *yaun*, Siberian *miryachit*, Ainu *imubacco*, etc.), Abyssinian and Algerian peoples (*lathrymus*), African negroes (alcoholism, "sleeping sickness"), American negroes (increase of mental diseases since emancipation; from his own observations in Brazil Dr R. confirms F. da Rocha's opinion of the resistance of the negro to alcohol), American Indians ("kayak-faint" of the Eskimo, probably akin to agoraphobia and not due to coffee drinking or tobacco-smoking), etc. Asia is preëminent for the occurrence of mental diseases among her races of man.

Rosen (F.) Darstellende Kunst im Kin-

- desalter der Völker. (Z. f. Angew. Psychol., Leipzig, 1907, 1, 93-118, 6 figs.) Compares particularly the art of Giotto and that of the child — art in the individual repeats in its essential traits the development of the race. The child begins with outline drawings; both child and art begin also with man, the human form; the highest object of art is the first object. Primitives and children relate and wish to be understood in their drawings. Another resemblance between early art and children's drawings is the way in which the time-problem is solved.
- Rouse (M. L.)** The pedigree of the nations. — II. (J. Trans. Vict. Inst., Lond., 1907, XXXIX, 83-101.) An *outré* attempt to ethnologize the lists of the members of one of the great families of Japhet as given in the tenth chapter of Genesis. Here are considered the descendants of Tiras. This paper belongs with Prof. John Campbell's Etruscan "interpretations" and Hittite theories.
- Schreiber (W.)** Ueber die Deviation der anatomischen von der geometrischen Medianebene des menschlichen Schädels, in bezug auf die Biaurikularlinie. (As f. Anthrop., Brunschwg., 1907, N. F., VI, 256-269, 6 figs.) Treats of deviation of the anatomical from the geometric median plane in the human skull in relation to the biauricular line, the methods and apparatus for investigation, etc. No skull is so symmetrical as to be without such deviation (left prevails). Such deviation does not follow race or skull form, and the cause is not purely morphological.
- Stefanini (G.)** Terre eduli esistenti nel Museo Nazionale d'Antropologia di Firenze. (A. p. l'Antrop., Firenze, 1907, XXXVII, 89-112.) Lists and describes 21 specimens (India 15, Sumatra 1, New Guinea 5) of edible earth in the Museum at Florence. This custom was known to the ancient Latins, and is in vogue today in parts of Treviso, Sardinia, etc. The literature of the subject is briefly résuméed, with references.
- Tovo (C.)** Sur le suture palatine transverse chez les criminels. (A. d. Psichiatria, Torino, 1907, XXXVIII, 464-468, 3 figs.) Gives results of examinations of 130 normal and 148 criminal skulls, all male, and chiefly from upper Italy; and of 98 normal female (from Piedmont) and 311 criminal female skulls (mostly from southern Italy). The "atavistic" (turn forward) type of the suture occurs in 71 per cent. of male and 62 per cent. of female criminals as compared with 58 per cent. and 49 per cent. among normal individuals. The "progressive" type is found in 12.2 per cent. and 15.2 per cent. of male and female criminals, and in 24.8 per cent. and 23 per cent. of normal individuals.
- Weldon (—)** The development of the religious faculty in man, apart from revelation. (J. Trans. Vict. Inst., Lond., 1907, XXXIX, 7-21.) Treats of sleep and dreams, illness, lunacy, death, and the religious ideas, etc., associated with them among uncivilized races. Primitive man spiritualizes and personifies Nature. Man "owes his religious interpretation of the natural world to the constitution of his own nature."

EUROPE

- Blake (T. P. U.)** Matrimonial customs in the west of Ireland. (Folk-lore, Lond., 1907, XVIII, 77-82.) Courtship non-existent; dowry; month before Lent favorite time for arranging marriages; midnight visit of intending groom to girl's parents, with friend and a bottle of whisky; marriage ceremony a second lavish entertainment; "dragging home" the newly married couple; festival on wedding evening.
- Brunšmid (J.)** Kameniti spomenici hrvatskoga muzeja u Zagrebu. (Vjes. hrvatsk. arh. Društva, Zagreb, 1907, N. S., IX, 81-184, 152 figs.) Describes and figures Nos. 190-342 of inscribed and curved stone-monuments (Roman) and fragments of such in the Croatian National Museum at Agram.
- Nekoliko našašca novaca na skupu u Hrvatskoj i Slavoniji, XXVI-XXVII. (Ibid., 210-240, 1 fig.) Describes several hundred Roman coins found in Croatia and Slavonia.
- Cartailhac (E.)** Les mains rouges et noires de la grotte de Gargas. (Man, Lond., 1907, VII, 4-6.) Discusses the black and red imprints of human hands (chiefly left) in the remarkable cavern of Gargas in the commune of Aventignan (Hautes-Pyrénées). C. believes that these hand imprints due to early prehistoric man "are identical in individual aspect, in grouping, and in technique," with those reported from Australia, and owe their origin in both cases to the same superstitious beliefs.
- et Breuil (L'Abbé) Les œuvres d'art de la collection de Vibraye au Muséum Na-

- tional. (L'Anthropologie, Paris, 1907, XVIII, 1-36, 1 pl., 16 figs.) Pages 1-9, by M. Cartailhac, treat of the life and works of the Marquis de Vibraye (1809-1878), whose collection was given to the Museum by his children in 1894, and pages 10-36, by the Abbé Breuil, of art objects (embossed sculptures including the ivory *Venus impudica*, bas-reliefs, etc., handles, "batons de commandement," etc., ornamented flat bones, ribs, etc., of bison, reindeer; zoomorphic and decorative engravings of a simple sort, including "the reindeer fight," etc.), in all 31 specimens of the art of the prehistoric people of Laugerie Basse, representing all the levels of the Magdalenian proper.
- Chamberlain** (A. F.) Recent views of the origin of the Greek temple. (Pop. Sci., Mo., N. Y., 1907, LXXI, 448-451.) Résumés and discusses the theories of Fuchs (cattle-house) and Sarasin (pile-dwelling), favoring the latter. See *American Anthropologist*, 1907, N. S., IX, 754.
- Cook** (A. B.) The European sky-god. VIII. The Celts. (Folk Lore, Lond., 1907, XVII, 24-53.) Discusses the old Highland poem on "The death of Fraoch," the tale of "The slothful Gillie" (ca. 1630), with their "magic tree," and cognate episodes in Chictien de Troyes *Yvain*, Hartmann von Aue's *Iwein*, and the tale of *The Lady of the Fountain* from the Welsh *Mabinogion*. According to C. "the Anglo-Norman tale underlying *Yvain* and *The Lady of the Fountain* may be regarded as the source of several episodes contained in the old French prose romance called the *Liure d'Arthur*." The tree episode goes back to "one common Celtic myth, which implies . . . a ritual practice strictly analogous to that of the *rex Nemorensis*." As the heroine of the French Arthurian romances was derived essentially from the ancient Celtic *fir*, their typical hero came likewise from "the Celtic aspirant to the position of woodland king." Thus the rule of the Arician priesthood lies at the basis of medieval chivalry.
- Cox** (M. R.) Cinderella. (Ibid., 191-208.) Cites résumés of numerous Scandinavian Cinderella stories not included in Miss C.'s *Cinderella* published in 1893. Also references to Cinderella variants in other languages published since 1893.
- Eyles** (F.) Notes and queries on Dr Kandall-Maciver's "Medieval Rhodesia." (Man, Lond., 1907, VII, 7-9.) Points out some difficulties in the way of Dr R.-M.'s view that these ruins were built by the native Africans, e. g. the Bantu. See also p. 43.
- Fortes** (J.) Duas joias archaicas. (Portugalia, Porto, 1907, II, 412-416, 3 figs.) Describes and discusses an ornamented gold collar from Valle da Maihado (Vouga) and a bracelet from Bairro. The first resembles Portuguese gold and silver collars or bracelets of the bronze age and those from Beachy Head (Sussex), etc., but for the present must be classed by itself. In form the Bairro bracelet is Iberic, pre-Roman, and very ancient.
- Fraschetto** (F.) Crani antichi del contado di Camerino III e II secolo av. Cristo. (A. d. Soc. Rom. di Antrop., 1907, XIII, 195-225, 7 figs.) Descriptions (Sergian) and measurements of 15 ancient skulls from Camerino belonging to the second or the third century A.C., and now in the Museum of the University of Bologna. One pathological skull was found. Of the others 10 are "Eurafrican," and 4 "Eurasian." The cephalic index ranges from 71 to 83, the capacity from 1171 to 1580. The chief anatomico-anthropological variations are described. These skulls represent a mixed Eurafrican (preponderating) and Eurasian population.
- Gasti** (G.) Sui disegni papillari. (Ibid., 187-194, 10 figs.) Gives results of examination of finger-prints of 100 foreigners (of whom 50 Germans), 100 normal individuals, and 100 criminals from central Italy, and distribution of the 9 types (exclusive of lacking or indecipherable) found. Dr G. found among the foreigners a greater prevalence of simple types, and in the Italian criminals a preponderance of the complicated types, the normal Italians showing more complication than the foreigners and less than the criminals.
- Giuffrida-Ruggeri** (V.) Materiale paleontologico della grotta del Castello di Termini Imerese. (Ibid., 143-154, 2 pl., 2 figs.) Describes and figures 37 stone implements (with references to a number of others), from the cavern of Castello di Termini Imerese, a pre-neolithic "station," probably Solutrean. This is indicated also by the fauna.
- Gray** (H. St. G.) An arrowhead of rare type from Banwell Camp, Somerset. (Man, Lond., 1907, VII, 56, 1 fig.)

Describes an arrowhead of the Cannington Park Camp type.

- Hamy** (E. T.) *Les premiers Gaulois*. II. (*L'Anthropologie*, Paris, 1907, XVIII, 127-139, 5 fgs.) Treats of human bones from the tumulus of Franche-Comté (Mont de Brégille, Bréry), and Lorraine (Forêt de Haye, Clayeures, and Contrexéville), with measurements of 10 skulls. Dr H. believes that the introduction of iron into western Europe is associated with the appearance of a dolichocephalic "new race." Certain regions at this time show a mixture of the old brachycephalic and new dolichocephalic types.

- Harrison** (M. C.) *Serpent procession at Cucullo*. (*Folk-Lore*, Lond., 1907, XVIII, 187-191, 2 pl.) Describes the procession of S. Domenico of Foligno, patron of Cucullo, a village in the Abruzzi mountains,—the feast of serpents, or of S. Domenico is held on the first Thursday in May and is visited by people from all south Italy. Serpents collected by the *serpanti*, or snake-men, are hung about the saint and coiled in his hand. Afterward the snakes are paid for and killed.

- Hoffiller** (V.) *O nekim starinama, naba-vljenim za narodni muzej godine 1906*. (Vjes. hrvatsk. arb. Društva, Zagreb, 1907, N. s., IX, 194-200, 4 fgs.) Describes bronze ornaments, etc., from Roman grave at Vinagori, plate with relief from Servian Mitrovice, two bronze Roman sauce-pans from Siska and Sutčina.

- *Donnerov oltar u crkvi sv. Katarine u Zagrebu*. (*Ibid.*, 241-245, 3 fgs.) Treats of the altar by G. R. Donner in the church of St Catharine at Agram.

- Klaić** (V.) *Topografske sitnice*. (*Ibid.*, 185-193.) Topographical notes on Kostroman (*Castra romana*), Gora Zaprtá (*Monts Claudius*), Bile vode (*Aquae gradatæ, Albæ aquæ*), Tituševina, Bezjačija, Hampovica.

- Lang** (A.) *Celtic sword blades*. (*Man*, Lond., 1907, VII, 3-4.) Discusses the passage in Polybius on the badness of Celtic iron, which S. Reinach has recently termed "a mere etiological myth," which idea L. does not accept.

- Lewis** (H. L.) *The flint supplies of the ancient Cornish*. (*Ibid.*, 21-22.) Points out, following F. Brent, that the flints were brought in bulk from certain places on the coast and worked up on the spots where they were found in large numbers.

- *Notes on some rude stone monuments in Glamorganshire*. (*Ibid.*, 37-39.) Describes briefly cromlechs and dolmens at St Nicholas, St Lythan's, etc., the last being extremely like "Kit Coty's House" in Kent. Resemblance to dolmens of India is also pointed out.

- *Modern Druids in Wales*. (*Ibid.*, 70-72.) Treats of the stones near Pontypridd and the books of Myfyr Morganwg and "Morien," with the theories embodied therein. Mr L. is of opinion that "whatever fragments of antique tradition may be in possession of the modern professors of Druidism, a knowledge of the original manner of using the British circles is not among them."

- Lones** (T. E.) *Folk-lore of Aristotle*. (*Folk-lore*, Lond., 1907, XVIII, 212-215.) Cites from Aristotle's *History of Animals* 10 items of folk-lore concerning animals and asks for modern Greek correspondences.

- Macdonald** (A.) *Some former customs of the royal parish of Crathie, Scotland*. (*Ibid.*, 84-86.) Treats briefly of circuit of fields at Hallowe'en with lighted torches to ensure fertility, burials (no more burials of unbaptized children after sunset), etc.

- M'Kenzie** (D.) *Children and wells*. (*Ibid.*, 253-282.) Points out the frequency of the belief that wells cure children's diseases (detailed examples from England), discusses use of wells for baptismal purposes, the ceremonial washing, baptism, lustration, etc., of children (widespread and ancient custom among civilized and uncivilized peoples), pre-Christian holy wells in Britain, child-lore of water (supposed origin of infants from sea, lake, river, marsh), birth-goddesses and water, baths for curing sterility and helping childbirth, water-spirits and children, child sacrifice to wells, rivers, etc., children as rain-makers. Dr M. thinks the idea of the connection between water and children (at first thought to be actual and physical, later mystic only) was based on the two facts that "children in the prenatal period do actually live in water" and "there is a natural association between fertility and water, seen plainly in the vegetable world." Since "the spirit of life of the well was also the spirit of life of children, then immersion in a well would renew the life of ailing and weakly children."

- Monteiro** (M.) *A loiça de Miranda do*

- Corvo. (Portugalia, Porto, 1907, II, 431-438, 6 fgs.) Treats of the pottery of Miranda do Corvo, in the district of Coimbra, a great ceramic center. The ceramic ware of this locality was noted, among rustic potteries, for its elegance of form, etc.
- Moser (L. K.) Ein Ausflug nach der Sandinsel Sansego. (Globus, Brnschw., 1907, XVI, 249-256, 6 fgs.) Describes a visit in April 1906 to Sansego, a sand-island of the Adriatic coast, its people, etc. — they are Croats and call the island Suiak. The sand of Sansego has been much written about, and the Abbot Portis, in 1771, connected it with the legend of the Argonauts.
- Peixoto (K.) Os cataventos. (Portugalia, Porto, 1907, II, 439-448, 46 fgs.) Interesting account of weather-vanes of numerous types in various regions of Portugal. In the fourteenth and fifteenth centuries weather-vanes became real ornaments. Some were originally heraldic emblems. Others resemble children's toys.
- Peixoto (R.) O traje serrano. Norte de Portugal. (Ibid., 360-389, 55 fgs.) Treats of dress and ornament among the mountaineers of northern Portugal (Serra da Amarella, Miranda, Marão, Serra de Arga, Gralheira, Montesinho, Pitões, Rebordãos, Montalegre, etc.) — clothes, cloaks, capes, caps, hats, shawls, shoes, etc. Some of the crude garbs correspond quite to the descriptions of Strabo. P. criticizes some of the illustrations in the *Album de Costumes Portuguezes* (Lisbon, 1888).
- Pinho (J.) Ethnographia Amarantina. II. A pesca. (Ibid., 418-459, 22 fgs.) Treats of fishing (implements, nets, traps, boats, etc.) in the region of Amarante, on the Rio Tamega, Portugal.
- Pocock (W. I.) Supplementary notes on cat's cradle and string-tricks. (Folk-Lore, Lond., 1907, XVIII, 25-329, 1 fg.) Records and describes four Rumanian string-tricks (*etelbetel*) — "cutting off the head," watch-guard, mouse alternative, button-hole, with comparative notes. In parts of E. Somerset "cat's cradle" is known as "the hammock," "the chair," etc.
- Rütimeyer (L.) Ueber Masken und Maskengebräuche im Lötschental, Kanton Wallis. (Globus, Brnschw., 1907, XCI, 201-204, 215-218, 1 pl., 1 fg.) Describes the masks of the Lötsch valley in the Swiss canton of Valais and their uses — a sort of *species relicta*, with comparative notes on similar objects in other parts of the globe. These masks are worn but once in the year (for three days in Lent) and then only by young bachelors, never by married men. A costume of sheep skins with cow-bells attached goes with the masks. R. thinks that these maskings go back to an age-class secret society. In Valais the barns and houses still represent the old pile-dwellings.
- dos Santos Rocha (A.) Estações pre-romanas da idade do ferro nas visinhanças da Figueira. (Portugalia, 1907, II, 301-356, 13 pl., 4 fgs.) Treats of the pre-Roman "stations" of the iron age in the neighborhood of Figueira, at Santa Olaya, where were discovered, besides mediæval ruins and a Luso-Roman "station," three pre-Roman "stations" belonging probably to the "savages" of this region mentioned by Strabo. Buildings, metal implements and instruments (iron was forged, but copper and bronze objects imported), pottery (both primitive local types and exotic wheel-made and others), objects of glass, bone, and stone, and kitchen refuse are described. At Ferrestello was discovered a necropolis, with inhumation. The culture represented by the implements, etc., is the second period of the European iron age, but with few and unimportant art objects. Some of the pottery of foreign aspect may have been made by Carthaginian immigrants or colonists. Some came from Spain.
- Schoetensack (O.) Ueber die Gleichzeitigkeit der menschlichen Niederlassung im Löss bei Munzingen unweit Freiburg i. B. und der dem Magdalenien zugehörigen paläolithischen Schicht von Thaingen und Schweizersbild bei Schaffhausen. (A. f. Anthrop., Brnschw., 1907, N. F., VI, 169-179, 3 pl., 1 fg.) Against Steinmann, the author holds that the culture-deposits of Munzingen are postglacial, not inter-glacial, and represent the Magdalenian (80 stone implements are figured), as do the "stations" of Thaingen and Schweizersbild. Steinmann's views are criticized in detail.
- Sergi (G.) I sepolcreti di Novilara, Pesaro. (A. d. Soc. Rom. di Antrop., 1907, XIII, 129-142, 9 fgs.) Description and measurements of 47 skulls from Molaroni and Servici, two burial places at Novilara. At the first and older location, the so-called "Pelagic" types

(*Ellipsoides pelagicus*), markedly dolichocephalic, is more common, though characteristic of both. S. believes that the remains found at Novilara indicate "a late Pelasgic or Mycenaean colony." This is supported by archeological data (stelae, ornaments, etc.). A second burial of another people has also occurred at Novilara. The inscriptions on the stelae seem to be in a non-Aryan tongue. The burial-places were investigated in 1893.

Severo (R.) Necropoles lusitano-romanas de inhumação. (Portugalia, Porto, 1907, II, 417-431, 22 figs.) Describes the Lusitanian-Roman burial-places of Bairral, Villa Verde, etc., and the objects found in the graves (clay vessels, *terra sigillata* dishes, glass vases, iron nails, pieces of coal, etc.).

— As arrecadas d'ouro de Castro de Laundos. (Ibid., 403-412, 1 pl., 7 figs.) Describes two gold ear-rings found in a clay vessel, with a piece of melted silver and copper at Castro de Laundos. Together with finds at Affife, etc., the Laundos ear-rings represent a prehistoric development of gold-working in N. E. Portugal, with barbaric technique.

— e **Cardoso (F.)** Note sobre os restos humanos da necropole de Ferrestello. (Ibid., 357-359.) Gives chief measurements of 2 crania, some long-bones, fragments, from the Luso-Roman "station" of Ferrestello, and compared with the human remains from the "station" of Desterro. The evidence indicates that the proto-historic population of the Mondego valley had approximately the same physical characters as the present inhabitants.

Siret (L.) A propos de poteries pseudo-myceniennes. (L'Anthropologie, Paris, 1907, XVIII, 277-299, 34 figs.) After noting proof of the relations of the eastern and western Mediterranean areas from the beginning of the neolithic period, on the disappearance of the neolithic "civilization" and its replacing by the bronze age, the Punic colonies (particularly Villaricos, the ancient Baria, its tombs, decorated pottery, fibulae, ornaments, ashes-urns, amulets, funeral stelae), the Visigothic necropolis of Almazaraque, etc., S. concludes that the so-called "pseudo-Mycenaean" pottery was introduced into Spain by the Carthaginians. The Spanish objects of this group form "a variety of the art spread all over the Mediterranean basin

at the period of Carthaginian and Greek commercial expansion." This view, S. thinks, is made better than the theory which attributes these ceramic objects in Spain to "a Mycenaean influence upon Iberian artists."

de Sousa (T. M.) Costumes e tradições agrícolas do Minho. I. Regimen pastoral dos povos da Serra do Gerrez. (Portugalia, Porto, 1907, II, 459-472.) Gives an account of the primitive government in vogue among the pastoral population of the Serra do Gerrez in Portugal.

Sturge (W. A.) Thin arrowheads. (Man, Lond., 1907, VII, 37.) Reports an arrow-head from Derbyshire corresponding almost exactly with that found near Bridgewater (Somerset) in shape, size, and thinness.

Tetzner (F.) Die Slowen. (Globus, Brunschwg., 1907, XCI, 265-270, 3 figs.) Treats of the Slovenians of Austria: History (Slovenian greeting, Ottocar), customs and usages (wedding, dances, etc.), house and arrangement, hospitality, amulets, folk-poetry and fabulous beings (German texts of 4 songs and a number of epitaphs are given). Valvasor in 1689 was the first to give details of Slovenian folk-lore; after him Hacquet in 1675. Anastasius Grün (1849) gave many of the songs literary form in German. The Slovenians have the "Wanderlust nach Amerika."

Wakefield (S. S.) Marriage customs of the southern Gallias. (Folk-Lore, Lond., 1907, XVIII, 319-325.) No wooing; marriage negotiations by relatives on both sides; power of paternal uncle; bride-price; visit of groom to bride's father; marriage ceremony; address to bride by father; fire-making; name; position of women (higher than with some E. African tribes); polygamy allowed (each wife has separate dwelling); divorce rare; duties of wife; girls under control of mother and corrected by her only; chastity inculcated.

Warren (S. H.) The flint supplies of the ancient Cornish. (Man, Lond., 1907, VII, 39-41.) Points out that "the raised beaches of Cornwall which yield the chalk flints are clearly Pleistocene, so that if the flint was brought by man it was brought by paleolithic and not by neolithic man," an "absurd and unreasonable theory." The presence of flint can better be explained by elevation-depression and water action.

Weston (J. L.) The grail and the rites

of Adonis. (Folk-Lore, Lond., 1907, xviii, 283-305.) Argues that the most characteristic features of the Bleheris Grail story (older than the version of Chrétien) "are a survival misunderstood and imperfectly remembered, of a form of nature worship, closely allied to, if not identical with, the rites of Adonis so exhaustively studied by Dr Frazer in *The Golden Bough*. The central motif of the *Gawain* grail-story, Miss W. thinks, is "a death and failure of vegetation caused by that death." The "mained King" is also explained by reference to the Adonis rites; likewise the wasting of the land, the "weeping maidens" ("women weeping for Tam-mur"). The grail itself "is no Christian relic, it acts simply as a food-providing talisman, coming and going without visible agency." The whole machinery of the story is, in fact, non-Christian.

Wieland (G. R.) Historic fossil cycads. (Amer. J. Sci., New Haven, 1908, n. s., xxv, 93-101.) Notes (p. 95) the use of a fossil *C. etrusca* found in the ancient ruins of the Etruscan village and necropolis (ca. 4000 years old) on the river Reno, and bearing evidences of having been used as a smoothing or sharpening stone. W. has suggested that "not a few of the fossil cycad trunks were gathered into towns or cities now in ruins or long since destroyed."

Zur Nephritfrage. (Globus, Brunschwg., 1907, xci, 225.) Brief résumé of Prof. Kalkowsky's important work on the "Geologie des Nephrits im Südlichen Ligurien," in the *Zschr. d. deutschen Geol. Ges.* for 1906. K. found nephrite in some 11 different places. Prof. K. has also recently published another article on "Der Nephrit des Bodensees" in *Isis* (Dresden) for 1906. Nephrite was used much by the lake-dwellers.

AFRICA

Abiose. Some West African customs (Folk-Lore, Lond., 1907, xviii, 86-88.) Notes on taking baby out of cradle, measuring time by cock-crow, dangers of whistling (forbidden in house, as it invites snakes, etc.), pregnant woman armed at night, hissing, etc., when one sees a flash of lightning, honoring the dead at family feasts, etc., passing younger children over corpse of parent.

Bertrand (L.) Notes et documents sur Rusicade. (Rec. d. Doc. et Mém. Soc.

Archéol. du Dép. de Constantine, 1906 [1907], xl, 71-82, 6 pl.) Gives account of recent excavations at the *Villa Sallustiana* (?) probably the villa of Sallust, the Roman historian and pro-consul of Numidia at Colonia Veneria Rusicade, etc. A marble fountain was discovered in 1840 at Rusicade. All along the shores of the Numidian gulf are remains of villas, public monuments and temples.

Carton (—) Cinquième annuaire d'épigraphie africaine, 1905-1906. (Ibid., 201-267.) Bibliographic index and list of African inscriptions (Latin, Greek, Punic, Libyan) published in 1905-1906. What may be an Etruscan inscription is noted at page 256.

Debruge (A.) La station quaternaire Ali-Bacha, à Bougie. (Ibid., 119-158, 10 pl., 7 figs.) Describes investigations at the quaternary cave of "Ali Bacha" and the "station" in its neighborhood, finds, etc., in 1902 and subsequently. The "shelter" yielded many flints, etc., of the Mousterian type, but no pottery, and but two specimens of polished bone and two shell beads. The cave itself was used for burial. In the first cave were found flints, bones, a human skeleton, etc.; in the second cave the skeleton of an infant; in the third cave a human skull, etc., and a number of copper objects, which the author considers "one of the earliest attempts to make coins." Elsewhere in the cave skull fragments, teeth, ochre, bits of red hematite, shells, animal bones, etc., also a polished stone hatchet. The human beings represented may have been of the Cro-Magnon type. See *Delisle* (F.).

Delisle (F.) Deuxième note sur les ossements humains préhistoriques de la (Grotte Ali Bacha. Ibid., 197-200.) Brief description of a male cranium, upper maxillary, lower maxillary. These remains resemble the Kabyle and also the Cro-Magnon type. No dental or alveolar prognathism occurs in the Ali-Bacha skull, which belongs to "the pure Berber type."

Fabry (H.) Aus dem Leben der Wapogoro. (Globus, Brunschwg., 1907, xci, 107-201, 218-224, 11 figs., map.) Treats of the Wapogoro, Bantu natives of the Upogoro Mts. in the Mahenge district of German E. Africa: Habitat, villages and dwellings (very primitive), food and nutrition (cooking entirely woman's work), ornamentation and head-dress,

mutilations (cicatization; no circumcision), clothing (uniform for both sexes), weapons and instruments, not numerous, hunting and fishing (passive hunting with traps and snares preferred), cattle-breeding and agriculture (a few goats, sheep, and fowl; maize cultivated), the *ngoma* or national dance, political and social relations, marriage and domestic life, birth-customs, religious ideas (*mahaga* = Siouan *wakanda*), medicine, time-reckoning, counting, etc. Increasing German influence is causing the Wapogoro to lose more and more their native peculiarities.

Fagnan (E.) *Ed. Nodjoun ez Zâhira. Extraits relatif au Maghreb.* (Rec. d. Doc. et Mém. Soc. Archéol. du Dép. de Constantine, 1906 [1907], XI, 269-382 and a to g.) Gives from the Ms. in the Bibliothèque Nationale of Paris numerous extracts referring to the Maghreb in *Ed. Nodjoun* of Djemâl ed-Din Abu'l-Mehâsin Yusuf ben Tangri-berdi, an Egyptian writer, of Turkish origin (d. 1469 A.D.).

Frobenius (L.) *Ethnologische Ergebnisse der ersten Reisen der Deutschen Inner-Afrikanischen Forschungs-Expedition.* (Z. f. Ethnol., Berlin, 1907, XXXIX, 311-333, 24 pp.) Gives the results of ethnologic researches in 1905 in the Kassai basin, etc. Houses, bows (maps of distribution; 3 types), wood-work, etc. The tribes concerned are Kioque, Bapenda, Bakuba, Baluba (Bechuana type), — the most adaptive and industrious of the Kassai peoples exceeded in intelligence only by the Kioque, — Bassongo-Mino related to the Batelela-Wakussu and really Mongo, etc. Dr F. considers that the styles of Benin bronzes, the Saharan embroidery, and the textile products and carvings of the Bakuba belong together, though their origin is yet unknown. The parallelism (p. 332) of three series of *motifs* (Benin, Bakuba, and Lombard) is interesting and suggestive, but F. does not commit himself.

Gaillard (—) *Étude sur les lacustres du Bas-Dahomey.* (L'Anthropologie, Paris, 1907, XVIII, 99-125, 1 pl., 7 figs.) Treats of the lake-dwellers of the region of Lake Nokoué in the marshy delta of the Ouémé, etc. Physical characters (lower limbs and gait modified by bent position), dress and ornament, habitations (pile-dwellings, canoe-shelters, etc.); some of these natives are lacustrine only in the rainy season), birth, marriage, death and

burial (children circumcized at about 6; polygamy in vogue; no tombs on piles, burial places always inland for each village), religion (the supreme fetish is Maô, — others are thunder, smallpox, rainbow, etc.; fetish-men a special caste), social organization (holiday every five days), trade (cowrie-money formerly), fishing, arts and industries, musical instruments, disease and mortality (smallpox worst; death-rate not above 40 to 50 per 3,000 at the village of Avansouri), etc., are discussed.

Gautier (E. F.) *Études d'ethnographie Saharienne.* (Ibid., 37-68, 315-332, 1 pl., 13 figs.) Gives the results of investigations made in 1904-1905 in the Sahara from South Oran to the Niger: The tombs (*ardjem*) of several types scattered all over the country traversed, particularly at Ain Sefra, Beni-Ounif, etc., their form, contents, etc., and other stone monuments; rock-sculptures (at Barrebi, Ain Memnouna, Hadjra Mek-touba, Foum Zeggag, Ouan Toura, Timissao, Ifor'ass); neolithic weapons and implements (from the "stations" of Ain Sefra, Zafrani, Tar'it, at Savoura, Touat, Ahnet, Tanerrouft, Adr'ar', Ifor'ass, Tilemsi, etc.). According to G., the evidence at hand indicates that in the neolithic age the Soudan (negro or negro-mittis) advanced to the gates of Algeria, as now the Berbers have made their way even to the Niger. The Berber occupancy (marked by *ardjem*, rock sculptures, and *tifin'ar* inscriptions) of this area is relatively recent. The neolithic people of the north were nomad Berbers, those of the Central Sahara agricultural negroes. By scratching the Tuareg Berber one easily finds the negro. Even as late as the period of the Roman conquest the Berbers and negroes of the Soudan held the relations indicated. The progressive desiccation of the Sahara (aided by the introduction of the camel, the Arab conquest, etc.), has opened it to the Berbers and closed it to the Soudanese. Much can be urged in favor of this view.

Grell (S.) Note sur une inscription de la région de Sétif. (Rec. d. Doc. et Mém. Soc. Archéol. du Dép. de Constantine, 1906 [1907], XI, 111-118.) Cites an inscription in which are mentioned the Bavarii, an African people living in eastern Mauretania at the close of the third century A. D.

Guénin (—) Nitoe archéologique sur

- une petite basilique sise à Rouis, Cercle de Tébessa. (Ibid., 159-165, 4 pl.) Describes basilica, altar, inscription, lamps, etc., found at Rouis and now in the Tébessa museum. The altar-stone dates from the time of Faustinus, bishop of Tébessa.
- Gutmann** (—) Die Fabelwesen in der Märchen der Wadschagga. (Globus, Brnshwg., 1907, xci, 239-243.) The largest cycle of legends among the Wajagga treat of a monster called *frinu* (a metamorphosed human being), who is not, however, without some kindly traits; another fabulous being resembles the unicorn of ancient European lore; a third is the huge snake, *Molyino*, and a fourth the giant cow *Käli*. Curious is *Nridosi*, or *Muridosi*, "the tree of the under-world." Several legends are given in brief form. Suaheli and Arab influences are noted.
- Hartland** (E. S.) Notes on some South African tribes. (Man, Lond., 1907, vii, 49-50, 1 pl., 2 figs.) Reproduces photographs of individuals of 11 Bantu tribes made in 1905 at Victoria Falls. Also notes on the museums at Pretoria and Bloemfontein, the Bushmen, etc.
- Heilgötter** (Die) der Ägypter und Griechen. (Globus, Brnshwg., 1907, xci, 272.) Résumé from *Nature*, March 21, 1907, of lecture by Dr R. Caton.
- Hinglais** (U.) Inscriptions inédites de la Province de Constantine pendant l'année 1906. (Rec. d. Doc. et Mém. Soc. Archéol. du Dép. de Constantine, 1906 [1907], xi, 387-433.) Records and publishes 494 Latin inscriptions from various parts (Constantine, Announa, Khemissa, M'daourouch, Guelma, etc.) of the province of Constantine, and two Lybico-Berber inscriptions (p. 428) from the ruins of the fountain at Heliopolis.
- Hull** (E.) "Researches in Egypt." By Professor W. M. Flinders Petrie. (J. Trans. Vict. Inst., Lond., 1907, xxxix, 23-40.) Critical review and résumé of Prof. Petrie's *Researches in Sinai* (1906), with comments by several other members.
- Jarricot** (J.) Sur une figurine scaphoïde de l'ancienne Égypte. (L'Anthropologie, Paris, 1907, xviii, 369-379, 4 figs.) Treats of a head of a statuette said to have been found at Mit-Rahineh in the ruins of ancient Memphis (probably, as M. Lortet thinks, of the Greco-Roman epoch). The cranial type is that known as annular scaphocephaly. The head is compared with the scaphocephalic skull of an Egyptian mummy. The figurine represents possibly a syphilitic subject.
- Johnson** (J. P.) Note on a stone implement from the Embabaa valley, South Africa. (Man, Lond., 1907, vii, 86-88, 1 fig.) Describes an implement of Solurio-Magdalenian type from the Embabaa valley, and of more recent date probably than those of the Acheulean type reported from the tin-bearing gravels of this stream.
- von Luschan** (F.) Ueber Boote aus Baumrinde. (Repr. from *Aus der Natur*, 1907, pp. 13.) Treats of boats of bark with special reference to a passage in an anonymous *Periplus maris Erythraei* dating from the last half of the first century A. D., relating to the island of Menuthias, i. e. Zanzibar, and to a bark-boat from the Mozambique coast, now in the Museum für Völkerkunde, of which a detailed description is given. The two great "bark boat areas" of the globe are America and Australia.
- Maclaud** (—) Notes anthropologiques sur les Diola de la Casamance. (L'Anthropologie, Paris, 1907, xviii, 69-98, 6 figs.) After treating briefly of the habitat, tribal divisions (the 10 sections number some 100,000 souls, the Diamate and the Diola of Fogny being the largest), history, etc., of the Diola or Felup peoples of the lower river Casamance, West Africa, Dr M. discusses physical characters—stature, color, hair, constitution, features, mutilations, etc.—and gives details of description and measurements of the skull and skeleton of Sialabé, a Diola chief (a characteristic negro), now in the Museum. The theory of the ethnic unity of the aborigines of West Africa, Dr M. thinks, though very probably true, remains to be proved.
- Mercier** (G.) Une inscription arabe de Constantin. (Rec. d. Doc. et Mém. Soc. Archéol. du Dép. de Constantine, 1906 [1907], xi, 383-386.) Records an inscription (in mecherghi characters) of 1793 A. D., from the Arab cemetery, in memory of Mohammed ben Reduan, whose father was cadi of Beï-el-Nal.
- de Morgan** (J.) Note sur l'incertitude de la chronologie relative des faits préhistoriques. (L'Anthropologie, Paris, 1907, xviii, 380-383, 1 fig.) Illustrates theoretically, on the basis of observations in North Africa, the difficulty of basing chronology correctly upon the

superpositions observable in the alluvia, in caverns, etc.

- Pallary (P.)** Le préhistorique Saharien. (Ibid., 140-145.) Résumés the data in the article of G. B. Flamand and Lieut. Col. Laquière on "Nouvelles recherches sur le préhistorique dans le Sahara et dans le Haut-pays oranais," in the *Revue africaine*, 1906, 204-243.

— Recherches paléolithologiques sur le littoral du Maroc en 1906. (Ibid., 301-314, 4 figs.) Notes on finds of prehistoric flint implements on the coast of Morocco, — Zaffarine Is. (flints rare), Médila, Tetuan (traces of "stations"), Centa (no "station" found), Tangier (nothing ancient), Larache (flints and quartzites abundant, some fine), Rabat (implements of Pleistocene epoch discovered here, for the first time in Morocco), Casablanca ("station" at Onck), Mazagan, Saffi (no characteristic "stations"), Mogador, etc. The oldest "station" on the Moroccan littoral belongs to the Pleistocene. Further exploration of the bed of the Oued-bou-Regreg at Rabat and the cliffs from Rabat to Mazagan is desirable.

- Passarge (S.)** Ophir und die Simbabwe-kultur. (Globus, Brnschw., 1907, XI, 229-232.) Opposes Randall-MacIver's theory of the Middle Ages origin of the Zimbabwe ruins and argues that "Ophir" was in Rhodesia and these famous remains are to be attributed to the extension to that region of Sabean culture.

- Robert (A.)** Documents romains divers découverts dans la commune mixte des Maadid. (Rec. d. Doc. et Mém. Soc. Archéol. du Dép. de Constantine, 1906 [1907], XI, 99-104, 2 figs.) Briefly describes Roman inscriptions, tiles, a Roman brooch, and a Lybian-Berber inscription (at Oulad-bou-Kera).

— Les cottes de mailles de la mosquée de Sid-el-Djoudi. (Ibid., 105-109, 1 pl.) Brief account of the six coats of mail said to have belonged to the marabout Sid-el-Djoudi, but probably originating from the warriors of the Duc de Beaufort, killed at the siege of Djidelli in 1664.

- Rouquette (O. A.)** La nécropole numide et romaine d'Ain-el-Hout, environs de Souk-Ahras, Province de Constantine, Algérie. (Ibid., 82-98, 7 pl.) Gives account of the exploration of the little Numidian-Roman burial-place of Ain-el-Hout and the discoveries made—graves (incineration, inhumation, holes in

rocks), inscription (one only), funerary objects of terra cotta (56 lamps, 2 urns, 5 dishes, 12 unguentaria), marble (2 tablets), glass (14 unguentaria), ivory (12 pins), bronze (lamp snuffers, fibulae, rings, bracelets, styli, mirrors, compass, lantern, etc.), iron (knife blade, nails), lead (a spoon or spatula), coins, etc. The necropolis probably belongs to the close of the first century, B. C., or to the first century A. D., and was used during the first two centuries A. D., covering a period from incineration with funerary object, to inhumation without them.

- Sabatier (—)** Musée de Tébessa. (Rec. d. Nat., ibid., 1-70.) Descriptive catalogue of the objects inside and outside the temple—pottery, tiles, painted terracotta statuary, mosaics, marble and stone statuary, sculpture, architecture, votive stelae, altars, etc., inscriptions, stone and marble objects, bronze and other metals, glass, etc., dedications, funeral monuments, boundary-stones, etc., funeral epigraphy, Christian and heathen antiquities, etc. More than 1000 objects are listed.

- Seton-Karr (H. W.)** On a maul from Upper Egypt. (Man, Lond., 1907, VII, 6, 1 fig.) Note on "a rare, if not unique" type, showing a peculiar style of hafting. It may possibly be modern, nothing being known of its exact provenience.

- Torday (E.) and Joyce (T. A.)** Note on the southern Bamba. (Ibid., 81-84, 1 pl., 2 figs.) Describes habitat, clothing, ornament, iron-smelting, social classes, pregnancy-customs, cross-bow (used only as a child's toy), religious ideas, etc. Boys are circumcized before they are a year old. No tattooing or cicatrization is in vogue. The northern tribe practise cannibalism.

- Vel (A.)** Excursion archéologique sur le territoire de la commune mixte d'Ain-M'lila. (Rec. d. Doc. et Mém. Soc. Archéol. du Dép. de Constantine, 1906 [1907], 167-186, 9 figs.) Describes figure of god Sylvanus, dedicatory inscriptions, mile-stones, ruins, megalithic graves (at Sila, some 2,000 in number), prehistoric station (grotto), hill-side caves, etc.

- Découverte d'une statue antique à Sedjar, ancienne Republica Submaritanorum. (Ibid., 187-195, 2 pl.) Treats of a male statue of the second century, representing perhaps Apuleius or Fronto, or some other notable person of this epoch.

ASIA

Baetz (E.) Zur Vor- und Urgeschichte Japans. (Z. f. Ethnol., Berlin, 1907, xxxix, 281-310, 15 figs.) After brief discussion of Ainu (more Caucasian than Mongolian) and other elements of population, Dr B. treats of shell-heaps and "stations" of the stone age, and the remains and implements, etc., there discovered (best ceramic objects, particularly clay human figures in N. Japan, — animal figures rare and small), bronze age (little known; at least 1,500 years old), iron age ("the dolmen period" — four types; *misasagi* or emperor-graves) and its remains (swords, bronze ornaments, pottery, clay figures, and images). The bronze-culture of Japan is found exclusively, and the iron-culture almost exclusively, west of a broad isthmus in E. lat. 136-137, north of which is found the neolithic culture (here but a single iron-culture "island" appears, i. e. about Tokyo). Five other dolmen-centers occur, two on the island of Kiushiu. The age of the dolmens, — they are *suigenerii*, — is probably from 400 B. C. to 700 A. D. The Ainu are the stone-age people of Japan; the bronze-age people of the S. W. expelled or subdued a more primitive stock; the iron-age people of the S. W. represent a conquering stock who ultimately took possession of the whole empire.

Bernstein (Der) in China. (Globus, Brnchw., 1907, xci, 224-225.) Résumé of the monograph of Dr B. Laufer in *Mem. Amer. Anthropol. Assoc.*, 1907, 1, 211-244.

Dalton (O. M.) Gandhara sculptures. (Man, Lond., 1907, vii, 69-70, 1 fig.) Brief description of a panel in gray schist showing evidence of Græco-Roman influence, particularly a *sellia curulis* upon which one of the figures sits.

Faber (E.) Contribution to the nomenclature of Chinese plants. (J. N. China Branch R. Asiatic Soc., Shanghai, 1907, xxxviii, 97-164.) Treats of the identification of the plant-names contained in a Chinese book published first in the seventeenth century and several times since. At pages 133-161 is given an alphabetical list of the scientific plant-names with their equivalents in Chinese. Based on MS. of Dr F., revised by Dr Barchet and the editor.

Keane (A. H.) The Cochin tribes and castes. (Man, Lond., 1907, vii, 41-42.) Based on the monographs published by

L. A. Krishna Iyer. The Kadir hill-men, K. thinks, present "distinct negroid features," and tend to support "the view now gaining ground that a negro or negrito element formed the substratum of the populations of Southern India, which is now almost exclusively inhabited by Dravidians and Kolarians from Central Asia."

Masterman (E. W. G.) Recent discoveries in Palestine in relation to the Bible. (J. Trans. Vict. Inst., Lond., 1907, xxxix, 218-254.) Treats of excavations at Tell el Hesi (on the edge of the Philistine plain) and other southern tells: Tell el Mutasellim, Tell el Ta'anuk, etc. Also (pp. 228-249) the religious beliefs and culture of the early inhabitants as revealed by the examination of tombs, high-places, etc. The pottery-types recognized are: 1. Prehistoric (earliest pottery of Gezer ca. 4000 B.C.); 2. Historic: 1) early Amorite or early pre-Israelite (ante 1600 B.C.); 2) later Amorite or late pre-Israelite (1600-1300 B.C.); 3) Phœnician influence (1300-100 B.C.); 4) later Phœnician (1000-800 B.C. and later); 5) Hellenic influence (800-600 B.C.); 6) later Hellenic; 7) Roman.

Morse (H. B.) Currency in China. (J. N. China Branch R. Asiatic Soc., Shanghai, 1907, xxxviii, 1-60, 8 pl.) Interesting account of "those systems which lead directly to the modern currency practice of the Empire" — copper currency, paper money, silver currency, etc.

Odling (C. W.) Orissa; a little known province of the Indian empire. (J. Trans. Vict. Inst., Lond., 1907, xxxix, 119-145.) Treats of language (Uriya, a distinct Aryan dialect with a special alphabet) and inscriptions, religion (holiness of Buddhists and then also of Hindus), Jaganath worship, population (occupations, industries, etc.), society and family life (few criminals of any caste), childhood (children universally happy). In Orissa still exist remains of the different culture-waves that have passed over India.

Louise (W. H. D.) Presidential address. (Folk-Lore, Lond., 1907, xviii, 12-23.) Treats of the *Pali Jataka Book*, birth-stories of Buddha, a collection, which seems to have existed even before the split of the northern and southern Buddhists and to have been esteemed sacred ca. 300 years after the death of Gautama

Buddha. The Jataka book has connections with *Æsop's Fables*, the *Gesta Romanorum*, and a good deal of modern Oriental folk-literature, as R. points out. There are also numerous allusions in the *Jataka* to superstitions, charms, incantations, etc.

Sarasin (F. v. P.) Die Steinzeit der Veddas. (Globus, Brunschwig, 1907, xci, 255-256.) Brief letter announcing the discovery in Nilgala, the center of the Vedda country, of chips, knives, arrowheads, scrapers, and other stone implements, proving fully a stone age for this interesting primitive people. In these caves and holes has thus been found the evidence of a stone age for the prehistoric Veddas.

Spoer (Mrs H. H.) The powers of evil in Jerusalem. (Folk-Lore, Lond., 1907, xviii, 54-76.) Treats of folk-lore of water and the bath, invocation of name of God against evil spirits, *jinn*s, Christian and Moslem bath-formulae, *jinn*s and their doings, sacrifice, annual (Moslem) pilgrimage to the shrine of Moses in the desert of Judea, use of "revenge image" for bewitching by Arabs, mandrake, high-places and standing stones, spirits and apparitions under trees, sacred trees, amulets, Jewish folk-lore concerning *jinn*s, divination, children's games, "Solomon's quarries," "tomb of Rachel," etc.

Turner (F. S.) Mencius. (J. Trans. Vict. Inst., Lond., 1907, xxxix, 255-269.) Outlines the teachings of the Chinese philosopher (d. 288 B.C.), particularly his doctrine of the original and inherent goodness of human nature.

White (G. E.) Survivals of primitive religion among the people of Asia Minor. (Ibid., 146-166, 2 pl.) In Asia Minor both Mohammedanism and Christianity carry with them much of old heathen belief. In the Oriental churches the Trinity is practically the Father, the Son, and the Virgin Mary—this due to the domination of belief in the mother principle in the divine nature. Sacrifice still holds a large place in the religion of the people. The lore of the saints (St George is venerated by Armenians, Greeks, and Turks alike; shrines once Mohammedan and now Christian, and vice-versa) is paralleled by lore of *jinn*s and evil spirits. Belief in the "evil eye" is general. Religious festivals on mountain-tops in summer are held by Armenians as well as Greeks, and there

are perceptible "traces of a primitive agricultural religious year." Luck and prognostics of all sorts are believed in.

INDONESIA, AUSTRALASIA, POLYNESIA

PEdge-artington (T. W.) Ingava, chief of Rubiana, Solomon islands, died 1906. (Man, Lond., 1907, vii, 22-23, 1 fg.) Describes briefly the funeral of the chief. Mourning lasts 107 days, though not observed so strictly as formerly.

— A New Zealand box, waka. (Ibid., 33, 1 pl., 1 fg.) Brief description of a *waka huiā*, or "feather box," of apparently great age and showing evidence of having been worked on with stone tools. Possibly used for storing greenstone meres, etc.

van Gennep (A.) Questions australiennes. (Ibid., 23-24.) Replies to a critique by A. Lang and discusses the primitive Australian theories of generation.

Howitt (A. W.) The native tribes of Southeast Australia. (Folk-Lore, Lond., 1907, xviii, 166-186.) Reply to and critique of previous article by Mr N. W. Thomas. Argues that the classificatory system is closely connected with *pirraura* marriage. The *tippan-malku* is "not a classificatory term, but defines the relation between two individuals." Dr H. considers that the *naa* relationship "restricted the range of an earlier and wider license to the present limits of the *pirraura* marriage." Preceding this wider license was a period of promiscuity. The "group mother" is also discussed. Dr Howitt died March 8, 1908.

Krämer (A.) Zur Tatauierung der Mentawai-Insulaner. (A. f. Anthrop., Brunschwig, 1907, N. F., vi, 36-41, 5 fgs.) Describes tattooing (breast, belly, back, leg, arm, hand, etc.), among the Mentawai islanders, gives native technical terms with interpretations, etc. The locality concerned is Pageh. K. compares his observations with those of Volz—he considers incorrect the statement of V. that these islanders are very dirty and have "flat feet."

Krause (F.) Zur Ethnographie der Insel Nissan. (Jhrb. d. städt. Mus. f. Völk. u. Leipzig, 1906 [1907], 1, 44-159, 126 fgs.) Based on the Uhlig collection from Nissan, an island in the Solomon group, now in the museum. Treats of name, geography, people (northernmost outlier of dark Melanesians; mixed with

Polynesians; probably from Buka originally), population (about 1,500), tribes (7 districts, a tribe in each), political relations (class-distinctions and slaves unknown), forms of greeting (few, due to lack of class-distinctions), law, war, family and marriage, disease, death, religion, "magic," tabu, secret societies (lacking), language (dialectic differences only), houses and villages, housebuilding, kitchen utensils, food and its preparation, tobacco and betel-nut, clothing and ornaments (combs; ear, forehead, neck, nose, breast ornaments; armlets, belts, hip-girdles; rain caps and cloaks), painting, tattooing, and artificial mutilations (ear and nose boring; no circumcision), weapons (pp. 98-124), fishing and other implements, boats and other means of transportation, manufactures (shell money; no native pottery; basketry, weaving, etc.), musical instruments (drums, flutes, signal shell), dance (and dance clubs), masks of two sorts, festivals (death, house-finishing, boat-building, harvest ceremonies), trade and commerce (several sorts of currency), etc. The island of Nissan is important as the northernmost representative of the culture-area of the N. W. Solomon is., and forms a notable link in the intercourse between these and Bismarck group.

Lang (A.) Australia: Prayer. (Man, Lond., 1907, vii, 67-69.) Reply to Marett (q. v.) regarding prayer among the Australian aborigines as reported by Mrs Langloh Parker.

— Conceptual totemism and exogamy. (Ibid., 88-90.) Discusses A. van Gennep's "conceptual" theory of totemism as set forth in his *Mythes et légendes d'Australie* (Paris, 1906).

Marett (R. R.) Australia: Prayer. (Ibid., 2-3.) Questions the validity of the cases of prayer among the native Australians cited by Mrs Langloh Parker. Suggests "coloring."

Schoepfel (F. A.) Kommerzielles Handbuch von Niederländisch-Indien. (Abh. d. K. K. Geogr. Ges. in Wien, 1907, vi, 2, 1-X, 1-301, 26 pl., 2 maps.) Pages 1-34 of this "Handbook of the Dutch Indies" treat of population, native and immigrant. No Negro tribe of pure type has yet been shown to exist in Dutch India,—such alleged "black" tribes turn out to be always very mixed. At pages 1-27 is an interesting general account of the aborigines, their divisions according to languages, religion and

civilization, character and life. Brief sections follow on the Arabs, Chinese, and Europeans. On pages 202-211 are considered the art industries of the natives—architecture (temple ruins of Java), textiles (in particular batik), leather work (figures for puppet-shows are a Javanese specialty), carving, etc. The native population of the Dutch Indies increased 1880-1885 10.9 per cent., 1885-1890, 11.4 per cent. and 1895-1900 the increase was 3,015,186. Of the alphabets in use the Javanese-Bali, Batak, Redjang-Lampung, Macassar-Buginese-Endeh-Bimanese, are of Hindu origin; Atjeh and Ternate, Arabic; and the Roman alphabet has been introduced among some tribes (p. 9). Hindu and Arab influences in religion have been important and "a large part of the culture of the natives of the Archipelago is of Hindu-Javanese origin." Dr S. does not take a high view of the character of the Malayan peoples. The Arabs of the Dutch Indies came chiefly from Hadramaut (E. Arabia) and brought no women with them, marrying Malay women of the country. The Chinese have not mingled so much with the natives, and the author considers a general mixture improbable. The European-Malay mixture (mostly illegitimate) has in many places already affected the physical and even the mental type of the European population (p. 29).

Seidel (H.) Die politische und wirtschaftliche Lage auf den Neuen Hebriden. (Globus, Brunschwg., 1907, xci, 261-264, 280-285, 5 figs.) Discusses the political and economic relations of the New Hebrides. Contains some notes on the aborigines (physical characters, houses, canoes), missionary efforts, etc.

Thomas (N. W.) Australian marriage customs. (Folk-Lore, Lond., 1907, xviii, 306-318.) Reply to and criticism of previous article by Dr A. W. Howitt. Discusses terminology, theory of social evolution, origin of marital terms, meaning of *maian-bra* and *kandri*, and area of *pirraura* custom.

Woodford (C. M.) Notes on Rennell island. (Ibid., 33-37, 4 figs.) Treats briefly of habitat, origin (probably castaways from the N. of Santa Cruz), clothing, weapons, tree-cutting, tattooing, etc. The numerals 1-10 and a few other words (p. 37) indicate the Polynesian origin of the language. The natives do not understand the use of tobacco, and

have now arrived at the "hoop-iron age."

AMERICA

Balfour (H.) Haida portrait-mask. (Man, Lond., 1907, VII, 1-2, 1 pl.) Describes a mask carved from a solid block of wood some 40 years ago by a Haida Indian, intended to be a portrait of his wife, and "a good likeness." This mask is now in the Pitt Rivers Museum, Oxford.

Batres (L.) Les fouilles opérées à Teotihuacan. (Congr. Int. d. Amér., XV^e Sess., Québec, 1906 [1907], II, 279-282.) Describes excavations begun in 1904 under auspices of Mexican government, Pyramid and Temple of the Sun in particular. The "city" appears to have been destroyed by fire. The excavations so far "have revealed magnificent archeological treasures."

Boas (F.) Notes on the Ponka Grammar. (Ibid., 317-337.) Outlines the grammar of the Ponka language of the Siouan stock, richer in morphology than the Dakota. Articles (inanimate, animate, and indefinite), demonstrative, personal, and possessive pronouns, the verb (instrumental, locative prefixes; pronominal forms, indirect object, particles, etc.), are cited and explained. In Ponka the irregularities of the verb are much greater than in Dakota, and the wealth of form in the article is phenomenal.

Breton (A.) The wall paintings at Chichen-Itza. (Ibid., 165-169.) Describes briefly paintings, method (evidence of two artists, one careful and methodical, the other more impetuous), colors (two reds, two blues, four greens, yellow, white, black, purplish tint, and various tones of flesh color), etc. Different race-types are represented. Scenes of sacrifice and of war are figured and some personages are painted life-size. To the *graffiti* of the ancient devotees have been added names of the local tourists. Carelessness of copyists has injured some of the paintings.

Bushnell (D. I., Jr.) Primitive salt-making in the Mississippi valley. (Man, Lond., 1907, VII, 17-21, 1 pl., 5 fgs.) Describes, with account of pottery, implements (stone, bone), animal remains, shells, etc. (probably refuse-heaps etc.), found in a very interesting and extensive salt-making site, near the village of Kimmiswick, Jefferson Co., Missouri. It had probably been abandoned before

the arrival of the French in Louisiana, and was similar to the site on Back river referred to by Du Pratz. At Kimmiswick no objects of European workmanship were found in either the superstratum or the stone-lined graves near by.

Chamberlain (A. F.) South American linguistic stocks. (Congr. Int. d. Amér., XV^e Sess., Québec, 1906 [1907], II, 187-204.) Points out need of map of distribution of S. American stocks (since completed by the author); discusses recent classifications. Gives list of 83 stocks with locations, etc.

Charency (Cte. de) Deux contes des Indiens Chantales. (Ibid., 307-316.) French text of two tales ("Fourteen forces, or the godson of the brother," and "Juan Clapi, or Ashes John" collected among the Chontal Indians of Oaxaca by F. E. Belmar. Both stories are perhaps more European than aboriginal, the second belonging in the Cinderella cycle, though very distantly.

De Cora (Angel) An effort to encourage Indian art. (Ibid., 205-209.) Argues against the "attempt to transform the Indians into a brown Caucasian within the space of five years or a little more." Criticizes exhibits of Indian school work done under dominance of white ideas; points out good results achieved when "young Indians recognized themselves as such and came into their own."

Dionne (N. E.) Les langues sauvages du Canada et l'oraison dominicale. (Ibid., 211-216.) Prints side by side and points out differences between the translations of the Lord's Prayer in the language of the Montagnais Indians by Father Le Jeune in 1634 and Father La Brosse in 1767. The differences "indicate rather a progress in the language than an inconsistency in the way of speaking."

Dixon (R. B.) Linguistic relationships within the Shasta-Achomawi stock. (Ibid., 255-263.) Treats of the lexical and grammatical differences among the various languages (Shasta, Achomawi, Atsugewi, New River, Konomihu, and Okwanutca, the last a dialect of Shasta) of this stock. In the Achomawi and Atsugewi 35 per cent. of the vocabulary are alike, the remaining two-thirds being radically distinct; and but 15 per cent. of the Shasta vocabulary is represented in the Achomawi-Atsugewi. The New River agrees with Achomawi-Atsugewi in ca. 8 per cent., and with Shasta in

ca. 16 per cent. The limit of difference is reached in the Konomihu. In this stock striking grammatical variations also occur, particularly in the pronouns and verbal forms. According to Dr D., "the great linguistic and considerable cultural complexity of this whole California-Oregon region is due to progressive differentiation, rather than to the crowding into this restricted area of remnants of originally discrete stocks. See *Amer. Anthropol.*, 1905, N. S., VII, 213-217.

Evans (O. H.) On pottery fragments found at Taltal, northern Chile. (*Man*, Lond., 1907, VII, 65-66, 1 pl.) From graves excavated in the raised beaches of Taltal three classes of pottery have been taken, all of which were probably of local origin—Peruvian black ware is wanting and there is "a total absence of any attempt at molded ornament." The ornamentation is painted on outside and inside with black pigment, the commonest design being the freehand spiral. On two fragments the guanaco is pictured.

Gagnon (A.) Origine de la civilisation de l'Amérique précolombienne. (*Cong. Int. d. Amér.*, XV^e Sess., Québec, 1906 [1907], II, 171-178.) From analogies of architecture, ornamentation, social organization, etc., the author attributes the pre-Columbian civilization to the "Cushites" of S. W. Asia, Chaldaea, and Assyria, who reached the New World by way of S. E. Asia, Malaysia, Polynesia.

Jetté (J.) On the language of the Ten'a. (*Man*, Lond., 1907, VII, 51-56.) Treats of phonetics (alphabet and sounds, laws of euphony), grammatical generalities, etc., of the Ten'a, an Athapaskan language spoken in four dialects in the Anvik-Tanana region of Alaska, 62°-67° N. lat., 149°-160° W. long.

Kunz (G. F.) New observations on the occurrences of precious stones of archeological interest in America. (*Congr. Int. d. Amér.* XV^e Sess., Québec, 1906 [1907], II, 289-305.) Notes on turquoise (in southern Mexico chalchihuitl is jade) and its occurrence in N. and S. America, nephrite, jade and jadeite, beryl (from an Indian grave in N. Carolina), chalcedony, obsidian (New Mexican locality 60 miles from the well-known one at Pachuca), amber (from Santo Domingo; natives said to have burned it in their religious rites), catlinite, etc.

Lehmann (W.) Altmexikanische Mo-

saiken im Kgl. Museum für Völkerkunde zu Berlin. (*Ibid.*, 339-349, 4 figs.) Describes a double-jaguar from the collection of A. v. Humboldt and a jaguar head from the Bevern collection, both now in the Royal Ethnological Museum, Berlin. Of such ancient Mexican and Central American mosaics but 23 exist in European museums. The Berlin Museum possesses also a mosaic skull-mask.

— *Ergebnisse und Aufgaben der mexikanischen Forschung.* (A. f. Anthrop., Brunschwg., 1907, N. F., VI, 113-168, 2 pl.) Résumés results and problems of Mexican anthropology, philology, and ethnology, with full bibliographical references and estimates of value of various authorities. L. believes man to be so old in America as to be practically autochthonous (there has been no contact between the Old World and the New from the earliest times). The physical anthropology of the Mexican Indians is in a very unsatisfactory state (the "American race" was unitary only at the beginning). Among the languages of Mexico of independent stocks are Otomi (the Otomis are thought by some to represent the real aborigines of the country), Totonaco, Tarasco, Mixteco-Zapoteco, Mixe-Zoque, Huave, etc. The Huasteco is perhaps the oldest member of the Mayan family. Some of the tribes in ancient Mexico belonged with the Mayan culture-group. At pages 149-166 Dr L. discusses climate, material culture, sociology, intellectual culture, etc. He sees in the "Toltecs" a Nahua people, from whom both Mexican and Mayan peoples received their culture.

Lejeal (L.) / **Boman** (E.) La question Calchaquie. (*Cong. Int. d. Amér.*, XV^e Sess., Québec, 1906 [1907], II, 179-186.) Treats of the historical and ethnic geography of the Calchaquis, the monuments, ethnographic material, etc., of the Calchaqui region, the history and linguistics of the Ando-Peruvian area, etc. The conclusions reached are that the Calchaqui culture is really a Diaguito culture; that the Diaguito culture in almost all its details belongs archeologically with the great pre-Columbian civilization of Peru; that no distinct "Calchaqui race" existed, and no relationship of the so-called "Calchaquis" to the Fuebios Indians of N. America can be maintained.

Lemoine (Père) Le génie de la langue

Algonquine. (Ibid., 225-242.) Outlines the grammar (noun, adjective, pronoun, verb, and verbal particles) of the Algonkin, spoken at the Lake of the Two Mountains, Maniwaki, etc., at lakes Barrière, Victoria, Temiskaming, and Abitibi; at Grassy Lake, Golden Lake, and at Mattawa. According to Father L. the elementary words of Algonkin are as short as those of French; the language is really neither monosyllabic nor sesquipedalian. This language was studied earlier by Cuq.

Mavor (J.) The Eskimo of the Mackenzie river. (Univ. Mo., Toronto, 1908, VIII, 142-145.) Notes on the Kogmolik and other Eskimo of the coast east and west of the Mackenzie, based on letters of V. Stefánsson, name, type, etc. Their numbers have seriously diminished. The Nunatama are "inland, deer-hunting Eskimo."

Ostermann (L.) The Navaho noun. (Congr. Int. d. Amér., XV^e Sess., Québec, 1906 [1907], II, 243-254.) Treats of Navaho nouns from the etymological standpoint (4 classes: radical, verbal, composite, foreign, — radical nouns are of one or more syllables), grammatically (no grammatical gender; but larger, robust things are often styled male; and weaker, gentler, etc., female; personifications rare; no special forms for plural, — terms of relationship, however, seem to have separate forms; declension; augmentation and diminution expressed by adding adjectives; homonyms and synonyms scarce; pronouns of address), etc. Certain Navaho nouns in particular are also discussed: terms for *wagon*, *locomotive*, *nickel*, *dimr*, *iron*, *house*, *paper*, etc.

Rivet (—) Les Indiens Jibaros. Étude géographique, historique et ethnographique. (L'Anthropologie, Paris, 1907, XVIII, 333-368, 9 figs.) First part of a valuable monograph on the Jivaro Indians of Ecuador, with abundant bibliographical references, map, etc. The name (Xivaro, Xibaro in 1651, with many varieties since), habitat (region of rivers Santiago, Morona, and Pastaza), history and mission efforts, geographical distribution (list of numerous tribes), population (ca. 20,000), physical characters (stature below average, skull sub-brachycephalic; body-painting), material life (dress simple; 3 sorts of "crowns"; ear-rings, necklaces, belts, etc.), are discussed. Dr R.'s

study is a welcome addition to the literature of the Jivaran stock.

Sapper (K.) Grenada. (Globus, Brnschw., 1907, XCI, 233-239, 4 figs.) Contains a few notes on the negro population.

— Choles und Chorties. (Congr. Int. d. Amér. XV^e Sess., Québec, 1906 [1907], II, 423-438, map.) Treats of the past distribution of the Chol and Chorti language. The speakers of Chol and Chorti in Central America now number 20,000, the related Chisequeños, Lanquineros, and Cahaboneros 10,000. Dr S. thinks that the Lacandonnes and Acalones of the 16th and 17th centuries also spoke Chol. The Chol-speaking Lacandonnes of eastern Chiapas have had their place taken by Mayas bearing the name of Lacandonnes. The Choles of British Honduras are completely extinct.

— Vocabulary in Chorti, Chol and Pocoman von Jilotepeque. (Ibid., 440-465.) Vocabulary of some 270 words in parallel columns, numerals, pronouns, conjugation, and sentences in Chorti and Pocoman. The closeness of the Chol of Chiapas and the Chorti of eastern Guatemala is seen from these vocabularies. They are both dialects of Maya, as is Pocoman.

Schmidt (M.) Besondere Geflechtsart der Indianer am Ucayalgebiet. (A. f. Anthrop., Brnschw., 1907, N. F., VI, 270-281, 2 pl., 11 figs.) Treats of the weaving-art of the Conibo and Cocama Indians of the Ucayali region of Peru, as exemplified in their cotton arm-bands, bow-covers, ponchos, etc.; also painted and incised ornaments on pottery, etc. The weaving apparatus is also described and figured.

Seler (E.) Die Wandskulpturen im Tempel des Pulquegottes von Tepoztlán. (Congr. Int. d. Amér., XV^e Sess., Québec, 1906 [1907], II, 351-379, 8 figs.) Treats of the pulque-god Tepoztecatl, his temple at Tepoztlán (a small but typical ancient Mexican provincial sanctuary), and the numerous wall-sculptures with which it was adorned — reliefs, symbols, hieroglyphs, etc. According to Dr S. the pulque deities are moon deities. The 18 symbols represent the 18 festivals of the years, a north and a south series.

— Die Monumente von Huilocintla im Canton Tuxpan, des Staates Vera Cruz. (Ibid., 381-389, 3 figs.) Describes two reliefs from Huilocintla, one of which is

now at the Colegio Preparatorio of Jalapa, the other (its counterpart) in the Hacienda San Isidro, Tuxpan. From study of the figures and symbols Dr S. concludes that the god represented (*see* *ecceitoli*, "one jaguar") is either Quetzalcoatl himself or one of his incarnations.

— Einige fein bemalte alte Thongefässe der Dr Sologuren'schen Sammlung aus Nochistlan und Cuicatlan im Staate Oaxaca. (Ibid., 391-403, 6 figs.) Treats of some finely colored and painted figures on old clay vessels from Nochistlan and Cuicatlan belonging to the Sologuren collection of Zapotec antiquities. One vessel has figures of the gods Quetzalcoatl and Tonacatecutli, the one associated with a temple, the other with a mountain (the mythical home of the tribes). Another vessel has heads of the death, fire, and sun gods, representing the four cardinal directions. The vessels from Cuicatlan present another and ruder type of art, and have a band of ornamentation of human faces, borrowed apparently from textile or weaving patterns. These vessels deserve careful study.

— Bericht über die chemische und physikalische Untersuchung einer Mexikanischen Kupferaxe. (Ibid., 405-412, 4 figs.) Gives details of the chemical and physical examination of an old Mexican copper axe from the neighborhood of Tlaxiaco (Mixteca Alta). The almost pure copper of this axe appears to have been cast, and in part worked when cold. No traces of tin were found; silver was present .13 per cent. and zinc .17 per cent. Iron was not known to the ancient Mexicans.

— Studien in den Ruinen von Yucatan. (Ibid., 413-422, 6 figs.) Treats of the Casa del Adivino, Casa de Monjas, Casa de Tortugas, Casa del Gobernador, etc., at Uxmal; the Casa de las Monjas, Castillo, Caracol, etc., at Chich'en itza. The Caracol type is known elsewhere only from Mayapan. Dr S. thinks that in Chich'en itza a people of Mexican stock was long dominant—a fact indicated by the character of the figures of the monuments.

Tozzer (A. M.) Survivals of ancient forms of culture among the Mayas of Yucatan and the Lacandonones of Chiapas. (Ibid., 283-288.) The Lacandonones "make pilgrimages to the ruins in their midst, and carry with them their incense-burners, in which they offer incense and gifts of food and drink to the gods of the race who are supposed to inhabit the ruins." The "renewal of the incense burners" is a clear survival of a rite mentioned by Landa, even in minor details. Piercing the ear with a stone knife, placing the body over the burning incense are still practised. The names and attributes of many of the old gods survive. So far, however, these people furnish no one capable of giving aid in deciphering the hieroglyphs. This subject is treated further by Dr T. in his monograph on the Mayas and Lacandonones.

Trebtsch (R.) Die "blauen Geburtsflecke" bei den Eskimos in Westgrönland. (A. f. Anthrop., Brunschwig, 1907, N. F., VI, 237-242, 7 figs.) Describes 14 cases (Godthaab 8, Egedesminde 3, Upernivik 3) of "Mongolian spots," observed by him in the summer of 1906 among the Eskimo of West Greenland. Of these 5 were girls, and 2 adult men of pure stock; of the children 6 were of mixed race. Dr T. confirms the occurrence of these spots in infants, older children, and even adults, in the *regio sacralis* and adjacent parts. They appear earlier in the lighter-pigmented than in the darker Eskimo. Dr T. inclines to look on them as a race mark.

Verneau (R.) Les nouveaux documents anthropologiques rapportés de l'Équateur par le Dr Rivet. (L'Anthropologie, Paris, 1907, XVIII, 146-155, 26 figs.) Notes on the human remains (350 skulls of 3 types; 150 femurs), numerous stone and bronze objects (axes, clubs, etc.), clay and lava vessels, pottery, ornaments, etc., brought by Dr Rivet from the Andean region of Ecuador. Interesting are an anthropomorphic terra-cotta vase from the Napo, a stone idol suggestive of the sculptures of the French dolmens, etc.

FOREIGN NOTES¹

EXPLORATION OF A KELTIC CEMETERY NEAR BERN, SWITZERLAND

During the early part of 1907, a Keltic burying ground, discovered near the village of Münsingen in the valley of the Aare, midway between Bern and Thun, was explored by Dr. J. Wiedmer-Stern, director of the Historisches Museum of Bern, in which museum the material recovered has been deposited. The group included 217 graves, situated on a level area a short distance east of the Aare.

The excavations for the burials had been carried down through the superstratum of earth to the gravel, which in some places was 2.5 meters below the present surface. In every case the bodies had been placed upon the gravel. The oldest burials belonged to the beginning of La Tene I (approximately 400 B. C.), while the most recent date from the close of La Tene II, consequently they represent a period of about two centuries.

No cremated burials occurred on the site; inhumation alone was practised, but fire-beds and ashes were discovered on the surface between the graves of the earliest (La Tene I a) period, and this is regarded as evidence of the survival of the custom which was probably practised at an earlier time. In many of the graves of that period small deposits of ashes and charcoal were found. Similar deposits occurred in burials near Spiez, on the Lake of Thun, and also in a cemetery at Vevey on the Lake of Geneva.² These were probably made in connection with some religious rites performed at the time of burial.

Throughout the cemetery at Münsingen graves were found which contained traces of wooden coffins in which the bodies had first been enclosed. These were formed of comparatively thin boards, the top, bottom, sides, and ends being distinct pieces. All fibrous matter had disappeared, but the thin strata of brown mold were distinctly visible in the sandy soil. Large pebbles had often been placed around the wooden coffins.

Two trepanned skulls were found in La Tene I graves. Evidence of

¹ Students in America as well as abroad are earnestly requested to send brief notes of new researches in any field of Anthropology beyond the limits of the United States, for publication in these pages.

² A. Naef, *Le Cimetière Gallo-Helvète de Vevey, Extraits du Journal de Fouilles*, 1898, p. 34.

animal worship occurred in some of the earlier burials. In eleven graves (all La Tene I) bones of the boar were found, and bones of calves were discovered in other graves of the same period; but no animal bones occurred with any of the later burials.

It has been observed by Dr Wiedmer that the population was not homogeneous, as both brachycephalic and dolichocephalic skeletons were found throughout the cemetery. It was also observed, during the examination, that in the earlier burials the richness of the material in the graves of both classes was equal; but at about the close of the first and during the succeeding period the dolichocephalic burials contained the more highly valued objects. This makes it appear evident that the dolichocephalic had gradually become the dominant class in the valley.

The objects found in the burials were for the greater part personal ornaments, including bracelets of bronze, glass, and lignite; anklets of bronze, occurring singly and in pairs; many fibulæ, beginning with the Certosa type and others showing the development through the first two La Tene periods; and numerous finger-rings of gold, silver, and bronze.

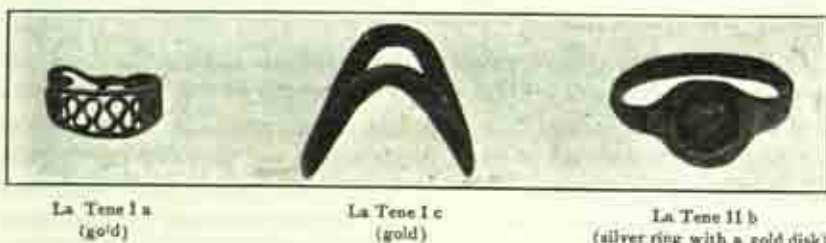


FIG. 42. — Finger-rings from graves at Münsingen. (Full size.)

In addition to these were many necklaces of amber and glass beads. Excellent examples of red and white enamel were found. Weapons were rarely met with, and only two earthen vessels were discovered. No coins were found. However, no site previously explored has revealed so complete a series of objects illustrating the development of the first two periods of the La Tene culture as has the cemetery at Münsingen. As already mentioned, the last graves at this place dated from the close of La Tene II, or about the time of the beginning of the settlement near Marin (La Tene), at the northern end of the Lake of Neuchâtel. There may not have been any connection between the people of the two settlements; but considering the two sites together, we have material illustrating the entire La Tene culture, beginning with the Certosa and La Tene Ia, fibulæ discovered at Münsingen and closing with La Tene III, and objects of Roman origin found at the station on the Lake of Neuchâtel.

D. I. BUSHNELL JR.

DISCOVERY OF PALEOLITHIC IMPLEMENTS ON THE ISLAND OF CAPRI

About two years ago, while an excavation was being made for a cellar on the island of Capri, near Naples, a stratum of red cave earth was encountered at a depth of about three meters. Scattered over this surface were a number—probably fifty—crude Chellean implements, some of unusual size. The majority of the specimens were deposited in the University of Naples, while others were sent to the Kircheriana Museum at Rome.

The discovery is of special interest, as Chellean implements have been found in only one other locality in Italy, namely, in the Province of Chieti. Near the village of Caramanico, in that province, many implements have been found at various times, in the valley of a small stream that flows into the Adriatic. Somewhat similar implements made of a red flint or jasper have been found on the surface near Perugia and Lake Trasimeno, but they probably belong to a much later period.

D. I. BUSHNELL, JR

THE GLASTONBURY LAKE VILLAGE

The examination of the site of the ancient lake village near Glastonbury, Somersetshire, which has been in progress during the last sixteen years, was practically concluded last summer. During the course of the exploration of the village ninety dwelling sites were discovered, and from many of them interesting objects of stone, bronze, iron, bone, amber, glass, and pottery were recovered. Among the bronze objects found in 1907 were several coiled finger-rings and a small La Tene II fibula similar to specimens found in the cemetery at Münsingen near Bern, Switzerland. The systematic examination of this village site may well be considered one of the most important undertakings in archeology ever accomplished in Great Britain, and a complete and exhaustive report of the entire exploration would prove of great interest. A detailed account of last season's work appears in volume LIII of the publications of the Somersetshire Archaeological and Natural History Society, Taunton, 1908.

D. I. BUSHNELL, JR

ANTHROPOLOGIC MISCELLANEA

A Diminutive Ceremonial Quiver from California. — Among the annual ceremonies known to have been held by at least the Indian tribes living along the Klamath and Trinity rivers and on Redwood creek in northern California, there was one commonly called the "Jumping dance." It was celebrated near the time of the autumnal equinox, and its object, through the prayers of the tribal priests, was to forestall any disease or calamity during the approaching winter. Prominent amongst the priestly regalia was a cylindrical object of basketry, carried in the right hand and waved aloft in rhythm to the chant and the dance steps. This object was constructed of a rectangular mat (about 9 in. \times 16 in.), standard woven in every particular except its warp which was of flexible asclepias fiber. In the longitudinal edges of the mat were hemmed wooden rods somewhat longer than the fabric. The hemmed edges were brought together and so retained by binding each free end of the rod to its opposing fellow, and the apertures at either end of the tube thus formed were closed with pieces of buckskin sewn on. The body of the mesh was overlaid with white xerophyllum in which appeared a pattern of adiantum, and as a rule on the two buckskin closures were painted red and blue figures. A short sling strap connected the projecting rods, from which hung tassels of flicker feathers. The full significance of this object is no longer known even by the priests themselves, but from its specialized shape and function we must regard it as a symbol of some mysterious and beneficent power.

Its shape suggests a miniature quiver. In fact a ceremonial quiver filled with arrows and differing in no important detail from the quiver of a warrior is carried by priests in two other major ceremonies. A specimen obtained from a "White Deer dance" priest was of dappled sealskin, cylindrical in shape and having the long slit opening along the top characterizing the small basketry quiver-like object. It was filled with arrows of such proportion and armament as to preclude the possibility of having been designed for shooting from a bow. Feather tassels hung from each end. During the ceremony it was slung over the right forearm and grasped in the hand.

It sometimes happens that the character of an obscure artifact can be detected by analysis of the name applied to it. The primitive quiver

doubtless was of coon hide, and from its origin was called by the Hupa tribe *mīnāúhwe* (*mīnnáhwa*, "its eyes glow"). By eliminating the neuter possessive *mīn* there appears the name of the sealskin ceremonial *náhwa*, and by further phonetic mutation we reach *nauwate* or *nahwete*, the name applied to the cylindrical basketry object. Of the several dozen *nahwete* examined all but three contained nothing of greater interest than wisps of grass and dried moss. In one of the exceptions seen in a Karok village on the upper Klamath river, there was a handful of moss in the center of which was hidden a fascine of delicate rods, sixteen in number and uniform in size and marking. An end of each rod was pointed and stained red, while the opposing ends had three equidistant parallel stripes of black. In general appearance they resembled a small set of the gambling sticks common to all that region, but these evidently had not been used for any purpose or even untied for many years.

From the fact that one of these objects is never utilized for any ordinary purpose it may be asserted that the fascine was of as sacred import as its receptacle. The salient features of an arrow find their analogues in the diminutive sheaf rods, the wooden shaft, the red (jasper or obsidian) point, and the triple black stripes at the butt (guide feathers). Also the number of the rods, sixteen, was significant in the major ceremony, known as the "White Deer dance," where the complement of priests and vestments was sixteen or its divisors, and eight days were required to complete the ceremonial pilgrimage and return to home life.

In one Hupa *nauwete* there was a bundle of plain straws evidently arranged in order near the center of a mass of debris and moss. That their position was not accidental was shown by the care with which the priest replaced them, although he would give no reason for so doing. A third specimen, belonging to a Redwood Athapaskan, was filled with moss, within which lay a single wooden rod stained dark red.

It should not be forgotten that this moss is customary in every hunter's or warrior's quiver as a cushion for the arrowpoints, and though such



FIG. 43.—Diminutive ceremonial quiver (after Mason).

utility in the ceremonial quiver is not conclusive, the analogy in this respect is as striking as any yet presented.

The accompanying illustration is that of a *nauwetc* collected many years ago by Lieutenant Ray and referred to by Professor Mason in his memoir on the Ray collection in the National Museum, published in the *Report of the Smithsonian Institution* for 1886.

UKIAH, CALIFORNIA.

J. W. HUDSON.

A Confession as to Errors in Hupa Linguistics. — An answer to some of Father Morice's comments on my Hupa linguistic work¹ may save his time in the future and valuable space in the columns of journals.

In the first place, I well know when I published my *Hupa Texts* that I was not presenting on the printed page all the phonetic facts of the language. I did intend, however, that all the really essential sounds should be expressed that it might be possible to differentiate the morphological elements. In this I failed in one important particular. The glottal stops² of Hupa escaped me at first. When finally they were recognized it was too late to insert them in so large a body of texts, had I felt justified in taking that liberty with such material, which I did not. This defect I expect to remedy by the publication of a special phonetic study of the principal morphological elements of Hupa in which I shall make use of mechanical methods.

As to the dental series of stops,³ it may be well to repeat the real facts in the case which I have tried to make plain in several other places.⁴ The Hupa have a set of dentals that are clearly sonants which I have therefore written as *d*. These occur where Father Morice has written *t*. A second set are surds followed by a slight aspiration. As these sounds are in this respect very close to English *t*, I have used that character for them, but took care to say that the aspiration existed. They correspond to Father Morice's *th*. The third set are surd stops followed by suction, that is they are unaspirated. I have represented them by *t* and Father

¹ "The Unity of Speech among the Northern and the Southern Déné," vol. 9, pp. 720-737 of this journal, and "Les Langues Dénées," *L'Année linguistique*, vol. 2, pp. 205-247.

² Father Morice represents what may be presumed to be glottal stops by an inverted period (·) and speaks of them as "hiatus" (loc. cit., *Am. Anthr.*, p. 721). These glottal stops are discussed and illustrated in "The Phonology of the Hupa Language, Part I.—The Individual Sounds," *Univ. Calif. Publ. Am. Archaeol. and Ethnol.*, vol. 5.

³ Loc. cit., *Am. Anthr.*, pp. 730 and 733-34.

⁴ *Univ. Calif. Publ. Am. Archaeol. and Ethnol.*, vol. 1, p. 95; vol. 3, p. 8; vol. 5, p. 14, pls. 4, 6, 7, and 8.

Morice by 't. Since the only points of difference are the methods of writing and the sonancy or surdness of the first set, I fail to see why Father Morice should charge that I ignored these important distinctions.

The sound which Father Morice writes *kh*¹ has in all probability become in Hupa an entirely different sound. It is not a stopped sound plus an aspiration, but a continuant spirant in the post-palatal position having a sound very similar to *ch* in German when in that language it follows a back vowel. I dare say the Hupa have been very much to blame in thus violating the principles of Déné philology, but those who were guilty have been long dead, and although they were much better acquainted with the Hupa language than I can ever hope to be, they were not at all informed as to what was spoken among the Carriers.

As to the errors in the translations of the *Hupa Texts*, much more might be said. Unfortunately Father Morice has missed some of the really choice ones. On the other hand he wishes me to say "the house is *lying*"² when in reality it was *standing* and in good condition. I might have said "one river shall flow out *with thee*,"³ had it not been that the eels were going up the stream just then and their master wished to say "as far as you are concerned there will be only one river that you may enter." Had I then known Father Morice I should have explained all this in a footnote. The Hupa sometimes employ figures of speech. *Hwinneste* has the literal meaning of "my body" but the figurative meaning of "my power" or "medicine."

Now that Father Morice has concluded that "all the other Déné languages, without exception, are remarkably similar in their phonetics and morphology," will he please tell us what Tolowa and Wailakki, two languages in California so different from each other and Hupa as to be unintelligible, are like?

P. E. GODDARD.

UNIVERSITY OF CALIFORNIA.

Morris K. Jesup died at his home in New York city, January 22, 1908. For many years he held an important place in the commercial and economic life of New York, his most distinguished service being that of president of the Chamber of Commerce. He was identified with many social and philanthropic efforts toward the enhancement of the dignity and well-being of his fellow men. The special distinction he attained, and the unique feature of his life, was his continuous and effec-

¹ Loc. cit., *Am. Anthr.*, p. 733. This Hupa sound has been carefully described and illustrated in "The Phonology of the Hupa Language," cited above, p. 12 and pl. 7.

² Loc. cit., *Am. Anthr.*, p. 732; *Hupa Texts*, p. 110.

³ Loc. cit., *Am. Anthr.*, p. 735, footnote.

tive support of the increase and dissemination of knowledge. For several years he was president of the Syrian College at Beirut and one of its chief benefactors. As president of the Peary Arctic Club he supported both by word and deed explorations in the Far North. He was one of the founders of the American Museum of Natural History and during the last twenty-seven years its president.

Probably no one of his generation contributed so variously and wisely to the development of scientific knowledge in general. Geography, botany, zoology, paleontology, and anthropology, all received timely and generous support. Thus all American scientists and educators have reason to mourn his death. Anthropologists in particular feel the loss keenly because he contributed annually large sums for the purchase of anthropological collections and for the expense of research at home and in the field. He seemed always moved by the desire that there should be in his own museum, or at least somewhere, a plain, simple, straightforward presentation of the facts from which a history of human culture could be inferred. Realizing the scantiness of knowledge he supported to the end extensive exploration and research in many fields.

His most distinguished anthropological enterprise was the Jesup North Pacific Expedition. He was greatly interested in the origin of aboriginal American culture and hoped the results of this expedition to northwestern America and northeastern Asia would throw some light upon the assumed cultural relation between the Old and New Worlds. The published memoirs of this expedition, now nearing completion, will ever be an appropriate memorial to his interest in the development of anthropological knowledge. Perhaps his greatest contribution to anthropology in America was the support he gave to a number of workers in the subject, for by reason of his varied resources, he cleared the way, or created the opportunities, by which they could do effective work. In this way he developed men. This was always his faith. Perhaps this was why he seemed to have an interest in every science. Whenever he saw a man in whom he had confidence achieving something worth while, his heart went out to him, and usually his purse as well.

Mr Jesup was a man of high ideals and great personal dignity. He demanded that scientific work be housed, equipped, and conducted in the most dignified manner, and that men of science themselves conform in all respects to this ideal.

Though not in any sense a man of science, Mr Jesup had a remarkable intuition for the right thing in scientific affairs and the necessary firmness to stand for its attainment even against great odds.

C. W.

Oto Village site in Nebraska.— Shortly after the publication of the last issue of the *American Anthropologist*, I received a communication from State Senator William R. Patrick, of South Omaha, to the effect that a large number of Indian house sites, similar to those described in my article on "Archeology of the Ponca Creek District, Eastern Nebraska," are situated on land owned by himself and by Mr Laurie Childs, in Sarpy county, about as far south of Omaha as the Ponca Creek district is northward therefrom. Mr Patrick offered to go over the ground with the writer for the purpose of determining if these house sites are similar to those farther north. The opportunity for our excursion came on March 1, and its results fully compensated a hard tramp through the mud and snow of the first day of spring.

The first house site examined lies within two hundred yards of Mr Childs' residence on Fort Crook boulevard. It is situated upon the crest of a ridge 200 feet above the river valley and half a mile back from the eastern edge of the bluffs. A road had cut through near the site, and a face two feet deep had enabled us to find chipped flints and potsherds, the latter showing a sand binder while the sherds from Ponca Creek district have a binder of granitic rock.

Altogether twenty sites were visited, and Mr Patrick assured me that there are scores of others on ridges nearer the river. All the sites are saucer-shaped depressions with entrance toward the south.

One feature of these house sites is that joining some of the larger circles are smaller ones averaging 15 to 25 feet in diameter. Many of the circles are 5 feet deep and 120 to 130 feet in diameter. Refuse heaps and what I take to be tumuli are closely associated with the circles. The area covered by the remains of the village is approximately 200 acres.

In the *Account of the Expedition from Pittsburgh to the Rocky Mountains*, in 1819-20, under the command of Major Stephen H. Long, compiled by Edwin James, geologist and botanist of the expedition, is the following (vol. 1, p. 145): "The banks of the Missouri above the Platte, have long been frequented by the Indians, either as places of permanent or occasional residence. Deserted encampments are often seen. On the northeast side, near the mouth of Mosquito river [Iowa side of the Missouri, then about four miles from the Childs and Patrick village site], are the remains of an old Ioway village. Four miles above, and on the opposite [Nebraska] side, was formerly a village of the Otoes." Reference is also made to this village by Lewis and Clark, and several residents of Omaha had made long search for it, but owing to the inaccuracies in the survey angles of Lewis and Clark it was supposed to have been situated several miles farther north, consequently it had not been found.

Messrs Childs and Patrick thoroughly appreciate the value of preserving these old sites. They will, however, be glad to allow a thorough study of the village for scientific purposes, but fortunately vandalism will be prohibited.

OMAHA, NEBRASKA.

ROBERT F. GILDER.

The "House of Tcuhu."—The interesting article, "A Fictitious Ruin in Gila Valley, Arizona," by Dr Fewkes, published in the *American Anthropologist*, vol. 9, p. 510 sq., has brought to mind a somewhat similar occurrence. The "genero de laberinto" of the *Rudo Ensayo* which Dr Fewkes' Pima informant explained as a children's game, has most probably its parallel among the Yaqui Indians.

Many years ago, while "hunting bones" in the Californian peninsula and on Espiritu Santo island, I also visited a small island opposite the bay of Pichilingue, where I found on the sandy soil, covering a surface of several meters, near the salt-pan (*salina*), a great number of large bowlders. These were laid out according to the plan of a labyrinth. The Mexican captain of our sailing boat told me that this formed part of a game of the Yaqui which was called "la casa de Montezuma" (ten Kate, *Reisen in Noord-Amerika*, Leiden, 1885, p. 57). The plan of it was not "traced in the sand" like the Pima children's game, but was formed by a boulder outline. I venture nevertheless the supposition that the idea and purport were originally the same, based, first, on the similar labyrinth plan, and second on the fact that the Pima "call the figure *Tcuhuki*, 'House of Tcuhu,' a cultus hero sometimes identified with Moctezuma."

As the affinities and parallels between the Yaqui and Pima are quite close in many other respects, I have little doubt that the "Montezuma" of the Yaqui is a cultus hero like Tcuhu. The latter is undoubtedly identical with Seuh-heu, Su-hu, or Sugh-ha (*Reisen*, op. cit., p. 154).

That Dr Fewkes has found the figure of the labyrinth in question on the walls of Casa Grande is the more interesting, as Tcuhu and Civano (Siwanno), according to Pima theogony, are relatives (op. cit., p. 154), and as the Pima call the Casa Grande the "House of Civano" (Civanoki, Siwannoki). Hence it would seem that the design of the *Tcuhuki* has a deeper signification than that of a game only.

While reconnoitering in 1888, as a member of the Hemenway Expedition, the Gila and Salado country in search of sites of ruins, I frequently came across boulder outlines on the surface, representing various figures and plans, not to speak of numerous petroglyphs. My field notes, with the plans and sketches made in those days, I have not at hand, but if my

memory serves me rightly, the labyrinth design was not rarely met with. I have even a dim recollection of having seen it on an old Pima war-shield.

These notes were partly published in *Corrections and Additions* (in Dutch, 1889) of my book of travel above cited, and in *Verhandlungen d. Berliner anthropol. Gesellschaft*, 1889, p. 664 sq.

TOKYO, JAPAN.

H. TEN KATE.

Bibliography of Anthropology. — A joint committee of the Royal Anthropological Institute and the Folk-lore Society has published its First Annual Issue of a *Bibliography of Anthropology and Folk-lore*, compiled by Northcote W. Thomas (London, David Nutt, 57 Long Acre, price 2s). Nos. 1-54 in the list are general; 55-275 pertain to Europe, 276-528 to Asia, 529-677 to Africa, 678-688 to North America, 689-698 to South America, and 699-779 to Oceania, followed by an index of subjects and an index of authors.

Notwithstanding the limitations of a bibliography of works published within the British Empire only, the beginning is a most promising one and certainly fulfils the duty of the two organizations that have initiated the project. Of other centers of anthropological research so much can not be said. Much remains to be done by the anthropological societies of the continent, and elsewhere in the Old World, while in America the reviews of periodical literature prepared by Dr Chamberlain for the *American Anthropologist*, and those by the same reviewer in the University of Toronto annual *Review of Historical Publications Relating to Canada*, excellent though they are, are all we have toward covering the vast field of anthropological literature in the Western Hemisphere. It is hoped that the day may not be distant when, by coöperation of the leading institutions of learning in North America and South America, libraries included, a complete bibliography of American anthropology, regardless of how obscure the publications may be or whether issued in periodicals or not, will be available. This done, it will be less of a step to include the anthropological literature of the world. Not until that time arrives can students the world over know what others are doing in the same general field. There is urgent need that something looking to this end be done soon. Already are we so overwhelmed with contributions to the Science of Man that one knows not which way to turn when he desires to put his finger on even a reasonable number of writings relating to a given subject. Under such conditions, all the while growing more serious, what the future results will be can only be surmised.

The members of the American Anthropological Association, and especially those who by their labors are constantly in need, first of all, of a Bibliography of American Anthropology, are interested in the subject. How can we in America meet our British confrères at least half way?

F. W. H.

Dr Lorimer Fison. — In the Reverend Dr Lorimer Fison, who died near Melbourne on December 29, 1907, Australian anthropology has lost one of its earliest scientific workers. He was born in England on November 9, 1832, and went up to Caius College, Cambridge, but never took a degree; after residing some time in Australia he became a Wesleyan missionary and went to Fiji, and it was from him that Lewis H. Morgan drew important information for his "Systems of Consanguinity." Returning to Australia, Dr Fison met Dr A. W. Howitt, and a joint work on Australian marriage customs, etc., "Kamilaroi and Kurnai," appeared in 1880. Whatever his views at that date, Dr Fison subsequently dissented from Morgan's interpretation of the facts in favor of primitive promiscuity, for in an address to the Australasian Association for the Advancement of Science he took the view that the group marriage did not mean more than marital right or qualification by birth. Dr Fison, unfortunately, found little time for writing; papers by him on Fijian customs and kinship systems appeared in the *Journal of the Anthropological Institute*; he dealt with Fijian land tenure in the *Expository Times* of 1905, and a year earlier he published in "Tales of Old Fiji" a small part of his great store of knowledge of that island. Some years ago he received a Civil List pension, but, to the loss of anthropology, broken health forbade him to do much literary work. — *Nature*, January 30, 1908.

Since the above was extracted, news has reached us of the death at Melbourne, on March 8, of Dr Howitt.

Cambridge University Accessions. — The Museum of the University of Cambridge, says *Nature*, has acquired, by gift of the Rev. John Roscoe of the Church Missionary Society, a second instalment of selected native manufactures from Uganda. The chief value of the gift lies in a unique set of relics of deceased Baganda kings, which, enclosed in ornate cases, were preserved by the people under the name of Lubare (i. e. the Deity) in special shrines placed under the guardianship of hereditary custodians. Of these king-gods, the most sacred objects of Baganda cult three generations are represented in the present collection.

With the first Roscoe collection, which was supplemented by a valuable gift of objects from the Katikiro of Uganda, the University acquired

Kibuka, the war god of the Baganda, who with all his appurtenances was safely unearthed from his ruined shrine in the Mawokota district. In this deity, as in the Lubare, personal relics form the essentials, and in Kibuka are enshrined the jaw-bone, etc., of the deified chief of that name, a renowned fighter who lived in the reign of Nakibinge, the eleventh king of the Baganda.

Objects such as these are not readily to be obtained; indeed it required years of careful investigation and all the knowledge and experience gained in the field by this veteran missionary to negotiate their safe removal from the ancient shrines of Uganda to the show-cases of the University museum.

Hook-and-eye work. — This term is suggested for that form of Malayian basketwork in which the end of a rattan stem or split is whittled down like the point of a toothpick or a quill pen. The slender end, often quite long, is thrust through a hole or curved about a border, and then is caught down under the texture. Some of these slender ends are carried down on the inside of a burden basket and form the stays about which the uniting knotwork is wrapped. This technic is quite widely dispersed in Malaysia, and I desire to know whether there is a better name in use. The slender end passing through or about another strip resembles closely a hook and eye.

O. T. MASON.

U. S. NATIONAL MUSEUM.

H. W. SETON-KARR, Esq., of Wimbledon, England, has presented to the department of archeology of the American Museum of Natural History seventy-one specimens of paleolithic implements collected by him in the districts of Poondi and Cazeepet, Madras Presidency, India. These implements are of red argillaceous sandstone and were washed out of Pleistocene alluvial deposits containing quartzite boulders. The department has received from Mr Alanson Skinner a series of specimens collected for the Museum last year in Ontario, Livingston, and Erie counties, New York, from sites formerly occupied by the Seneca and Neutral Indians.

SIGNOR RAVANA, Minister of Public Instruction at Rome, has appointed a special commission to direct and supervise the excavations at Herculaneum, composed of Commendatore Gattini, administrative director of the Museum of Naples; Signor De Petra, professor of archeology in the University of Naples; Professor Gabrici and Professor Dall' Osso, both of the Naples Museum; Professor Sogliano, director of the excavations at Pompeii; Commendatore Avena, director of the technical office

of the monuments of Naples; and two civil engineers of the province of Naples.

THE CHIEFS of the Six Nations in New York, through the Onondaga tribe, which has been the keeper of the archives throughout the history of the Iroquois Confederacy, have conferred on Director John M. Clarke, of the New York State Museum, the title of Hos-sa-na-ga'-da, the Bearer of the Names, in recognition of his official custodianship of the Iroquois wampums which were transferred to the state in 1898. The title is to be transmitted in perpetuity with the directorship of the State Museum.

WE REGRET to record the death of Sir Denzil Ibbetson, noted particularly for his report on the ethnology of the district of Karnal, India, based on a profound knowledge of the peasant classes, in which he clearly advocated the theory that their religion was to be found not in the sacred books recorded in Sanscrit, but in the cults and beliefs connected with the worship of the rural "godlings," as Ibbetson designated them.

PROF. DAVID C. WELLS has been appointed by the Dartmouth Scientific Association a member of the committee of arrangements, to represent the subject of anthropology, at the summer meeting of the American Association for the Advancement of Science to be held at Dartmouth College, Hanover, N. H., commencing June 29, as decided at the recent convocation in Chicago.

THE seventh meeting of the International Congress of Criminal Anthropology will open at Turin on April 28, under the presidency of Professor Lombroso. Communications relating to the congress should be addressed to the Secretariate of the Congress, Istituto di Medicina Legale, Via Michelangelo 26, Torino, Italy.

PROF. W. RIDGEWAY, professor of archeology in the University of Cambridge, has been elected president of the Royal Anthropological Institute, and also president of the Section of Anthropology of the British Association for the Advancement of Science, which is to hold its next meeting at Dublin in September next.

WE LEARN from *Nature* that Sir Norman Lockyer has been unanimously elected president and an honorary member of the Penzance Natural History and Antiquarian Society in recognition of his services to the study of the circles and other prehistoric remains in west Cornwall.

MR C. V. HARTMAN, curator of the ethnological section of the Carnegie Museum in Pittsburg, has received the call to a similar position in the ethnological department of the Riks-museum at Stockholm, succeeding the late Dr Hjalmar Stolpe.

A BILL has been introduced in the Senate by Senator Teller for the erection of a memorial to John Wesley Powell, late director of the Bureau of American Ethnology and the United States Geological Survey.

A CRIMINOLOGICAL INSTITUTE is to be established in connection with the government prison at Buenos Aires. Particular attention will be paid to criminal psychology and forensic psychiatry.

THE anthropological collections made by Mr Henry G. Bryant among the Eskimo, have been presented by him to the University of Pennsylvania.

THE SOCIÉTÉ PRÉHISTORIQUE DE FRANCE will hold its annual congress at Chambéry from August 24 to August 30.

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MIND AND MATTER IN CULTURE

By OTIS T. MASON

The word culture here applies to all the artificialities of human life. It is the history of man recorded in the works of his hands. Culture-history is the story of this wonderful progress as written in what remains of the record of the past in two depositories — archeological relics, and the survivals of ancient activities in the hands of savages and the backward among civilized peoples. This progress has been an appropriation of all the material of which the earth is composed and the domination of the forces of nature for the help of man. It is the second of the two grand divisions of Anthropology, namely — Physical Anthropology and Cultural Anthropology, or Eudematics.

INVENTION. — Forget for the moment that there is any biological kinship between mankind and animals, in order to fix the mind on the word "invention."

It is not necessary to confine oneself to patent offices and letters patent, for children invent as soon as they walk. Men and women of all races and conditions, in all ages, were engaged in devising. In this respect, there has been an unbroken kinship of minds, savage and civilized, from first to last. The animals construct habitations, store food, and use wonderful contrivances. They have seen the dawn of culture-history; but their tools and apparatus are so admirably provided in their anatomy that their minds are not fully awakened. The "cunning little creature called man" would seem to have been deprived of wings, fleet feet, horns, claws, and fangs, and endowed with a corresponding quantity and intricacy of brain.

WANTS. — At the foundation of infinite invention lie the words "wants," "desires," sharply distinguished from the word "needs." The former are the artificializing of the latter. The occupations called humanities have resulted, and tracing their origin is the climax of culture-history.

The artificializing of needs into wants and desires has developed into six general directions and produced an equal number of groups or classes of activities based on the nature of man:

1. *Language*, the expression of thought, giving rise to the sciences of glossology, philology.

The moment an infant is self-conscious, it proceeds to indicate its wants and feelings. It receives encouragement at every step, and the result is the mature language of gesture, voice, symbol, pen, press, terminating in endless patents for giving out and recording thought.

2. *Industries*, to supply wants, giving rise to the science of technology, in the widest sense of the term. It includes all artificialized activities to supply demands for aliment, clothing, shelter, and getting about, together with the endless list of implements, tools, utensils, machines, and conveniences without which we come to think that we cannot live, and whose practice is industrialism.

3. *Esthetic arts*, to give and foster pleasure. They include all artificial activities whose end is gratification. The senses are the doorways, and when their satisfaction is for its own sake, the fine arts are the results. But eating, drinking, perfume, bathing, and play, among the lowest as among the highest, have consumed much time and thought. The science of fine art is esthetology. Culture-history investigates and illustrates the origin of the arts beautiful, their progress and climaxes.

4. *Social activities* of all kinds, for reproduction or culture, giving rise to the family life, the industrial life, the civic and national life, and all sorts of unions or associations for welfare or pleasure. The special science is sociology. In the lower culture-states and culture-periods it is more observant of clans, gentes, tribes, and totems. In the higher culture, nations are the political units and all activities are organized.

5. *Knowledge and the explanation of things*, whose science is

sophiology. In it are included the lore of the uneducated and of primitive culture, as well as science, history, and philosophy of the civilized. All peoples are sure that they understand and can explain all phenomena, and the historic instinct is universal.

6. *Creeds and cults*, the last activities and thoughts and things to be mentioned grew out of beliefs and practices in relation to a spirit world. The term religion in its widest sense covers this whole class of phenomena, including organization of society for its regulation and all its operations and worships. The words daimonology and hierology apply to its culture-history.

MUTUAL SERVICE OF ACTIVITIES. — No class of activities exists for itself alone. There are actions in each, no doubt, which end in the performance; but there are very many more that are altruistic, cosmopolitan — performed by one class for the benefit or to supply the wants of other classes. Cicero, in his Oration for Archias, hits off my thought exactly: "For all the arts belonging to humanity (culture) have a kind of common bond, and among themselves are associated by a species of fellowship." We are to study the socials in culture as well as its solos.

Language lives for industries, esthetic arts, social demands, knowledge, and religion. It might be said that they all exist for it to talk about.

Industries thrive on language, fine art, society, science, and religion.

Esthetics changes speech into poetry, rhetoric, and the drama; overlays industry with beauty; mingles the *utile cum dulce* in social activities; develops thought in art and studies its philosophy; and lays its climaxes at the feet of the spirit world.

Association lies at the basis of all culture. No man and no art liveth for self or dieth for self. There must be speaker and hearer in language; subjective and objective in art and industry; cooperation in thought and science; and clergy and laity in religion.

Knowledge and *Science* demand the best that language can offer and stimulate its expansion and perfection; claim all industries as their own; guess at the secrets of Nature and reveal them to the inventor; put at the service of fine art the rules of number, proportion, and harmony; preserve the records of social order, census,

commerce, and exchange; point out their own faults and dangers and assign methods for their betterment; and give to conceptions of the spirit world the true order of nature and a rational basis for creeds and cults.

Religion brings to language its most exalted themes, to industries its promises and consolations, to art its highest inspirations, to social organizations their rules of conduct, and to the search for knowledge its all-absorbing problems.

Here one set of motives or one person is in the lead and others follow suit; but in another class or time, the tables are turned—the leader is subordinated, the slave is master, the humble is exalted. There is little chance for great physical differences in this diversification of functions.

This hasty survey is only a sketch of the simplest binary associations among the six classes of activities and, as culture advances, the mixtures become more and more complex, until all are found in the service of each. In the ethnological exhibits of the National Museum, the family life, the village life, and the ceremonial life are shown in groups of lay figures, the industrial and the esthetic life in groups and in series of objects, and the language, lore, and religious creeds are exhibited in literature. The photograph lends aid to all. There is no time here to follow up this fascinating study. The more profoundly one becomes absorbed in his special pursuit, the more will he look on all culture as belonging to his sphere of thought.

THE PHYSICAL BASIS OF CULTURE. — Culture has had to do from first to last with the physical universe for its resources, environments, and forces, chiefly in the earth, the waters, and the air; but in the cosmos also are they stored up, and out of these have arisen all the artificialities of human life. Speech is only waves of air; industries arise out of subservient matter and motion; esthetics goes to Nature for its materials and methods; society is based on instincts vastly older than man; thoughts, opinions, lore, knowledge, science, philosophy, wisdom — all grow and are made possible by the reign of law; and Nature gives form and function to religion.

But in order to keep the notion of culture through invention in the foreground, it is necessary to insist on Nature's second rank. She is servant and not master. She it is whose properties and qual-

ities give out first. It is the glass and not the mind that first fails in astronomy; the bolometer owes its fatigue and exhaustion to the manufacturer of steel, not to the physicist. Everywhere, at the end of the promising vistas of Nature there are sealed doors and barred gates.

The advancing minds and races took possession of the earth, not merely to accept the bounty offhand, like the animals, but to explore, secure, domesticate, or destroy its resources; to manufacture and reconstruct them; to move them and themselves artificially; to exchange, measure, and value them; to consume and enjoy them. The order of Nature seems to have been reversed, invention beginning with zoötechny and passing upward through plant culture and lithotechny to the mastery of forces.

To bring the resources of Nature into service and to accomplish these results just set forth, human brain and brawn would have been inadequate.

The harnessing and training of movements in Nature known as forces — muscle, gravity, wind, water, fire, chemism, and electricity were necessary. The gradual achievement of this marked the epochs in human progress —

1. Man power — hand epoch, manual skill.
2. Fire power — epoch of human mastery and metallurgy.
3. Beast power — epoch of domestication.
4. Wind power — epoch of the sail, navigation.
5. Water power — epoch of gravity.
6. Steam power — epoch of machinery.
7. Chemical power — epoch of scientific manufacture.
8. Electric power — epoch of climactic invention in speech, light, heat, and locomotion.

The utilization has been cumulative, so that a power house is a kind of House that Jack Built.

How to substitute the forces in the environment for the working of the hand has been the problem of the engineer and the machinist in all ages. The devices between the force and the effect have been —

<i>Devices</i>	<i>Effects</i>
1. Weights	} Motion, pressure, blows.
2. Springs	

- | | |
|---|--|
| 3. Inclined plane | Reduced weight and resistance. |
| 4. Wedge | Riving and tightening. |
| 5. Sled | Reducing friction. |
| 6. Roller | Changes and destroys friction. |
| 7. Wheel | Combines 5 and 6. |
| 8. Wheel and axle (cog and band) | } Multiply power and change its direction. |
| 9. Pulleys | |
| 10. Twisting, shrinking, and clamping devices. | |
| 11. The screw in holding, clamping, and motion. | |

In putting this series into activity, differentiated tools were developed; working alone or in combination —

1. For striking, either alone or with other results.
2. For rectilinear or curvilinear motions.
3. For breaking in pieces, grinding.
4. For battering surfaces.
5. For chipping silicious, fragile materials.
6. For abrading by friction.
7. For polishing surfaces.
8. For cutting with an edge.
9. For sawing, with or without sand.
10. For perforating.
11. For holding together.
12. For twisting textile substances.

The working part of the tool has maintained a steadfast plan of functioning, but the changes of the manual part have constituted the history of machinery.

CHANGES PRODUCED THROUGH INVENTIONS. — The modifications produced through inventions in all ages have been in many directions and each has had its effect on all divisions of culture. Vast changes have been wrought upon the earth, air, and waters, by man. His first masterpiece, fire, made awful havoc in the hands of the savage, followed by floods and malicious winds. Invention has been going on without cessation from first to now with changes.

1. In the things devised, commonly called inventions:

- a. From naturism to artificialism.
- b. From simplicity to complexity.
- c. From clumsiness to delicacy and beauty.

- d. From waste to economy.
- e. From discomfort to comfort.

This declaration applies to the six divisions of culture. Language was in the childhood of our species a mass of incoherent cries; handicraft was only slight modification of things inanimate; esthetic objects were plucked from nature; society, wisdom, and worship were only in their rudiments.

2. In all the processes and apparatus involved in the production and use of inventions the earliest inventors acted alone; while in modern life the vast amount of subsidiary changes involved in an invention often demands a corps of specialists and national legislation.

3. In rewards and benefits, at first the reward accrued to the individual and stimulated others to copy; while to encourage this most precious and beneficent faculty the most enlightened nations grant exclusive patents and crown the inventor among the heroes of the species. The benefits to society have expanded and intensified with the fortunate races and peoples, until it is impossible to calculate the good that has come to the commonweal of humanity through any one of the epoch-making inventions.

4. In thought, not only of the inventor's mind, but in all who come under his influence. After the birth of his happy idea, he is no longer the same person. Old things are passed away, all things are new. Other minds are affected; the contagion spreads far and wide.

There are places where the inventor's contrivances produce no material alterations. He cannot change the heavenly bodies, but his thoughts about them have been revolutionized by his ways and means of looking at them. This mental evolution has been manifested in the very citadel of change, the inventive faculty itself. The first instrumentalities were mere borrowing, taking things ready made, and copying others for new functions—a quiet stone for a lively hammer; the houses of mollusks for dishes, spoons, tools, and musical instruments; thorns for awls, etc. The latest are out-and-out creations. The inventor does not walk abroad for suggestions; he is not surprised by the unexpected, but sits down in his laboratory, shuts his eyes, and gives the creator spirit full sway.

5. In society, the coöperative mind has been elaborated through the growing complexity of invention. Schools of fine art with their motives, legislatures in their enactments, institutions of instruction and research, are perpetuated and organized — thinkers, exploring the spheres and the spirit world for new materials, motives, and forces. The renaissance of the white subspecies of humanity is its noblest product.

THE FUTURE OF CULTURE-HISTORY. — The scientific study of culture is yet in its infancy. There is ample work to do in solving —

Development of artificiality in time.

Evolution of complexity in devisings.

Genealogical connections of inventions.

Geographic distribution of thought.

Relation of culture to environments.

Acculturation through blood kinship, accident, traveling about of peoples, and cosmic movements — including winds, currents, migrations of birds, fishes, and mammals.

1. In the changes from naturism through manganism the story will run —

From cries and gestures to perfect transmission of thought.

From natural fire to fire, the docile servant.

From woman's nimble fingers to Jacquard loom.

From personal decoration to idealized art.

From common refuge to national fortification ; from herding together to organized armies,

From childish lore to cyclopedic knowledge.

From personcity in causation to organized science.

From hecastotheism to monotheism.

From simplicity to complexity.

2. The coming student of culture will study out the changes of invention —

From stone hammer to steam hammer.

From flint saw to ribbon saw.

From chipped scraper to planing mill.

From woman's back to palace train.

From skin float to ocean steamer.

From conch shell and rattle to orchestra.

From ephemeral partnership to international commerce.

From personal friendship to universal brotherhood.
From tribal life to the congress of nations.
From lonely guessing to international standards.
From tribal deity to the Infinite and Omnipresent.

3. The ways from clumsiness to delicacy will pass through the many series of progression from mere need supply to refined enjoyments, from brute force to grace, from worse to better ideals in morals. The two pillars in front of Solomon's temple were Jachin and Boaz, beauty and strength, typifying world progression upward —

From stammering cries to the great epics and dramas.
From stifling smoke to scientific heatings.
From groaning cart to Pullman car.
From gluttonous feast to refined dining.
From fig-leaf apron to ceremonial costume.
From digging stick to buggy cultivator.
From cave refuge to charming home.
From wild shouts in unison to the symphony.

4. The changes from waste to economy will include also interesting research. Our ancestors did destroy ruthlessly the bounties of Nature, and the modern forest and coal wasters have been greater than they. But the tendencies have been —

From waste to frugality.
From ancient mining to recent methods.
From camp and forest fires to steam and electric heating.
From savage roast to French cuisine.
From primitive tillage to scientific husbandry.
From Jack-at-all-trades to specialized manufacture.
From dispersive living to coöperative comfort.
From separate establishments to corporations.
From hiding the truth to knowledge in common.
From war to arbitration.

Thorough examination of culture-changes will show, in all the past, struggles for ease ; and the transitions have been from discomfort to comfort. Looking backward over the progress of invention among the nations reveals such a change. New departures of activity in the conquest of a new force seem to contradict this. The

devices break down, go out, will not work, give annoyance, and are accompanied often with increased hardship. They convey discomfort, not comfort. This, however, is only transitory defeat, leading to later victories. It is a melancholy truth, however, that this change has in the past seduced nations to their decline and fall. The evolution is seen in the transfer —

From log seat to gorgeous furnishings.

From the naked ground to the feather bed.

From plodding to riding at work.

From toilsome hand work to machine work.

From open fire to electric heating.

From wandering savagery to the settled home.

From blood revenge to jury trial.

From cold indifference to organized charity.

From selfish motive to the golden rule.

FROM INDIVIDUAL TO GENERAL STUDY. — This paper would be without a motive if it did not extend a cordial invitation to every thoughtful person to take part in deciphering records of the mind's victories written by inventions. It matters not what one's calling or favorite study may be, its materials, apparatus, and processes have a genealogy as old as the human species. Every word voiced, written, gestured, or messaged; every activity in which tools, utensils, or apparatus may be used; every artistic creation; every aggregation or congregation of human beings for a specific purpose; every suggestion for explaining phenomena, every advance in knowledge or its instrumentalities; and all beliefs and worships belong to human culture and their investigations to culture-history. Nothing common is trivial; the accumulation of well-observed facts is as important as the epoch-making invention.

U. S. NATIONAL MUSEUM,
WASHINGTON, D. C.

ETHNOGRAPHICAL PROBLEMS OF THE MISSOURI SASKATCHEWAN AREA

By CLARK WISSLER

Ethnographic research in America has made sufficient progress to warrant serious comparative studies. Such studies as have been made for California and the North Pacific coast show the substantial progress to be made by research of this kind. While it may be true that the chief concern of Anthropology in America was rightly the recording of languages and ethnological facts, the time has come when the defining of some problems by comparative study is necessary to prevent loss of data because of failure to appreciate its importance. The following paper is a brief review of problems suggested by past research in the Missouri-Saskatchewan area. Few of the suggestions can be said to be original with the writer, but to refer each and all to the sources would reduce these pages to lists of footnotes and catalogues of contributors' names. Furthermore, all serious students of American anthropology are sufficiently familiar with the literature of this area to infer the sources from which the suggestions come. We may mention, however, a recent paper by James Mooney on the Cheyenne, published by the American Anthropological Association, in which some aspects of the general problems are discussed; a paper by A. L. Kroeber, read before the Congress of Americanists, Quebec, 1906, reviewing the social organization, and at the same meeting one by the writer discussing some of the more general phases of the cultural problems pertaining to this area.

The term Missouri-Saskatchewan seems best for the area under discussion as it defines the region in map-terms. The limits of the area drained by these two rivers may not exactly agree with the accepted bounds of the ethnographic area known as the Prairie, Plains, etc., but with few exceptions include the historical habitats of the tribes among which certain aspects of culture are most pronounced. Taking its southern boundary as the Arkansas, its western

as the Great Divide, and its eastern as the Mississippi and Red rivers, we shall have the area in which the tribes concerned roamed for a part of the year at least. Furthermore, as there appears a tendency toward migration from all sides into this area, it may be regarded as the territorial objective for a large part of the inhabitants in the interior of the continent. Our knowledge of the history of this area dates from the latter part of the eighteenth century, but does not become definite until 1800. Taking the beginning of the historical period as the point of departure we find in the Missouri-Saskatchewan area groups of people belonging to Athabaskan, Algonkian, Caddoan, Kiowan, Shoshonian, and Siouan linguistic stocks. To these may be added transient groups of Sahaptian and Kutenaiian.

The members of the Siouan stock resided almost entirely within the area. The main body seems to have lined the banks of the Missouri from the great bend in North Dakota to its junction with the Mississippi, with outlying groups to the northeast and to the south. There were, however, two detached groups, the Crow in the mountains of Montana and the Assiniboin of Canada. The Tetons, the Crows, and Assiniboin seem to have lived in tipis all the year and not to have practised agriculture, yet a large part of the main body, the Hidatsa, Mandan, Omaha, Missouri, Oto, etc., lived in villages of earth-covered lodges, and cultivated corn. Within the historical period the Caddoan has been one of the minor stocks of the area, better known under the names of Pawnee, Wichita, and Arikara. Of these the Pawnee and Arikara lived in the same sort of houses. It is a singular fact that the Missouri type of earth lodge is almost restricted to the above designated groups. Here is one of the many specific problems: Was this type of dwelling originated in the area and by what group? The fact that the earth lodge seems to have been used by the two most northerly groups of the Caddoan suggests strongly the Missouri River Siouan group as its originator. Archeological studies in Wisconsin and Minnesota—the traditional homes of many divisions of the Siouan group—are important for the determination of the former character of their dwellings. The solution of this problem may be of considerable importance in estimating the value of the theory that the Siouan stock migrated from

the Atlantic. In the same connection the distribution of corn culture is important. It seems possible by additional research to fix an approximate date for its introduction to the Ojibwa and other northern groups. A study of pottery is also important, for the studies of Will and Spinden suggest a similarity between the pottery found around the Great Lakes and that of the Mandan.

The Shoshonian stock seems to center on the plateaus of the west, and a recent general study of the various linguistic groups by Kroeber strengthens the assumption that the center of their dispersion was somewhere west of the Rocky mountains. The older theory is that the whole group was dispersed from a center in Montana and adjacent territory. On this theory the Comanche and Shoshoni moved out to the plains from the west, or at least from the southwest. At the opening of the historical period they are credited with ranging from Texas to the Marias river in Montana. Though at the historical period tipis were in general use, it seems that the original type of habitation was the brush shelter. The movements of these groups and their relations to the other Shoshonian peoples is a problem in itself, but insofar as the above specified groups are concerned it is one of the problems of the Missouri-Saskatchewan area.

Perhaps the most interesting problems center around the tribes speaking Algonkian languages. The Blackfoot, Cheyenne, Atsina, Arapaho, and Plains Cree are by no means unimportant tribes, but their importance here is due to the partial solution of their problems. That they migrated from the region of the Great Lakes seems certain. This is suggested by the distribution of the Algonkian family, but we have in the Plains Cree of Canada part of a distinct ethnic group adopting the culture of the area without losing connection with the whole. Furthermore, the Cheyenne have been traced back to the borders of the central Algonkian area and the approximate date of their departure for the Missouri fixed at 1700. That the Arapaho, Atsina, and Blackfeet came to their historical habitats in similar fashion is the natural assumption. The relation of the Arapaho to the Atsina in this movement is an important problem. There are not wanting suggestions that both formerly lived as one group on the lower Saskatchewan and eastward to Red river. In

fact the Arapaho are credited with traditions of having formerly resided in the Red River country and to have practised agriculture. Taking all together it seems fair to assume that the center of dispersion for the Cheyenne, Arapaho, Atsina, Blackfeet, and Plains Cree was the Red River basin. Yet notwithstanding the advanced state of our knowledge of some of these tribes, this whole assumption merely states another of the intricate problems of the area.

There are still a few small but quite problematic groups. The Kiowa, regarded as a distinct linguistic family, have affiliated with them, under the name Kiowa Apache, a group of Athabascan stock, probably the Kaskaia of Long. The Sarsi, another Athabascan group confederated with the Blackfeet, seem to have left their northern home just before the historic period, and references to them in Henry's Journal make it probable that further research will clear up their history as in the case of the Cheyenne. Should this come to pass, the Sarsi, the Kiowa Apache, and perhaps the Navaho and Apache of the Southwest will line up in similar manner to the divisions of the Algonkian stock. The Kutenai, a small group speaking a distinct language, are credited with morphological leanings toward the Shoshonian, and while they now reside chiefly in Canada west of the mountains, there is traditional and indirect historical evidence of their having lived in Alberta near the site of Rocky Mountain House. The Assiniboin and Blackfeet claim to have driven them westward out of the plains. Whether they represent a former plains people or a very distant branch of pre-Shoshonian peoples arrested in their effort to reach the plains remains a problem. In the same connection the Nez Percé and related groups should receive some attention.

Now, taking the area as a whole we find this interesting condition: With one exception all the tribes residing therein at the beginning of the historical period can be satisfactorily traced, even with our present imperfect knowledge, to beyond its borders. This exception is the Kiowa who roamed in the heart of the area and who seem to have no relations in any other part of the continent. Thus the Kiowa present one of the most important problems. On the other hand another general problem arises: Was this area inhabited by previous groups, and, if so, what was the character of their culture? Naturally this is an archeological problem.

While our knowledge of the archeology of the area is scanty it is increasing and already offers a few suggestions. The ground roamed over by the Kiowa, Shoshoni, Crows, Arapaho, Cheyenne, and Tetons seems to yield few artifacts that can be assigned to a culture other than that of the historical period. On the southwestern border we find traces of Pueblo culture. The western and northern borders of the area have not been explored. On the east considerable preliminary work has been done. Recent work in the vicinity of Omaha, in Minnesota and eastern North and South Dakota indicates a wealth of earthworks and other remains seemingly related to those east of the Mississippi. As the case stands it seems to indicate an older center of population near the eastern border of the Missouri-Saskatchewan area, from which it follows that the determination of its westward distribution is important. Contrary to the usual conditions there is need of immediate work in the middle of the area, because agriculture and its attendant industries are destroying surface remains the study of which would doubtless establish connections with the historical period, thus giving continuity to historical and archeological methods. All that has been so far brought to light suggests a prehistoric uninhabited region in the western part of the Missouri-Saskatchewan area, where the more substantial remains of eastern and southwestern cultures apparently dwindle to nothing. One is tempted to assume that we have here a direct connection with the historical period in that formerly groups reaching this region from the east and south gradually abandoned the more sedentary life of their ancestors as did the Cheyenne and other historical groups. However, our knowledge of the archeology of this area is so vague that an assumption of any sort seems scarcely justifiable.

So far we have sketched the more general problems clustering around the origins of the peoples found in the Missouri-Saskatchewan area at the opening of the historical period. In the solution of these, linguistic research must play the major part, but since so many families are represented an exhaustive study must be made of three widely distributed stocks, not to mention many more isolated ones. Fortunately there are no indications that any of the languages spoken in this area will become extinct during the next fifty

years. Unfortunately the same can not be said of culture, and in turning to the problems arising from the consideration of the origin of this culture we are impressed with the necessity for immediate work. Regardless of duty, however, the problem as to the origin of this culture is one of theoretical as well as historical interest.

The fact that almost every tribe moved into this area from adjacent regions and that in the historical period they had already acquired a culture generally uniform and quite distinct from that of the main groups from which they came suggests the question of the center from which this culture was dispersed and the manner of its dispersion. There is reason to believe that this problem can be solved by a comparative study of cultural details among the different tribes. While such a comparative study has yet to be made, there are not wanting suggestions as to origins for some of the most characteristic features of material culture. For example, there are traditional tendencies to refer the introduction of circular shields to the Comanche and Kiowa. Further, it is quite probable that the tipi in crude form was introduced from the north where we find similar types of conical tents extending from Labrador to Alaska. At least there are good reasons for believing that the tipi did not originate among the Shoshonian or Siouan stocks. On the other hand it seems probable that the Athabaskan tribes brought in the idea whence it follows that by position the Kiowa and Kiowa Apache are probably factors in its adoption and intrusive distribution. A detailed study of the tipi in different parts of the area might offer a solution to this problem. All these, however, are but crude guesses, valuable only as preliminaries to investigation.

The modes of transportation suggest another problem. The introduction of the horse has not been thoroughly investigated from historical sources. Such a study is quite important but will be rather difficult in that it will require an exhaustive research among early documents in Spain, Mexico, and our Southwestern states. It seems a reasonable assumption that many modifications of customs came in with the horse as it passed along from one owner to another. While at the historical period all the important groups in the area were raising horses, these animals had yet failed to entirely displace the dog. The inventors of the dog-travois will prob-

ably never be located, but some light may be had on the problem of transportation by a general study of the distribution of dog-traction. It is rather curious that animal traction seems to have been confined to the northern and central part of the North American continent. Its most accentuated development is, of course, in the Arctic belt, with a fringe in the Mackenzie and Hudson Bay areas. So far as the Missouri-Saskatchewan area is concerned the problem is a minor one, since the greater development of dog-traction in the north suggests its introduction from that quarter. It is obvious, however, that taken in connection with the probable northern origin of the tipi and the theory of distribution of Eskimo culture from the Hudson Bay region, we are raising problems reaching beyond the area and involving the greater part of the continent.

On the side of the less material culture special attention has been given to the art, mythology, and social and ceremonial organization of many tribes so that our knowledge is much more complete here than elsewhere. Yet a great deal must be done before a thorough examination of the important problems can be prosecuted.

The art of the area presents striking individualities. Research in symbolism has brought to light very great tribal differences, so great, in fact, that the comparative value of the results is doubtful. The problems raised by these symbolic studies are psychological rather than ethnographical, and in so far not specific problems relating to this area. On the other hand an objective study of this art is of some promise. One suggestive general difference in distribution appears. The realistic decorative and other art seems to have been greatly developed on the northeastern border of the area, while the geometric was most accentuated on the southwestern. Thus on the northeast beyond the limit of our area the Winnebago especially possessed a highly developed pictographic type of quill and other decoration, while the Shoshoni of the extreme southwest of the area seem to have practised no such pictographic art but presented in contrast a highly developed geometric type both in embroidery and rawhide painting. Taking the Arapaho and Teton (Dakota) as two intermediate groups, we find the former inclining to the geometric art of their Shoshonian neighbors, while the latter show almost equal proficiency in the two contrasting types. From

a broader view it seems that the whole Siouan stock has a rather high development of this pictographic art. Thus we seem to have two influences from opposite directions, reinforcing the common suggestion that the geometric art of this area was introduced from the southwestern part of the continent.

A comparative study of songs, both as to music and functions, is as yet for the future. Among some tribes in this area the song seems to be regarded as the chief part of a ritual or formula. Assuming this tendency as general, songs become of great comparative importance. The correspondences in function and regalia between the ceremonies of different tribes is striking, but songs should on *a priori* grounds show even greater resemblances. Some of the material already available shows intertribal identity of rhythm and tone for the songs of some military societies. This whole subject, however, is undeveloped, and nothing can be said with certainty.

The mythology of the area has received considerable attention. The Algonkian group (Blackfoot, Atsina, Cheyenne, and Arapaho) show many correspondences, but have also much in common with the Siouan group. The Caddoan seems to have many elements in common with both. The Shoshonian group, on the other hand, stands somewhat apart in so far as it has less in common with other groups. Roughly it may be said that the mythology of the area seems to have come in with the various tribes and still shows an eastern and a western character. Unfortunately our knowledge of the Kiowa is too meager to place their mythology. Finally, a comparative study of the mythology of the Missouri-Saskatchewan area will involve a serious study of all the surrounding territory. Happily a large amount of material is already at hand.

When we pass to social and ceremonial organizations the complexity of our problem increases rather than diminishes. In the camp circle we find quite a characteristic feature and one concerning which there can be little doubt that it originated within some one group. Our knowledge of the significance of this practice is yet insufficient except perhaps in the case of the Cheyenne and the Kiowa. There are, however, indications that it was much more elaborate and ceremonially important among the southern tribes than elsewhere in the area. Among the Blackfeet the camp-circle seems

to be definitely attached to the Sun dance, suggesting that the latter may have been a factor in the distribution of the former. The units of the camp-circle, or the social organization of the tribe in this area, is an object of current discussion. Recently there has appeared a disposition to deny the existence of a clan or gentile system among the various tribes, except those of Caddoan stock. However, these units of the camp-circle, or bands, had names, and membership in them was determined usually by birth. In some tribes, at least, marriage was forbidden within the band, though it is not clear that any regard was paid to impediments save those of actual blood relationship. Here we have some of the features of clans and gentes. The question as to whether in such cases bands are clans or gentes might easily develop into a war of definitions, whereas the real problem is a comparative one. At least, the present need is a careful study of the band in the field to determine its social functions among the various tribes. For example, data are lacking for distinguishing between residence in a band of husband or wife and membership in the same, also as to the effect of residence upon the inheritance of the children. With sufficient data a comparative study would finally show whether the band system rests on a real genetic basis or is simply a mode of designating normal family groups for formal purposes in imitation of some pioneer tribe.

Another feature that has received a great deal of attention is the so-called age or military societies in which we find a progressive series of degrees or orders beginning with boys and ending with the superannuated. These societies offer unusual opportunities for determining centers for the distribution of ceremonies. A fair beginning has been made with these, but much remains to be done, especially among tribes of the Siouan stock.

In case of the Sun dance there are not wanting many indications that the ceremony as now practised by many tribes is the result of a gradual accumulation both of ceremonies and ideas. For example, some old men among the Blackfeet claim traditional knowledge of not only the order in which many features were introduced but the specific tribes from which they were borrowed. The torture feature of the Sun dance seems to have been a separate insti-

tution among the Missouri River tribes, later incorporated in their Sun dance and eventually passed on to other tribes. On *a priori* grounds it would appear that all complex ceremonies were gradual accumulations, even if there were fewer hints of such a genesis in the ceremonies themselves. The so-called age societies appear in one tribe, at least, ranked according to the traditional dates of their origin or introduction. From these suggestions it seems possible to take up with promise the untangling of the distribution and development of the ceremonial organization and activities of the Missouri-Saskatchewan area. With full data from each group it is reasonable to hope that the important features of many ceremonies can be traced to their originators.

There are a number of modern ceremonies of more suggestive than actual comparative value, since they have been introduced within the historical period and their movements traced. The most important of these are the Ghost dance, Omaha dance, Women's dance, Tea dance, and Mescal eating. Excepting the Ghost dance these flourish in almost all parts of the area under various names, but with the same essential features and songs. Some songs collected by the writer from the Omaha and Tea dances of the Blackfeet respectively were identified by a Pawnee as belonging to corresponding ceremonies among his people. Thus these songs have crossed the area. While these ceremonies are in a sense modern they should not be neglected, as they may serve as historical examples of the transmission of ceremonies from one tribe to another.

There are many other important ceremonies of varying degrees of distribution, such as the medicine-pipe, buffalo-medicine, sweat-lodge, puberty-rites, medicine-tipis, war-charms, etc., concerning which too much data can not be had for future comparative study. Also our knowledge of religious ideas is very incomplete. We have little chance of comparing the manito ideas of the central Algonkian group with those of the Algonkian group of this area, nor are we able to compare the religious ideas of the Shoshonian group with those of the Siouan. Unfortunately data of this kind are obtained with great difficulty and possess at best a large probable error.

While this paper is rather a summary of data needed than of data at hand, a few minor cultural distinctions may be tentatively suggested. The material culture, the art, and the social organization of the Missouri-Saskatchewan area seem more uniform than the ceremonial and religious culture. Perhaps this is to be expected when tribes move into an area from different points, topography and food conditions tending to level down the more economic aspects of tribal life. Some elaborate ceremonies, however, are not so uniformly distributed. For example, the members of the Algonkian group seem to fall into a class with respect to the Sun dance as opposed to the Siouan, Caddoan, and Shoshonian groups. The same may be said of their mythology. Taking a broader view of ceremonial organization, however, the Algonkian and Siouan groups constitute a class as opposed to the Caddoan and Shoshonian. This might be correlated with the directions of migration. Whatever may have been the primary migration of the Siouan stock, there is evidence of a secondary migration from the upper Mississippi region to the Missouri. From the same general direction came the Algonkian tribes. Thus their general similarities of culture may be credited to contact immediate and remote. Both the Caddoan and the Shoshonian stocks sent representatives into the area, but from different cultural centers. In addition there is the problematical Kiowa. These may be considered the hypothetical cultural influences. With more data and a final linguistic study of the area it will be possible to differentiate more satisfactorily the contributions of these various centers to the culture of the historical period.

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NOTES ON THE ACHOMAWI AND ATSUGEWI INDIANS OF NORTHERN CALIFORNIA¹

By ROLAND B. DIXON

The area occupied by the Achomawi and Atsugewi Indians, who form a portion of the Shastan stock, lies mainly in Shasta, Lassen, and Modoc counties in the northeastern part of California. The Achomawi territory was pretty closely restricted to the valley of Pit river and, as nearly as can be learned at present, may be described as follows: Beginning at a point above the mouth of Montgomery creek on Pit river, they occupied or claimed all the valley of that river up to its head, together with the valleys of Fall river and of Beaver and Ash creeks. Burney and Goose valleys were also claimed by them, but in the case of the former, the Atsugewi insist that they and not the Achomawi occupied it. Permanent settlements were made only in the immediate vicinity of the streams, although the Achomawi hunted as far west as the head of the McCloud and Mt Shasta, north to Medicine lake and south as far as Lassen Butte.

Unlike the Achomawi, the Atsugewi did not occupy a continuous area, but were divided into two separate groups. One of these, and the larger, was settled on Hat creek, from its head down to about one mile below the present town of Cassel, and in Burney valley; the other in Dixie valley some twelve or fifteen miles to the east. The Atsugewi seem to have had a clear idea of unity among themselves, and to have formed a distinct group apart from the Achomawi, with whom, however, they were usually on good terms.

The area outlined lies along the southern edge of the barren and forbidding Lava Beds which extend for so many miles along the

¹The following notes were made in 1903 while the author was engaged in getting linguistic material from these two members of the Shastan stock, as part of the work of the Huntington Expedition. As no further opportunity has occurred to continue the work in this region, it seems undesirable to withhold any longer such information as was procured. These notes are therefore published by permission of the Trustees of the American Museum of Natural History.

Oregon-California boundary east of the Klamath lakes. The southern edge of these lava flows forms really the northern limit of the Achomawi territory, which may be described as a series of wide, semi-arid plains, lying at an elevation of about 4000 feet, separated from each other by rugged, mostly timbered ridges, rising some 2000 feet above the level of the surrounding country. Across these plains, and through these ridges, Pit river and its tributaries run, often cutting rather narrow, deep valleys. Below the mouth of Fall river, the Pit has cut a tremendous cañon across the confused mass of mountains lying south of Mt Shasta, and in this portion of its course offers few available sites for settlement. In some cases, as in Goose and Dixie valleys, there are large swampy areas. To the south, about the head of Hat creek, lies the desolate volcanic region of cinder cones and ash beds about Lassen Butte. The climate of this whole area is decidedly arid, with hot summers and rather cold winters. The flora is largely that of the dry, interior plateaus, and the fauna as a whole poorer than in the regions to the west and south.

Both Achomawi and Atsugewi were divided into a number of fairly well defined groups. Detailed investigations along this line were not made, but in a long series of geographical terms obtained, most of Powers' divisions can be recognized. To these may be added the following: Amit'dji (Ach.) = Apwaruke'i (Ats.) = Dixie Valley people; Ap'amadji (Ach.) = Wamari'i (Ats.) = Burney Valley people; Idjuigilum'idji (Ach.) = Ak^howi'gi (Ats.) = Beaver Creek people. The Achomawi called the Hat Creek people Baqa'mali; and the latter called the Achomawi in general, Pomari'i.

The dress of the men consisted of a belt under which was passed a strip of skin, tanned with the fur on, so that it doubled over the belt, and hung down as a small apron in front. The regular breech-clout was not worn. Poor people used coyote skins for this purpose, whereas the wealthy made use of mink, otter, or silver fox. Moccasins of deerskin were worn on the feet in summer, the poorer people often using a low, slipper-like shoe or sandal of tules. Wealthy men sometimes wore deerskin leggings, decorated with quillwork and fringed. On the upper part of the body men wore a deerskin garment, somewhat like a shirt. A hole was cut

for the head, and then the skin sewn up under the arms, making a sleeveless garment which was belted at the waist, and sometimes decorated with quills. Deer-hide robes, with the hair on, were used in cold weather also. In summer men wore a netted cap similar to those used by the Maidu; in winter a cap of fur was sometimes worn. The skin of a mud-hen was used for a glove, or mitten.

The women's dress was of two sorts: either a deerskin fringe or apron, reaching to the knee, the fringes being threaded through pine-nuts or small pieces of bone; or else a skirt of deerskin, made of several skins, wrapped about the waist and held up by a belt of fur. Moccasins were worn on the feet, and the upper part of the body was covered with a garment similar to that worn by men. On the head, women wore a basket cap.

Men wore their hair long, either rolling it under the cap or letting it stick up in two horns, one on each side. Women braided it in two braids, wrapped with mink-skin, and allowed them to hang in front of the shoulders. The ears were pierced by both sexes, and ear-ornaments of beads, dentalia, etc., worn. Men pierced the nose also, and wore a small string of beads or a single dentalium shell therein. Headbands were made by the Atsugewi of quills, strung side by side on threads in the same manner as the feather bands of yellowhammer feathers made by the Maidu and other Indians to the south. Tattooing was little used on the whole. Women made three lines on the chin, some also put lines on the cheek. Men occasionally had a line of small dots running from the eye across the temple.

Two sorts of houses were built by these Indians. The regular winter house was built as follows: An excavation a little more than a foot in depth was made over an area ten to twelve feet long and six to ten feet wide, one end being generally somewhat wider than the other. At the wider end two forked posts, six to eight feet high, were set up about two feet apart, and one similar post at the narrow end. A long pole was then laid from each of the two posts at the broad end to the post at the narrow end, forming a V-shaped ridge-pole, to which slabs of bark and poles were leaned from the edge of the excavation. The doorway was between the two posts at the wider

end, and usually faced south. The fire was in the center, and the smoke escaped through the space between the two ridge-poles. The second type of house was the so-called sweat-house. It was larger, and often built on a gentle side-hill slope or on top of a low mound. In this form of house the excavation was carried to a depth of about three feet over an area sometimes as large as twenty by thirty feet. One end here also was usually narrower than the other. A single post of large size was set up on the median line, about one-third of the distance from one end, and to it two stout rafters were laid, one from each side. At the farther end of the excavation then, an entrance passageway was dug, across the inner end of which a beam was laid, and from this two other rafters ran to the first two, leaving a narrow space between. On this as a framework, poles were laid and leaned from all sides, and then covered with brush and earth. The space between the second pair of rafters was left as a smoke-hole, and also served as an entrance by means of a ladder made of two poles with cross-bars tied on with withes. The Achomawi seemed to have used the dug-out entrance as the usual one, whereas the Atsugewi state that they used this merely as a draft-hole, and normally entered and left the house by means of the ladder. These larger structures were occupied by several families as a rule, and there were sometimes two or three of them in one village.

The houses were occupied only during the winter season. In the summer people lived outdoors without shelter, or with a simple windbreak or a rude roof of brush, open on all sides, or with a few mats hung up to keep out the wind.

The region occupied by these Indians was about on the eastern edge of the area in which the acorn forms the chief food. The more westerly portion of the people were able to get considerable supplies of this valuable food, but the easterly divisions were obliged to obtain what they could by trade. Acorns were prepared for eating in the usual manner, being dried, pounded to a fine meal, leached with warm water, and then cooked, either as a soup or in cakes as a bread. The mealing was done with a stone pestle, using a flat stone for a mortar, and a mortar-basket. Other vegetable foods used were various sorts of seeds and berries, together with roots.

The seeds were gathered by means of a seed-beater and a flattish basket tray, and were parched by shaking with coals, and then cooked as a mush. Manzanita berries were mixed with those of the skunk-brush, and were not used, it is claimed, to prepare the so-called "manzanita-cider." Various other berries were gathered, mashed, and dried in cakes and kept for winter food. Pine-nuts were much relished, and camass and other roots were to be had in some abundance.

Animal foods included nearly everything available. Deer were moderately abundant, and their meat was dried and preserved. Rabbits, squirrels, and other small game, together with ducks, geese, grouse, and birds' eggs formed the larger part of their animal food. Dogs were not eaten, but crickets, grasshoppers, and angle-worms were not disdained. Salmon were secured up as far as the Falls in abundance, and were dried and kept in large baskets, or sometimes crumbled into a coarse meal. Other sorts of fish, together with crayfish and mussels, were also eagerly sought.

Food was cooked either by boiling with hot stones in baskets or by baking in an oven of heated stones, or was roasted. No salt was used, it is said, by the Achomawi, as they thought its use caused sore eyes.

Various methods were employed in hunting deer. The use of pitfalls, which gave the name to Pit river, was common. These pits were six to ten feet deep, covered lightly with sticks and earth, and were excavated in deer trails. No one must look down into the pit after it is dug, as to do so would make the deer look down, and avoid the trap. All the earth removed was carried far away in baskets. Other methods used for getting deer included setting nooses; driving, either by beaters or by fire; stalking with a deer's head for a disguise and a whistle to imitate the cry of the fawn; and running down on snowshoes in winter. There were many regulations in regard to deer hunting. Children must keep quiet while the hunters are away; the latter must not use the common terms for the ordinary foods or the various places they passed, as to do so would bring bad weather; and the jaw-bones of all deer killed must be hung up on trees. The first day of a hunt there was a ceremony in the evening. The food for the evening meal was spread

out, but before eating, the leader of the party must take certain roots, chew them, and then throw a little toward every prominent mountain in the region, saying "Here, here is food we have brought for you! Eat it!"

Rabbits were either snared in nets by drives, and killed with a club, or shot with bow and arrow. Spring-traps were also sometimes used for rabbits, as well as for squirrels, wildcats, etc. Ducks and geese were caught in nooses hung from ropes stretched across a stream close to the water. The two ropes were placed close together, and each noose was tied to both ropes, so that the two were held closely in contact. The nooses were then slipped between the two ropes which held the nooses open. In salmon fishing, nets, spears, and traps were used. The first method was confined mainly to small seines, held across the mouths of tributary streams, while men went above and drove the fish down into the nets. Dip-nets were used for suckers and trout. Spearing was done with the usual salmon-gig. Traps and weirs were partly of posts and brush, and partly of stone. They were frequently put at the foot of a small fall, and were provided with long poles arranged along the top, slanting up from the top of the dam, and extending out four or five feet. The fish in trying to leap over, fell back into a net spread along these poles, or onto a rough open-work platform laid on them. Fish-hooks, of two pieces of bone, were used for trout and pike. In drying salmon, the fish was split, the backbone removed, and the fish dried in the sun. It was then slightly roasted, doubled up, and packed in large baskets which were set on bark and covered with large slabs of it, or else put up in the branches of juniper trees, from which the bark and lower branches had been removed.

The bow and arrow were the chief weapons of the Indians of this area. The former was of the broad sinew-backed type common to the northern portion of California, and seems to have differed little from that of the Klamath River stocks. If anything, it was more like the Maidu bow. Among the Atsugewi, at least, the bow was held horizontally in shooting, with the palm of the hand up. Each man marked his arrows in a different way. Quivers were of wild-cat, coyote, or otter skins. Elk-hide armor was used, consisting of a long gown-like garment, covering the whole body, the head also

being protected by a strip of hide. Grizzly-bear skins were sometimes used in place of elk-hide. Rod or stick armor was also made, the hard mountain mahogany and the service-berry being the woods used for the purpose.

There was comparatively little opportunity for the Indians of this region to make use of canoes. They made them, however, burning and digging them out of yellow-pine or cedar logs. They are said to have been rather square-ended, and ranged up to twenty-five feet in length. Both poles and paddles were used to propel them. Rafts of tule were also employed.

Baskets formed the main portion of the household goods. These were made exclusively of twined weaving. They were as a rule soft and pliable, except the conical pack baskets, which were strengthened and stiffened by the addition of four sticks. The baskets and their decorations have been elsewhere discussed.¹ Mush paddles were used in stirring acorn soup, but were mostly undecorated. Spoons were little used, although the breast-bone of the duck was employed for the purpose. A porcupine tail was used as a comb. Pipes were of wood or soft stone, tubular, and rarely more than six or seven inches in length. The musical instruments in use were a flute and a whistle. The former had four holes and was played only for pleasure, and never in summer on account of the snakes. The whistles were generally double, of bird-bone or elder, and these were used in dances by shamans. The split-stick rattle and deer-hoof rattle were both in use.

A number of games were played by the Achomawi and Atsugewi. The four-stick game, using ten counters, was a favorite; also the stick game in which thirty or forty slender sticks and twenty counters were used. A form of the hand game was known to the women, in which they used two pairs of sticks about two and a half inches long, one of each pair being marked by a band. The hands were concealed under a handkerchief about the neck, and the opponents guessed the relative positions of the sticks. Ten counters were used in this game. The same game, played in the normal California manner with grass, was employed by the men, and so far

¹ Basketry Designs of the Indians of Northern California, *Bull. Amer. Mus. Nat. Hist.*, XVII, 14 et seq.

as information goes was practically identical with the form described among the Maidu. Dice games do not seem to have been played. The double-ball game, and a form of foot-ball in which three players take part on each side, are also in use. The double-ball game is played chiefly by women. The Atsugewi at least had a form of hockey, played by the men, and a game in which arrows were shot at rolling disks of bark; also one in which spears were thrown, he who could place his nearest to the first one thrown, being the winner.

For the greater part, the Achomawi and also the Atsugewi were at war with the Modoc. These latter frequently made incursions into Achomawi territory, but the Achomawi rarely attempted to retaliate in kind. In such little trade as there was between the two peoples, the Achomawi gave beads for furs and bows. Intermarriage sometimes took place. With the Wintun there was considerable trade, skins being offered for beads, and in general the relations were friendly. With the Maidu of Big Meadows, the Atsugewi traded, and were on pretty good terms, intermarriages being not uncommon.

Little investigation has as yet been made in regard to social organization and kindred topics. So far as information was obtained, there is no trace of a clan system, and these people therefore are similar in this respect to the majority of California Indians and those of the adjacent portions of the Great Basin. Governmentally, it may be said that the chiefs or village head-men had somewhat greater power than among the Maidu, resembling in this the chiefs among the Shasta. Each considerable village had its chief, whose brothers or whose children succeeded him, the eldest son usually taking the lead. The chiefs were not elective, and could not be deposed (?). There were four or five important chiefs among the Atsugewi, and rather more than this among the Achomawi. In war these men seem to have led the people, but there were apparently no general leaders or chiefs who controlled several villages, or the whole group.

Puberty ceremonials centered about the piercing of the ears. Boys have this done at the age of seventeen or thereabouts. The ear-lobe is pierced with a sharp wooden awl, and as soon as it is done,

the operator, who is generally the father, shouts loudly and whips the boy with a bow-string. The boy at once runs away to some distant lake or spring, where he bathes and swims all night, fasting. As he goes, the man who has pierced his ears, calls to the mountains and to the Deer-woman to watch over the boy. Early in the morning the boy runs back again, lighting a series of fires as he goes. While he is bathing during the night, he may find something in the water, or may dream of it later when he takes a little sleep. That object or animal is his protector for life, and comes to warn him of danger and to aid him. Should he fail to get such a guardian, he may not try a second time. After this first experience, he must spend several nights alone in the hills, fasting, building small fires, piling up heaps of stones, and sleeping but little. All the time he is absent he must drink through a reed, failure to comply with which regulation would lead to the loss of his front teeth. In returning home, he may not come directly back, but must stop at a distance. His mother brings him here a little food, after eating which he goes off again into the hills. By no means all who go off thus see visions or get protectors. Most of those who do become shamans.

In the case of a girl, the proceedings are as follows: The ears are pierced in the same manner as described, and as soon as it is finished, the operator seizes the girl, lifts her from the ground and lets her down again, and then strikes her with an old basket. At once the girl runs off, while the operator prays to the mountains to be good to her. The girl gathers wood and returns at dusk, and all night dances back and forth before the fire which she builds. She faces constantly toward the east. Other people dance near her, and also inside the house. She must sleep and eat but little, and can have no meat or fish, and must not smell them cooking. She wears a band of braided bark about her forehead, and a new pair of moccasins on her feet. Sometimes she puts strong-smelling herbs in her nostrils so that she may not smell meat cooking. The people who dance and sing near her have a deer-hoof rattle. The girl dances thus every night for five nights, and at sunrise she stops, is lifted and dropped as before, and immediately runs off to the eastward, seizing, as she goes, the rattle from one of the dancers or singers. On the last morning she returns quickly, is sprinkled by

her mother with pounded fir-needles, then bathes, and the ceremony is finished. The whole ceremony of the dances is repeated at the next two menstrual periods. Later in life the monthly seclusion lasts three or four days, and certain food restrictions are in force.

A man who desires to obtain a wife asks the parents of the girl directly, and if they approve, the affair is settled at once by the payment by the suitor of such property as has been agreed on, and he then takes up his residence with the girl's family. He stays there, hunting and working for his wife's family for a month or two, and then if he has parents, takes his wife to their house; if not, he remains with his wife's family. Child betrothal was not, infrequently the custom. If a man is dissatisfied with his wife, or if she be barren, he can send her back to her family. If a man's father tells him to send his wife back, he must obey. Polygamy was general, the number of wives depending on a man's wealth. The first wife was always regarded as the most important. "Berdashes," or men-women, were not uncommon.

In childbirth there were food restrictions for both man and wife which lasted until the umbilical cord dropped off. Both parents must live apart, in a small hut, the man gathering much wood. All water taken by the mother must have a little earth mixed with it. At the end of the period of seclusion, both man and wife must bathe. If a child is stillborn, the parents must keep up the food restrictions for several months. A child's first teeth, when they come out, are placed in its feces.

The funeral customs of these Indians are simple. The body was buried as soon as possible after death, generally in a flexed position, and if the family could afford it, in a large basket. It was laid on its side in the grave, facing to the east. All the property of the deceased was put in the grave with the body, together with gifts made by relatives and friends. Sometimes, and particularly if death took place at a distance from home, cremation was employed, in which case the property was burned with the body, and the ashes afterward buried. Generally the house of the deceased was burned. There is said to have been no dance held at the time of the funeral ceremonies among the Achomawi, although the Atsugewi say that they themselves had a dance, in which men carried the weapons of

the deceased, and all relatives threw handfuls of dust into the air. In mourning, the hair was cut, and pitch put on the face and head by the widow, who wore it thus for two or three years. The Atsugewi state that men sometimes put pitch on also. The widow made a belt of the hair she cut off, and wore it. If a man's wife died among the Atsugewi, he cut his hair, and his nearest female cousin wore the belt made of it. Widows also wore a necklace of deerskin, with beads of pitch. The name of the dead was not spoken. No widow may remarry until her hair grows down to her upper arm again, and then she may marry only her husband's brother.

Notes on the shaman have been previously published,¹ but some additional particulars may be added here. The youth who is fasting and bathing at puberty dreams or has visions of the thing which is to be his guardian spirit. The thing seen may be a bird, an arrow, a reed, or a tree, or it may be a "disease person" or spirit in human form which sings to him, and appears before him. He must sing the song that the supernatural being sings to him, and very carefully follow his instructions, else he will fall ill. The shaman can hear the mysterious objects or beings singing ever afterward. According to the thing seen is the shaman's power to cure or cause disease—from one coming the power over one sickness, from another the power over a different one. In curing a patient, the shaman among the Atsugewi makes use of songs and also of the *qagu*.² One of these is tied to a pole set up near the house, or is held in the hand, or used to sprinkle the patient. The *qagu* tells the shaman where the pain is, and aids him to remove it. While dancing, the shaman frequently bleeds at the mouth.

The "pains" grow in size and strength by killing people. If the shaman does not catch the "pain" when it returns to him after killing the person it has been shot into, he loses all control over it, and it goes about killing people of its own initiative. This is the cause of epidemics. The only sure way to put an end to its depredations is to kill the shaman to whom such a "pain" belongs, for at the death of a shaman all his "pains" die also. Sometimes a

¹ Some Shamans of California, *Journal of American Folk-lore*, xvii, 24-25.

² Ibid., p. 24.

"pain" is sent by an enemy to a village. It causes much sickness, so that a shaman has to be sent for. When he comes, he finds the spot where the "pain" lies concealed in the ground. Then, with the aid of another shaman, he tries to drive it out. After dancing all night, the two shamans and all the people of the village gather in a circle about the spot. One of the shamans approaches, holding out his hand in order to scare the "pain." Sometimes the latter tries to deceive the shaman by urinating upward, but the wise man is not deceived by such trickery. He waits till by the force of his power the "pain" is forced out of the ground, and then catches it on the end of the middle finger of his hand. The "pain" cannot escape sideways, because of the ring of people; it cannot go back into the ground, nor can it fly upward, as the shaman's guardian spirits hover above, and drive it back. Gradually the "pain" is forced to the palm of the shaman's hands, while he is staggering about as if intoxicated. Suddenly he shuts his hand, imprisoning the "pain," and at once falls senseless. The second shaman then brings a basket of water, plunges the fist of the first shaman into this, and then slowly the first shaman revives. The "pain" is softened and made innocuous by the water. When the shaman revives, he tells the people what the "pain" has told him in his trance, and who it was that sent it. The "pain" is then destroyed, either by swallowing, or burying it in the ground under the fire, or is sent back to its sender, with orders to kill him. If a shaman tries to kill a person, and is found out, the relatives endeavor to kill the shaman, and then mutilate his body.

In doctoring, the shaman wears a bunch of woodpecker feathers, like the mysterious *qagu*, on his head. Sometimes also he wears a yellowhammer band like those of the Maidu, or a strip of mink or other skin. He wears the skin of the animal whose spirit appeared to him in his dream at puberty. If he saw the bear, he wears a bear-claw necklace. The shaman also acts like the animal so far as he can, pawing up the ground or digging as a bear will for roots, or howling like a coyote.

Ghosts are seen about burial places. They emerge from the ground and sink back into it again. Shamans see them more commonly. For a common man to see a ghost causes a peculiar sick-

ness. The man feels very sleepy, has a headache, and swelling over the eyes. Shamans can by dreaming determine the trouble in such cases, and by sucking the forehead, cure the patient. No "pain" however is removed.

After death the spirit was thought to go to the westward, to an underworld where all things were delightful. To reach this spot, the spirit travels along the Milky Way. Spirits may return to this world and appear in dreams. Some shamans can visit this other world, and tell of their experiences. People have died and come to life again and told of their journey. They came to a place where the sun goes down, and looked over the edge of the opening into the underworld. Just before death, the spirit leaves the body, and stands about looking on at people, and at such times the shaman can see the spirits, and tries to seize them and force them to reënter their bodies.

There seems to have been comparatively little in the way of ceremonials apart from those described. The Achomawi and Atsugewi thus accord fairly closely with the Shasta, in this feature of the paucity of ceremonial. The mythology of this area has already been discussed.¹

In conclusion, it may be said that from this brief sketch of the culture of the Achomawi and Atsugewi it seems clear that they were similar on the whole to the Shasta, although with several minor features reminding one of the Maidu and other central Californian peoples. The similarity to the Shasta is shown most strikingly in the religious beliefs and mythology, the material culture exhibiting more the influence of the changed environment.

HARVARD UNIVERSITY,
CAMBRIDGE, MASSACHUSETTS.

¹ The Mythology of the Shasta-Achomawi, *Amer. Anthropologist*, n. s., VII, 607-612.

PETROGLYPHS IN SOUTHEASTERN ALASKA

By GEORGE T. EMMONS

Primitive man throughout all ages and in all regions has ever shown a desire to perpetuate the history of the past and to record the story of his life. Wanting in specific characters, he employs pictures, carvings, and structures—the direct product of his surroundings—to illustrate and transmit his traditions, genealogy, and pursuits, and these are realistic or conventional according to his development.

The Tlingit of southeastern Alaska, living under most favorable conditions of climate and food supply, with abundant leisure to cultivate an innate sense of art, evolved in time a rich ceremonial that had for its purpose the glorification of the family in the display of the totem, or the practice of shamanistic rites which constituted his nearest approach to any form of religion or worship. Having at hand a variety of material, as rock, wood, grasses, the pelts of animals, and wool for weaving, besides mineral and vegetable coloring substances, his thoughts found expression in many forms of art, and he carved, painted, or wove realistic and conventional forms upon all of his belongings, which give that distinctive character and wealth of color to the life of this section.

Most permanent but least intelligible of all the earlier works of the Tlingit are their petroglyphs, which are of frequent occurrence in the vicinity of old village sites on the islands of the Alexander archipelago and the adjacent littoral. The present generation, even the oldest natives, have no knowledge of their origin or of their *raison d'être*. Some even deny that they are the product of their ancestors, and attribute them to a stranger people who in traveling along these shores, before their existence, made such signs to guide them on their way in returning or in again going over the ground; but this explanation is not worthy of consideration, for the carvings are very often in secluded bays beyond the routes of travel. The glyphs mark old living sites that are still traditional with the people,

and aside from the circles, spirals, and a few indistinguishable figures, they agree too nearly with the characteristic art of the Tlingit for us to ascribe them to others.

While some are found on prominent ledges and cliffs overlooking the water, in most instances the petroglyphs ornament isolated boulders and beach rocks imbedded in the sand of the shore near the level of the tide. In the latter position they would seem to have served no useful purpose other than as a record of some tradition or legend, or as a means of displaying the emblem of the clan. In some instances they are simply the product of leisure moments and that love of the ornate that manifests itself throughout the life of this region.

In all the petroglyphs examined and here illustrated the grooves are apparently made by pecking and are in width from one half to three quarters of an inch, ranging in depth from one eighth to one fourth of an inch according to their state of preservation.

Some of the glyphs show considerable age, while in others the marks of the pecking implement are still clearly visible. From the corroborative evidence of contemporary events I can state that the one here discovered on Baranof island was in situ at the beginning of the nineteenth century; but how much earlier is unknown, for the Kake-satter family of the Sitka tribe, whose country this was, say that their chief, Katlean, who led the attack and destroyed the first Russian fort at Old Sitka in 1802, had a house on the shore at this point and used this rock as a seat.

What appear to be the older carvings show less realism, are more severe in outline, and are wanting in detail; and more often the principal characters are joined by means of numerous lines, circles, and irregular forms that are meaningless in themselves, but serve the purpose of making one connected picture, which, I believe, always represents a story. In those carvings that, from the roughly-pecked fractures made by the hand-stone, can be identified absolutely as of more recent workmanship, the forms are very true to nature and are much more ornate; and in a majority of cases the figures occupy separate fields, or, if together, are not connected and apparently bear no relation to one another.

In 1888, while hunting in one of the deep bays that indent the



Extreme length, 18 in.; Width at top, 12 in. (Am. Mus. Nat. Hist., E-2206)

PETROGLYPH (FACE) IN SOUTHEASTERN ALASKA

western coast of Baranof island, I met a very old native who claimed the locality by hereditary right, and in consideration of some presents was induced to show me a carved rock that my native hunters knew existed but had never seen.

It was near the mouth of a stream, at the edge of the woods, a short distance above the high-tide mark. Hereabouts, at least a century back, was a small village of which nothing remains and even the exact site is uncertain. The boulder was irregular in shape but approaching a pyramidal form, some four feet high and of equal dimensions at the base. It was partly covered by a great decayed tree trunk, and wholly concealed by the branches and high salt-water grass. We could remove the obstructions from but one of the three faces, which was completely covered with a single closely connected picture, made up apparently of five principal figures. The grooved lines were almost obliterated in places by weathering, giving evidence of considerable age. The two covered sides were, I believe, ornamented. Although I could not clear them more than to feel some grooves, my guide interpreted the design, not perhaps from his own ideas, but rather from what he had been told by those who had gone before. When I had finished my examination, with something akin to reverence he covered the markings over completely with branches and debris, and as he and the native hunters who accompanied me have long since gone to their fathers, it remains to-day a forgotten monument of the past.

The picture (fig. 44) will be seen to be a complex arrangement of distinct figures connected throughout, and while my guide, who was a very primitive old Tlingit, could identify only the individual forms, to any one familiar with the mythology of this people their context clearly tells the oldest story of mankind—the creation.

This legend, common to all the Northwest Coast tribes, is too familiar to need repetition in full, so I will merely mention the salient features for a clear understanding of the picture.

The world in the beginning was a chaotic mass of rock and ocean, enveloped in darkness and possessed by a few powerful spirits which jealously guarded the elements necessary to human life. A benign spirit, known as Yehlh, who assumed many forms but more often appeared in the guise of a raven, came upon the

scene, created man, and wresting from the other spirits light, fresh water, and fire, he governed the winds, gave to his children all these benefits, and then disappeared.

In the picture Yehlh is beneath figure A, and is distinguished by the head and long bill attached to what appears to be a body with a leg and a foot in the double curved line depending from the head. To the rear the tail coming from the circle connects with B, which

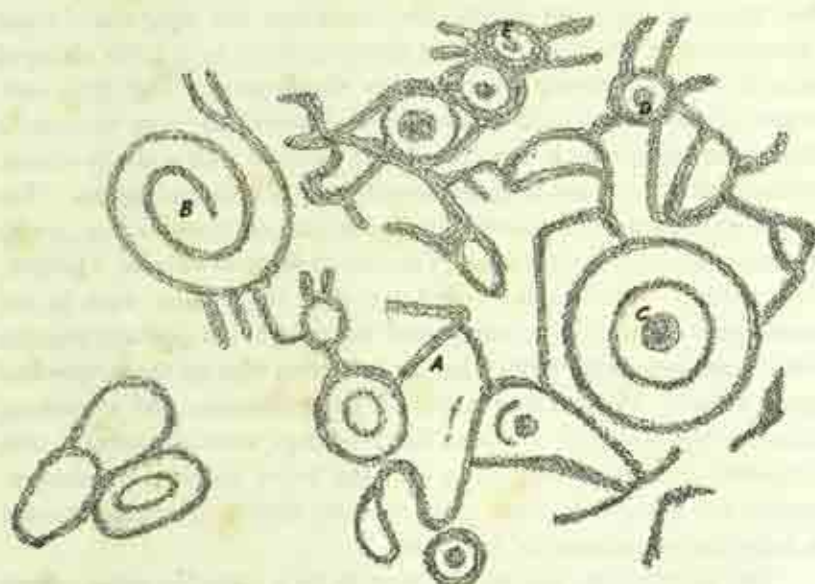


FIG. 44. — Tlingit myth represented in a petroglyph.

my interpreter named *una kgna hihk*, 'where the sunlight comes from.' In the bill of the raven is a half obliterated line which might signify the piece of fire that Yehlh stole from the sun and gave to the earth, but his principal connection with the sun was its release from captivity to light the world. Joined with the raven above and to the right is a figure, made up of three concentric circles (c), that represents the earth. Directly above this is a highly conventional form (D) identified as Hoon, the north wind, that plays an important part in the life of this northern country. To the left, above and over the center (E), is Kun-nook, the guardian of fresh water, shown often in painting and carving as a wolf form, from whom Yehlh stole



Width, a to b , $1\frac{1}{2}$ in.; Height, b to c , 21 in.; Depth of incision, about $\frac{1}{16}$ in. (Am. Mus. Nat. Hist., E. 2207)

PETROGLYPH IN SOUTHEASTERN ALASKA

a few drops in his bill and which, as he flew over the world, he let fall here and there, forming the rivers and the lakes.

The illustration is from a simple sketch made on the ground; it does not pretend to exactness, but is a fair representation in general outline and proportions. Age and the elements have almost effaced some of the grooves, and possibly others are wholly lost, which would account for several sketchy lines beyond figures A and C and in the lower left-hand corner, but by feeling the depressions and filling them in with black beech mud I was able to bring out the design very clearly.

Near the northwestern extremity of Etoline island, included between two jutting rocky points, is a stretch of sand beach, and scattered along at and above the level of the tide are numerous smooth dark-gray rocks, seldom exceeding three feet in dimensions, irregular in shape, but generally presenting a flattened surface suitable for petroglyphs. Nearly all of these bear single figures, pecked in shallow grooves, representing a variety of subjects that in most instances are so realistic that the artist's meaning is unmistakable. Parts of several have been obliterated by the elements and the wash of the tide, or have never been finished, which make their identification uncertain, while two or three in which several indeterminate figures are grouped convey no intelligent meaning to the native. The animal designs, which largely predominate, are all totemic in character, representing the principal emblems of the family divisions of the Stikine tribe that inhabits this locality. Within the limits of the choice of subjects it would appear that the shape of the rock surface to be ornamented determined the selection of the particular character to be employed, that it might cover the greater space.

These carvings are unquestionably of two distinct periods. In the older ones the grooves are worn smooth and in places are almost lost to view through weathering and the action of the higher tides. Others, of a comparatively recent date, show the roughened indentations of the pecking implement. I can only offer in explanation of this difference that the old village site at this point was occupied at two different periods, which with the Tlingit was not an uncommon practice, as I can point to half a dozen living places that have been occupied, deserted, and reoccupied in turn. The natives here-

abouts can offer no explanation for the making of these pictures, nor as to their age; they simply say that they were there in the lives of their father's fathers, which means nothing.

The following illustrations are likewise from rough sketches which merely give the picture and do not pretend to exactness of proportion.

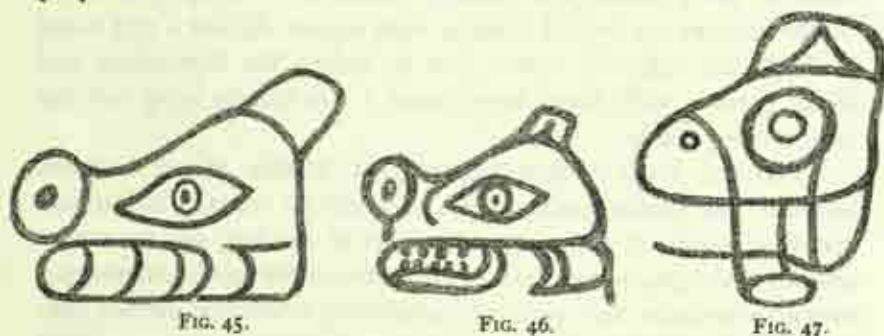


FIG. 45.

FIG. 46.

FIG. 47.

Figures 45 to 47 represent *goutch showee*, wolf's head, which is distinguished by the prominent nose and ears. In Fig. 45 the teeth are indicated by the divisions of the mouth. In Fig. 46 the teeth are expressed by the marks, back of which wrinkles of the jaw are shown in the two curved lines, and the same are found in Fig. 45. Fig. 47 is a more conventional expression. The ear identifies the wolf's head more than the nose, which, though prolonged, is not so characteristic. The peculiar figure depending from the eye and the nose cannot be explained except as an individual conceit of the artist added for ornamental purposes, but I would suggest that it has some connection with the nose and nostril that in the drawing are not accentuated.

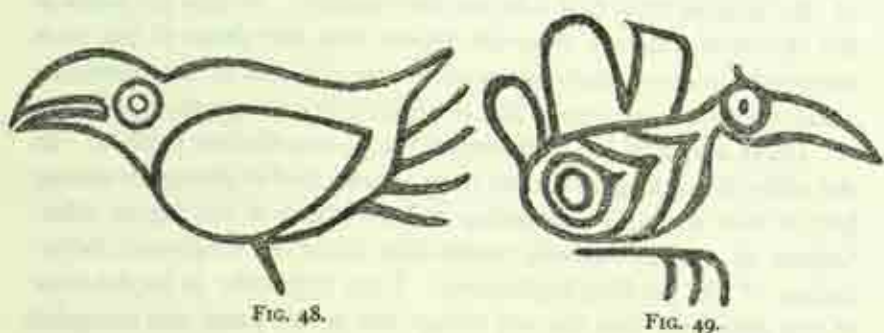


FIG. 48.

FIG. 49.

Figure 48 represents a very realistic raven form, *yeklh*, determined by the bill in particular.

Figure 49 is a more conventional type of the raven. The wing, in a fan-

ciful double form, is shown over the back, and the tail in the rear. The bill in this figure is truer to nature than in the previous drawing, and a slight crest is shown over the head which is often added to the conventional form. The markings of the body, while ornamental in character, also refer to the internal structures.



FIG. 50.



FIG. 51.

Figure 50 is identified as the head of a sandhill crane, *dulth shooet*, the typical feature of which is the long bill. In the picture this is suggested rather than expressed, the continuation being left to the imagination, for I could not distinguish the grooved lines beyond the point shown, which from their direction would indicate a great length before meeting. The long neck, which is a feature of this bird, is shown by the single curved line beyond the head. I would suggest in explanation of this petroglyph that for some reason the artist for want of time may never have finished it beyond this point, or possibly he exhausted his field, for it measured 14 ft. in length by 12 ft. in height.

Figure 51 shows the head of an eagle, which is easily recognized by the large curved upper bill turned down almost at a right angle to its outward course. The ear or crest on the head is regarded more as a head-dress ornament such as a chief might wear, and as the eagle is one of the highest emblems of a family, the head in pictography is often so represented as a token of esteem.

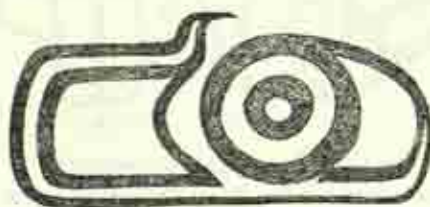


FIG. 52.

Figure 52 is identified as *chak quiddie*, eagle's nest. It is a conventional design, very similar to the carvings found on old feast dishes from the Haida and the Tsimshian. In form it represents an eagle's head. The upper and the lower bills are in one, and the shape of the head, so noticeable in that of the

eagle, is marked by the curved rise above the eye. This picture is 18 ft. long by 10 ft. high.



FIG. 53.

Figure 53 represents a killer whale (*Delphinus orca*), readily recognized by the exaggerated dorsal fin that distinguishes it from the other members of the whale family, all of which have the blunt head, blow-hole, and large tail. In this figure the water-spout from the circular blow-hole is shown. The under fins take the form of arms and hands—an artist's license often employed. The body ornamentation besides decorating a bare space is a sketchy representation of the internal structure and organs, the curved line indicating the intestines.

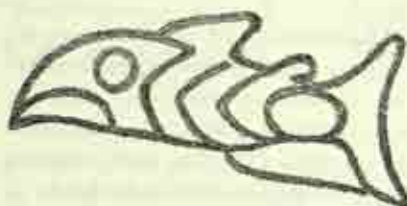


FIG. 54.

Figure 54 is an excellent drawing of a salmon, *khat*. The head and the fins and tail are most characteristic. The ornamentation of the body shows the gills and the bone structure.

Figure 55 is an easily recognized shark, *toose*. The characteristic features of this fish are primarily the pointed head and the heterocerc tail; but this drawing is true to nature in its entirety—a wonderfully accurate and artistic piece of work.

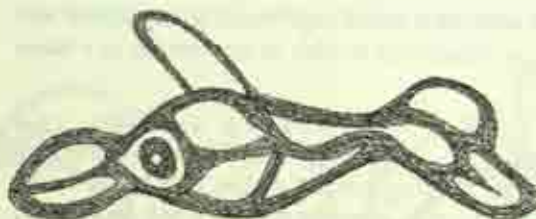


FIG. 55.

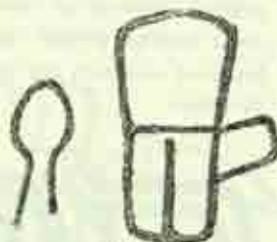


FIG. 56.

Figure 56. The main figure shows the copper, *tinnah*. It consisted of a shield-like plate, varying in size from tiny ornaments worn on the dancing robe or as ear-rings, to like forms four feet in height. While hardly to be called money, these coppers had a commercial value according to their size, and again they had an imaginary value according to their use and ownership. They were a sign of wealth, and were given away, whole or in pieces, upon potlatch occasions, displayed or placed upon mortuary columns. Originally

they were hammered out of native copper, but later they were manufactured and traded to the natives. The feature of a projection or handle on the side is unexplained. The unfinished figure appears in juxtaposition as shown, but is unidentified.

The numerous circles and spirals that are always in evidence whenever petroglyphs occur are variously interpreted by the best informed natives, and while in some cases there seems to be a general agreement, I do not know that we get at the meaning of those who executed them.

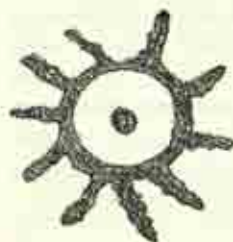


FIG. 57.



FIG. 58.



FIG. 59.

Figures 57, 58, 59 are said to represent the sun, which is emblematically used in carved forms and less frequently in pictography by the Tlingit. The wooden rattle—more often that of the shaman—which typifies the sun, is circular in form and hollow in the center or has a carved face within a smaller circle. In several cases the rays are represented as grooves or lines of inlaying, radiating from the center. The identification of Fig. 57 as the sun seems to be very reasonable, agreeing with the rattle form described. Figs. 58 and 59, consisting of concentric circles, are similarly identified, and are subjects of reasonable doubt, I should say, as this design is also used to represent the earth.



FIG. 60.



FIG. 61.

Figure 60 is said to represent the very old form of ceremonial rattle (*chuck-ah-kut-tar*) described by the earliest Europeans to visit the Northwest coast, and it has survived to within the last few years in its primitive form. It consisted of a frame of two circles of bent twigs lashed to two cross-bars at right angles to each other, which likewise served as a handle. The circles were hung with puffin beaks, deer dew-hoofs, or bits of ivory, horn, or bone, to make a rattling sound.

Figure 61 is identified as the wood-worm, which is a totemic emblem of one of the principal families of the Tlingit.

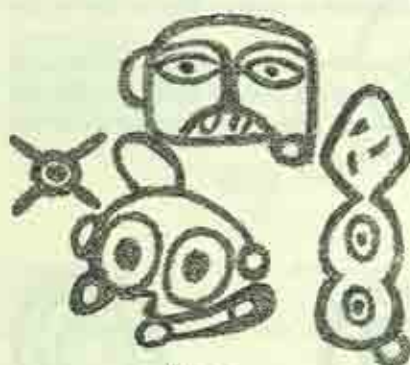


FIG. 62.

offer these explanations only as suggestions.

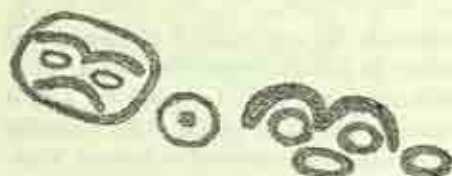


FIG. 63.



FIG. 65.

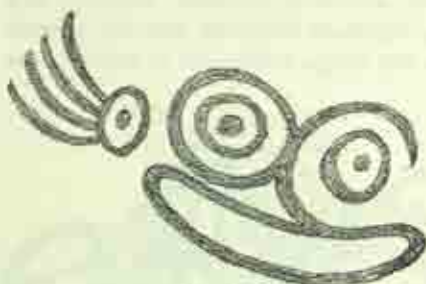


FIG. 64.



FIG. 66.

Figures 63 to 66 represent heads and faces, human or otherwise, rudely executed, half finished or partially obliterated. Fig. 63 appears simply as ornamental characters without any particular meaning. Fig. 64 is half obliterated. To the left of the head is shown what appears to be a hand or a foot. Figs. 65 and 66 are indeterminate faces.

PRINCETON,
NEW JERSEY.

PIMA TALES

BY HENRIETTE ROTHSCHILD KROEBER

THE CREATION OF THE WORLD

When Djivut Maka, Earth Medicine-man, was about first, it was all dark and he went around as a butterfly all alone. After awhile he began to think of creating the world. He went under the sea to get mud. He came up with a handful of mud, threw it up in the air, and it went up some distance above the sea. It stayed right there and did not come down. Then Djivut Maka stood on top of the mud and began singing. After a while the mud began to spread. It covered nearly all the sea, leaving open only what is water now. But it could hardly stand still. He made a spider and sent him to go around the edges and sew them. When the spider had gone round once and had the edges of the world all sewed up, it did not shake any more. Djivut Maka made birds, flowers, trees, animals, insects. Then he went around to see that everything was good. Then he thought of creating man. He took mud and shook it into the form of a man. Then he said: "In four days you shall be alive."

On the fourth day he came back. When he was a little way off he heard someone talking. When he arrived, there were two Apaches talking, and the other two were Pimas. The Apaches and Pimas tried to talk to each other, but they could not understand each other. Then the Pimas and Apaches always crossed each other. So one day Djivut Maka came and sent the Apaches away, and from that time the Apaches and Pimas have been enemies.

The Pimas and Apaches began to increase, and began to separate and live in villages.

Djivut Maka had a son, Siōhō. He sent his son around to see the people. He knew something was going to happen to his son. The boy went through all the villages and came to the family and saw a little baby there. This baby looked good, so the boy, who liked the baby, thought he would steal it. So at night he took the

baby and went back to his home. Before he got there he left the baby in the bushes. Then he went to his house where his father Djivut Maka was. When he got there he told his father that he had found a little baby. So his father told him to bring it. When Siôhō got to where he had laid the baby, there was water coming out of the ground where there had been no water when he laid the baby there. He did not take the baby, but ran back and told his father. Then the father said: "I thought I knew something would happen."

The water came fast and a flood was coming. People became frightened, and birds and animals too. The coyote (or fox) came to Djivut Maka and asked to be protected. He put the coyote in a wooden box and told him to stay there until the flood was over. The woodpecker came and asked for protection too. Djivut Maka told him to hang to the sky until the flood would be over. Indians climbed to the tops of the mountains.

Djivut Maka and his son had made a boat before the flood, because he knew that there would be a flood.

Some Indians climbed on the highest peaks and when the water was coming up to them they all wept. They had a dog there. The dog had been running about. After awhile he spoke like a man. As soon as the dog spoke, the crying people turned to rocks. The mountain, Igakotke, stands southeast from Phoenix, and the rocks on top look like men.

The water reached the sky. The woodpecker was still hanging to the sky. When he saw the water coming he was afraid and began to cry. The water came up and touched his tail. Then the water went down again. It all went back to the sea again.

Then the woodpecker and coyote, Djivut Maka and his son, came together again. Djivut Maka said: "There must be more people." They all sat down, took mud, and shaped forms like dolls. The coyote made people with only one leg. When they finished, Djivut Maka went around to see how they had made the men. When he came to the coyote, he asked: "How will those people walk, having only one leg?" He became angry and threw all the mud dolls into the sea and took the rest of them and changed them to people.

When all the people were finished, they began to learn from Djivut Maka, and after a while they knew nearly as much as he. These Indians could do everything, so the son of Djivut Maka became jealous of them, and sent sickness over them. It killed about half of them.

Then these people began to consult how they could kill Siôhō. They asked the buzzard if he could do it. The buzzard knew where Siôhō bathed. So he went over and boiled this water hot. Next day the boy came, jumped in, and was killed at once. The buzzard took him out and threw him on the shore. Then the buzzard went back and told the people that in four years this man would be living again.

For three years the boys threw Siôhō's bones about. The fourth year they went there again. When they arrived they saw a man sitting on the ground. He was old. The boys ran home and told the people. Then they came again. The old man was ready to go away. First he went to his father's house where he used to live with his father. When he got there he talked angrily about the people and they commenced to quarrel. This man Siôhō who had been killed said he was going away but would come back again and flood the land.

When he was ready to go he took four steps and then sank into the ground. His father tried to keep him back but he would not be kept. He gave his father all that we have and see in the world now. Djivut Maka told the people what his son had said before he went. He told them that some day there would be another flood. So even to-day the old people say, when anything goes wrong, that there will be a flood and everything will be covered with water and destroyed.

THE MAN CHANGED TO AN EAGLE

A man lived but had no home, so he went about and gambled. He cared for a girl and wanted to marry her. This girl did not want the man and told her father. The father gave her eagle feathers, saying: "Grind them up and mix them with pinole. If you ever see that man again, give him the flour with water to drink."

A well was a short distance from her house, where she went to

get water. One day as she went out to get the water this man who had no home was gambling with another man right by the road. As soon as he saw the woman go by, he said he wanted to get a drink. He did not want to drink, but to be near her. When he got to the well this woman told him to drink the pinole. After he had swallowed four times he became an eagle right away. The woman ran to the village to tell the people about the eagle she had seen. The men got ready with their bows and arrows to kill the eagle. When they came to the well they began to shoot at the eagle. The eagle just caught the arrows, and the men could not hit to kill him. After a while he began to fly and went to an old tree and tried to sit on it, but it broke, and he went on until he came to a high cliff. Then he made his house on that cliff and from there he went out to kill deer and all kinds of animals for food.

After a while he killed all the animals and could get no more to eat. Then he went to the villages and killed people. When he had killed half of them the people began to talk about it and tried to get some one to go up and kill that eagle.

There was one man whom they called Djivut Maka. This man had a son, Siōhō. This boy could do almost anything. So they sent him up to see if he could kill the eagle. So he went up there and when he got there the cliff was so steep he could hardly climb up. He sat down and began to think, and sang. He had a little stick and with it drilled holes in the cliff and kept on singing. In this way he climbed to the top.

The eagle was not there. But the woman the eagle loved was there. He had carried her from the village. The woman was glad to see Siōhō coming. He began to ask her where the eagle was. She said: "The eagle went away." Then he said he had come to kill this eagle. He asked the woman if she could do anything to help him. The woman said: "The eagle goes to sleep right after he comes from his hunting." This eagle had killed many men and piled them up on the cliff. So this man changed himself to a fly and went under the dead men's bones to hide himself.

Soon the eagle came back. Then he looked around for some one. After awhile he asked if any man was around. They had a little son, too small to talk understandingly, but he tried to tell the

eagle somebody was around. The eagle said he was sure there was somebody around, but after awhile he went to sleep, and the woman whistled for Siôhō to come out. But the eagle woke up again when he heard the woman whistling and asked her what she meant. The woman said she was only glad of the game he had brought back. The eagle went to sleep again. The woman whistled again. Then this man who had come to kill the eagle came out and with his hatchet cut the eagle's head off. They killed his little baby too.

Then he told the woman to boil some water. After this water was boiled he bathed all the dead men the eagle had killed. Some of them, who had been killed a day or two, came to life again after they had been bathed. Those who had been killed about ten days before came to life, but forgot about their home and where they lived. Siôhō sent these men who did not know their homes to the east, and from that time the white people commenced to settle all over the East. They were the people who did not know their home.

Siôhō and the woman went back to their home. When they got back all were glad to see the man who had killed the eagle that had carried off the woman and killed so many men. And that's the last.

SAN FRANCISCO,
CALIFORNIA.

THE NATIVE TRIBES OF LOWER CALIFORNIA¹

By ARTHUR W. NORTH

"Baja California, until half a dozen years ago, possessed the doubtful honor to be almost the least known territory in the world, with the exception of the polar regions and some few deserts and inland places, difficult and dangerous of access." Thus a noted geographer characterized the California peninsula in 1897, and thus I found it a few years later upon undertaking the compilation of its history and the exploration of its interior fastnesses. To-day, however, in consequence of the recent big-gun practice of the American men-of-war at Magdalena bay, and in view of the great commercial highway which the Panama Canal will open to its superb harbors, Baja California assumes a prominence that adds a popular interest to the ethnological value of all data concerning the native tribes of this little known Mexican territory.

Who first inhabited the peninsula?

On landing at the present site of the pueblo of La Paz, Hernando Cortés found a party of warlike Indians ready to oppose his advance into the interior. This was in the spring of 1534. A century and a half later Jesuit missionaries undertook the task of exploring, colonizing, and developing the country, and only their untimely expulsion by the Marqués de Croix in 1767 prevented these untiring workers from achieving success in their difficult undertaking. Prior to the coming of the padres various conquistadores and buccaneers had visited the southern part of the peninsula and found it thickly settled by Indians. In their logs the voyagers characterized these natives as brave in combat, skilful in diving, unaccustomed to the wearing of clothes, habitually possessed by an abnormal hunger, and always welcoming sweetmeats with yells of delight.

The missionaries quickly discovered that these same southern natives were divided into two main tribes, the Pericues, reaching

¹ Book rights reserved by the author.

from Cape San Lucas almost to the Bay of La Paz, and the Guaiacuras, disputing the northern territory of the Pericues and occupying the country northward for three hundred miles to Loreto, the early mission capital of the Californias. A third tribe, the Cochimis, roamed over the region immediately above Loreto. Their range extended northward hundreds of miles to the southern spurs of San Pedro Mártir sierra, the loftiest peak in the whole Baja California cordillera.

In the aggregate these three tribes numbered twenty-five thousand members. While they are said to have possessed, even prior to the coming of the padres, a traditional respect for a supreme being, their tribal life furnished no evidence of any recognition of governmental superiors. Indeed, their only class distinction seems to have been sexual: the men made war, hunted, and enjoyed themselves; the women did the necessary domestic drudgery. The Jesuits gathered readily enough such information concerning the early history of these Indians as the latter possessed. Their forefathers, they said, had lived originally in a country far to the north; having been driven thence by a fierce tribe, they had moved southward to the peninsula.

Doubtless the Cochimis were akin to the Yumas of Arizona and California, but the Pericues and Guaiacuras seem to have been distinct from all other tribes. In 1862 Francisco Pimentel, the noted Indian philologist of Mexico, conceived the idea that the Pericues might be related to the Indians of the Mexican mainland, basing his theory on the ground that one of the subdivisions of that tribe was known as the Coras; but after making a comparison of the vocabulary of the California Coras with one prepared for the Cora tribes of Sinaloa and Jalisco, he frankly admitted the lack of any similarity between the two tongues. Indeed, there was nothing in common between the languages of the Pericues, Guaiacuras, and Cochimis.

The three tribes were tall, healthy, and robust people. They had coarse, dry, black hair; white regular teeth; and well formed ears, eyes, and mouth. The skin of the coast natives was darker than that of the Indians farther inland. Among all, deformities were rare and drunkenness unknown. The men wore sparse beards. After the coming of the missionaries the women began to

clothe themselves, but the men looked with disfavor on any personal application of the fashion. The Pericues soon had the best garments, a sort of skirt or long girdle made of fiber or of deer-skins being the principal article of their apparel.

The habitations of these people were of the rudest description, consisting of caves, excavations in the earth, circular pens of stones, and arbors of thatch. A pile of leaves, or even the bare ground, served in lieu of couches or beds. Essentially a pastoral people, they feared the chance cold and enjoyed the prevalent summery weather. Although fish-eaters and killers of game, the flesh of which they cooked by casting the raw slabs into the flames or upon the coals, they obtained most of their food supply from the cacti. Despite the frequent harvests of fruit gathered from the latter, the Indians were always more or less hungry. They killed game and went into combat with long bows, thick in the middle and tapering at the ends. Their arrows were more than a yard in length. The arrow-tips were hardened in hot ashes, and feathers were attached close by the notched ends; for hunting large game and for warfare, a long, fire-hardened tip with a flint point was attached to the shaft. These natives were children in their enjoyment of games and their distaste for work.

The first explorer to come in contact with the Indians in the northern section of the peninsula was Francisco de Ulloa, the discoverer of the Colorado. This was in the year 1539. In the following year Melchior Diaz, a captain under Coronado, found his way overland to the mouth of the treacherous stream and promptly christened it "Rio del Tison." In Castañeda's narration of Coronado's expedition it is written that "after going about 150 leagues, they [Diaz and his picked escort] came to a province of exceedingly tall and strong men—like giants. They are naked. . . . On account of the great cold, they carry a firebrand (*tison*) in the hand when they go from one place to another, with which they warm the other hand and the body as well. . . . On this account the larger river which is in that country was called the Firebrand river."

Nearly two centuries and a half passed, however, ere definite knowledge was acquired concerning these people. Then, during

the last quarter of the eighteenth century, the Dominican friars, having succeeded to the peninsular missionary field, established nine missions in the country to the north of the Cochimis, whose border subtribes they called Limonies. The unfortunate Dominicans early discovered that they had come among a people far more warlike and powerful than those in the southern part of the peninsula. Indeed, many of the friars lost their lives before the fury of these northern savages. In their scanty records the missionaries characterized their ungodly children as "unquiet, proud, fickle, quick-tempered, treacherous, warlike, and difficult to govern." Finally, the garrison soldiery undertook the solution of the Indian question by taking the most unruly members of the fiercest tribes and placing them among the more tractable groups; but at the same time these military representatives of Christian Europe spread broadcast the tainting diseases of civilization, and the decimation of the natives ensued. This was at the opening of the nineteenth century.

Roughly speaking, the Indians of the northern part of the California peninsula may be estimated at 20,000, at the close of the eighteenth century. On the timber-clad heights of San Pedro Mártir sierra lived the Kiliwas — or, as they have been styled by the Mexican military authorities, the Cahuillas. These, however, are a Yuman tribe, and should not be confused with the Shoshonean Cahuillas of southern California. Along the western and northern spurs of this great range and reaching down to the mouth of the Colorado roamed the Pais, or Pai-pais. About Santo Tomás and San Miguel, near the modern pueblo of Ensenada, dwelt the Gimiels, doubtless a subtribe of the Yumas. About the mission of Santa Catarina, some fifty miles southwest of the mouth of the Colorado, was the main rancheria of the powerful Catarina Yumas, while between the Gimiels and the Catarinas, and extending to the present American border, swarmed the Diegueños, locally known as "Diggers." The populous settlements of the Cocopa tribe were scattered along the western bank of Hardy river and both banks of the Colorado, while its hunters traversed the intervening delta region.

While the Kiliwas, Gimiels, and Catarinas were primarily hunters and warriors, all these six northern tribes engaged more or

less in agriculture, the Cocopas having the broadest fields under cultivation. The Cocopas, Pais, and Diegueños were peaceful by nature, the Yumas perversely warlike, the Kiliwas implacable when injured. The lance and the bow and arrow served all alike in their warfare; but the Yumas alone of the distinctively peninsular Indians employed the scalping knife. The Cocopas, Diegueños, and Pais seem to have



FIG. 67. — A Diegueño hut in extreme northern Lower California.

gone innocent of clothing; the men of the other northern tribes wore fiber or deerskin moccasins, breech-clouts, and war-bonnets. In physique the members of all these tribes, excepting the Diegueños, surpassed those of the southern part of Baja California. I have seen Kiliwas and Pais well above six feet in height and of superb proportions. Indeed, though historians have regarded the *Tisonos* of Melchior Diaz as Cocopas, I am of the opinion that they were Pais Indians.¹

¹Under the name Pipi this tribe is mentioned by James O. Pattie in the *Personal Narrative* of his adventures and travels in 1824-1830, reprinted in *Early Western Travels*, edited by Reuben Gold Thwaites, vol. XVIII, pp. 200-201, Cleveland, 1905. The editor mistakenly regards them as probably the Pimas.

The end of the Baja California Indians is near at hand. Although they were a healthy people at the time of the coming of the padres, they did not long remain so, for measles, smallpox, and even worse diseases came into California on the establishment of the Spanish presidios and spread with frightful virulence among the natives. In seventy years the southern Indians were reduced to a scant five thousand; by 1794 none was to be found about some of the southern missions, and thirty years later it was recorded that not a single pure-blood Indian was to be seen below Loreto. Those who escaped disease, however, lived to an extreme age. So, indeed, do the Mexicans of Lower California today, and one may meet at Loreto even yet centenarians who tell of the closing days of the Spanish regime when the soldiers branded with red-hot irons each new band of Indians herded into the presidio.

The Pericues and Guicuras are now practically extinct. Of the former thousands of Cochimis perhaps a hundred still survive about the missions of San Xavier, Santa Gertrudis, and San Borja. I am inclined to believe, however, that those at San Xavier should be classed as Guicuras. The Cochimis are a good-natured people, far more formally religious than the neighboring Mexicans, and far more reliable workers; but they dress in similar rags.

Of the northern Indians there survive today remnants of the Cocopa, Catarina Yuma, Kiliwa, Pais, and Diegueño tribes, but only the first named can muster more than a hundred individuals. Warfare and the evil diseases, — tubercular not included, — with the tinned foods of civilization, must account largely for the vanished thousands. Moreover, as these imported evils swept away women as well as men, the old custom of polygamy has become obsolete and the high birth-rate of early days no longer prevails.

Pozo Vicente, the main rancheria of the Cocopas, is situated on the west bank of Hardy river; the Catarina Yumas live at the site of the old mission of Santa Catarina; the Kiliwas have two rancherias, Hwanuk and Arroyo León, both on the northern slope of San Pedro Mártir sierra; the Pais also occupy two rancherias, one called Dolores, the other unnamed, both lying between the mission sites of Santa Catarina and San Vicente. Finally, the Diegueños have two small villages immediately south of the border,

These latter Indians live, as did their kinsmen in Upper California, in temporary brush huts; the other northern tribes build more substantially of brush and stakes, roofed with earth and thatch. The shacks at Dolores are well constructed. In their agriculture the Diegueños, Pais, and Catarina Yumas have recourse to irrigation.

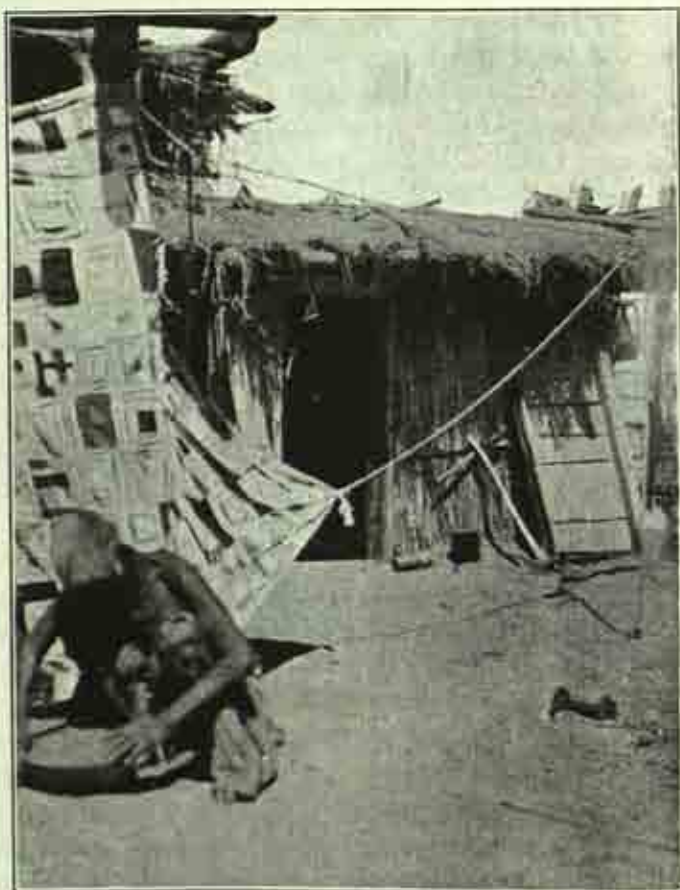


FIG. 68. — A Cocopa house near the Río Hardy. An aged woman in the foreground crushing mesquite beans for flour.

Among the Cocopas two types are seen: medium height, dark coloring, and stocky frame mark the prevalent type; fine bearing, greater height and less weight, handsome features, and a burnt-red

coloring distinguish the other. The Cocopas wear their hair long, and of all the tribes have the strongest predilection for facial painting. The Kiliwas pay the least attention to clothing. The Yumas and the Cocopas have the most attractive little children. The early mission training of these natives is evidenced by their continued devotion to the Roman Catholic Church (except the Cocopas, who seem to disregard such matters) and by the presence in their rancherias of sacred utensils saved from the ruins of the missions. Opening the hives of wild bees, gathering piñon nuts, and fishing are popular with all the tribes. Although these people are great meat-eaters, they also consume quantities of cakes which the women



FIG. 69. — A Pais house at Dolores.

make of a meal prepared by crushing on a metate the seeds of the mesquite and of other leguminous trees and plants. The Catarina Yumas, the Pais, and the Kiliwas all have a local reputation as *ladrones*, and the explorer may well be watchful when in their neighborhood. The native men and boys are adept in the use of long bows and arrows, but firearms are rarely seen in the villages. All are extremely fond of music. The following words are those of two songs of the Pais :

Hu-pa ma hup; sing yè a mi wai-sa.

*A no-che, cheu spili pow-wow, cheu spili pow-wow,
Yu-i, myu-mai, chi-wamai ka-ka, chi-wami kaka.*

The first line, again and again repeated, constitutes an old war song; the second and third lines are an ancient love song still in use among the Pais youth. In the Kiliwa language are found

such long words as *Pahamehamakaipa*, an American; *Marashripapchamakaipa*, an American girl; *chibiskwi-kwiro*, wire. Other terms are: *mezai*, good; *mahá*, meat. But before I can make report on the language or myths of these people, I have further work to do.

With the disappearance of the Baja California Indians the ethnologist will see but a repetition of the passing of the people that occupied the peninsula prior to the coming of the Indians of history. What people was this? For want of a better name I shall designate them the "Petroglyph Makers." According to the usual Indian tradition these men were giants, for time is ever prone to add to the stature of a superior people. To my personal knowledge five distinct groups of cliff writings bear evidence of these prehistoric inhabitants. Though modern writers have had no word to add concerning the Petroglyph Makers of Baja California, the Jesuits recorded their deep interest in them, and while some of their statements are exaggerated, due to the misunderstandings of the period, they are not entirely without interest. Turning to the work of Clavijero,¹ the eminent Jesuit historian of the eighteenth century, we find the following:

Observing the few ancient vestiges that remain there, it is rational to conclude that the vast peninsula was inhabited at an earlier time by a people less barbarous than those found by the Spaniards. The Jesuits, in the latter years of their management there, discovered in the mountains between the parallels of 27 and 28 various caves largely excavated in the living rock, and in them painted figures of men and women decently clad, and of different species of animals. These pictures, although rough, distinctly represented the objects. . . . Not belonging to the savage and tribal natives who inhabited California when the Spaniards arrived there, these pictures and dresses, without doubt, belonged to a people more ancient and unknown to us. There is a tradition throughout the country that it was a gigantic people who came from the north. We do not claim credit for these traditions, but from various exhumations of human bones by the missionaries it cannot be doubted that formerly the country was inhabited by men of disproportionate size.

After describing certain remains found at the Rancho of San Joaquin, below the mission of San Ignacio, by Padre José Robea in 1765, the author concludes:

¹ *Storia della California*, 1789.

Taking into consideration the magnitude of the cranium and the place occupied by the whole skeleton, and comparing the vertebræ with those of an ordinary skeleton, it is believed that the man to whom it belonged measured eleven feet in height.

According to Mallery,¹ a missionary thus expressed himself on the subject in 1790 :

Throughout civilized California, from south to north, and especially in the caves and smooth rocks, there remain various rude paintings. . . . The colors of these paintings are of four kinds : yellow, a reddish color, green and black. The greater part of them are painted in high places, and from this it is inferred by some that the old tradition is true, that there were giants among the ancient Californians. . . . [One] inscription. . . . resembles Gothic letters interspersed with Hebrew and Chaldean characters. . . . It is evident that the paintings and drawings of the Californians are significant symbols and landmarks by which they intended to leave to posterity the memory, either of their establishment in this country, or of certain wars or political or natural triumphs. These pictures are not like those of the Mexicans [Aztecs], but might have the same purpose.

Bancroft, in his *Native Races*, discusses the anonymous account, last cited, locating the writings as made on a cliff near the old Jesuit mission of Santiago, some leagues below La Paz, and concludes with the statement that "the only accounts of antiquities relate to cave and cliff paintings and inscriptions which have never been copied and concerning which, consequently, not much can be said."

I will now submit in outline such new and additional data relating to the petroglyphs as I have thus far been able to gather during my explorations. I shall present three new groups, as follows :

1. THE SAN FERNANDO PETROGLYPHS

An old Mexican directed me to these *jeroglificos*, as he termed them, in February 1906. At that time I was visiting the ruins of the Franciscan mission at San Fernando, founded by Junipero Serra in May 1769, immediately prior to his departure for Upper California and his notable career in that favored region. San Fernando lies on the 30th parallel of north latitude. A short half-mile northwest of the mission ruins there are several high cliffs facing the

¹ Mallery, *Picture Writing of the American Indians*, *Tenth Ann. Rep. Bur. Ethnology*, 1893, p. 132.

east, and on these the petroglyphs were found. According to the native legend these *jeroglificos* were made by a race of great stature who inhabited the country long before the coming of the Indians.

The design or character which appears by itself at the right hand of the group and resembles a Roman numeral is identical with one of the characters in the Santiago group. At the very top of

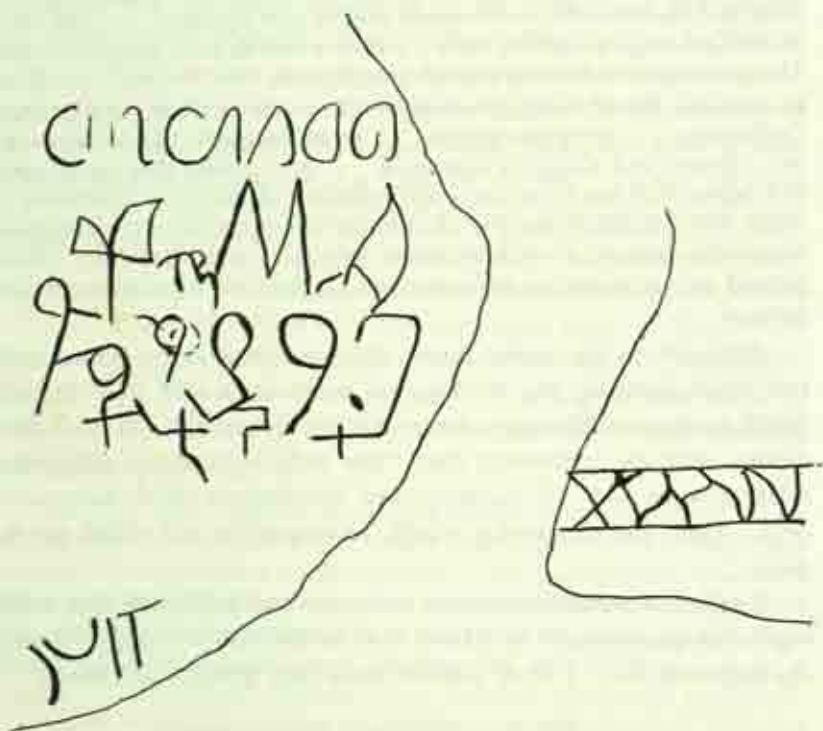


FIG. 70. — Petroglyphs at San Fernando. (Drawn by Ruth Haulenbeek.)

the cliff I deciphered certain letters, perhaps intended either for the Spanish *crus*, or the Latin *crux*—a cross, anyway. It is said that these were added by the padres to dispel the evil inherent in the inscription below!

2. THE SAN PEDRO MÁRTIR PETROGLYPHS

This group is situated about a hundred miles north of San Fernando, in an arroyo opening out upon the northern side of the

Sierra de San Pedro Mártir. As their existence is unknown even to the Indians, and as I discovered them at a time when the heat was so intense that even my Mexican muleteer shortly deserted me, I experienced some excitement in coming upon them. This was in August 1906. The group consists of four successive sets, all of them facing the east.

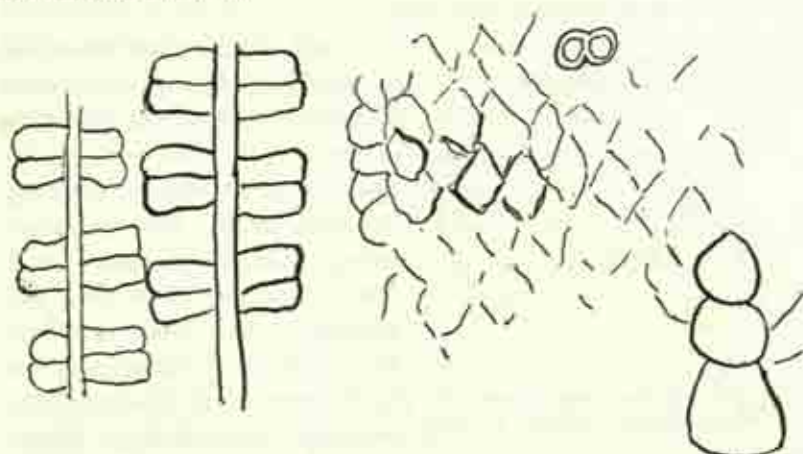


FIG. 71. — "Pine trees," San Pedro Mártir Sierra. (Drawn by Ruth Haulenbeck.)

The first set occurs on a boulder not more than fifty paces from the bed of the arroyo. The design of this petroglyph is that of a conventional human heart enclosing characters. The others are near together and occur about a hundred paces up-stream from the first, on bold granite cliffs high above the bed of the arroyo. One of the last-named sets represents several persons approaching two pine trees. As the only pines in the neighborhood are on the crest of the sierra in the direction taken by the figures, this petroglyph may possibly be regarded as a guide-post of the ancient people.

Clavijero, in recounting the San Joaquin discovery, mentions that in one of the caves paintings were found representing "men and women with garments similar to those of the Mexicans, but they were entirely barefoot. The men had their arms open and somewhat elevated, and one of the women had her hair hanging loose down her back and a tuft of feathers on her head." Oddly enough

the figures of this group are not those of nude Indians of the peninsula, but of people "with garments."

On a cliff just above the pine-tree cliff are two figures either of persons with broad head-coverings or of a quadruped with human head and shoulders. Beyond this set there is a panel of figures on a broad and wide cliff, and, at the farther side thereof, a sharp design shaped like an hour glass (fig. 72).

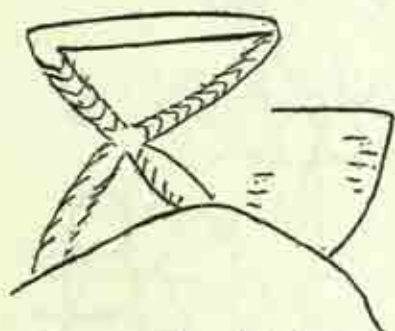


FIG. 72. — "Hour-glass" figure, San Pedro Mártir Sierra. (Drawn by Ruth Haulenbeek.)

Each of these last three sets of petroglyphs are more than four feet in height, cut in outline in the granite rock and the incision smeared with an unfading yellowish paint. Distance plays strange pranks with them, for at first glance they seem plain and accessible, but after one has worked his way laboriously toward them their inaccessibility becomes disappointingly apparent. Indeed, the people who marked these cliffs either had an abundance of rope ladders at their disposal or else lower buttresses of the crag have crumbled away.

3. THE ARROYO GRANDE PETROGLYPHS

These petroglyphs are pecked on a rock at a distance of less than fifty miles north of the last preceding group. The Arroyo Grande is an immense dry river-bed that debouches into the desert immediately southwest of the mouth of the Colorado river. It is a deep chasm in the midst of an excessively barren region. In one of the many rocky gorges that intersect the Arroyo Grande from the northwest there are eight or nine *tinajas*, or natural cisterns, where rainwater — when there is rain — collects, and the petroglyphs are cut shallowly into the face of a dark granite boulder set above the largest of the *tinajas*. In the lower right-hand corner of the cliff there appears a figure which may have been intended to represent a human being. Aside from this it would seem as though the scribe had attempted to make an inscription rather than to delineate

town of San Ignacio, the junction of numerous *caminos* dating back to the days of the padres. Some of these highways are said to antedate the Spanish conquest and to be relics of the skill of the Petroglyph Makers. Certainly a combination of many laborers with a remarkable knowledge of the art of road-building must have been essential for their construction.

To the north of San Ignacio a hundred miles lies the little mining pueblo of Calmalli, and only a few leagues to the west of the pueblo may be heard the booming breakers of the Pacific. On the cliffs of an arroyo near the shore appears a petroglyph showing unusual skill for this region, since the human figures and the designs represented are extremely well executed and enduringly elaborated with pigment.

A hundred miles still farther northward there rises a lofty barren range of granite mountains, and along the crest of one of its ridges a prospector recently found the remains of an ancient road cut in the rock. Before he had followed the road any great distance, the prospector's canteen failed him, compelling his retreat without having ascertained its objective. It would be interesting to explore this range, — and with relays of Indians to convey water, exploration would be possible, — for its course might disclose further traces of the ancient inhabitants. In this region and also in the vicinity of the Arroyo Grande *tinajas*, I found pottery similar to that made in the Hopi country of Arizona.

WALTON, NEW YORK.

AN EARLY ACCOUNT OF DIGHTON ROCK

By DAVID I. BUSHNELL, JR

Among various manuscripts once belonging to the Royal Society, but now preserved in the British Museum, the writer found the following communications made in reference to the "inscription" on Dighton Rock, Taunton river, Massachusetts, and also several drawings of the markings. Although the figures have been reproduced by several writers¹ we are unable to find that the letters have ever been printed, and as they contain some rather interesting notes they are now given in full.

The first letter (Add. MS. 6402, fol. 106 et seq.) reads thus :

"N. E. CAMBS.

Dec. 8th 1730

"I have according to the desire of some of the Members of the Hon^{ble} the Roy^{al} Society which you mentioned to me in your last, examined the remarkable Inscription on the Rock in Taunton River described in the Phil. Trans. No 339 pa 73 and herewith send a view of as much of it as I could then possibly take, N^o 1. A · B · C · D · E · represent the face thereof being a plane nearly perpendicular to the Horizon looking N 6 W, in length from B to D · 11½ feet and in Depth from C to E · 4½ feet. This seems to have been left by Nature very smooth & is certainly in its substance very uniform, compact & durable.

"B · G · D · represents the Surface of the Water at the time of Observation. I am informed that at some extraordinary Tides the Water ebbs below the Rock & some of undoubtful veracity belonging to the town assured me that the river has been constantly encroaching on that part of the Beach so as to waste the adjacent Lands which since the memory of many alive is something more distant from the Rock than formerly, tho' now but a few feet and that there are the like figures for some feet under A · E · which is the present surface of the Beach.

"In determining the characters or Figures I found some difficulty for the Indentures are not at present very considerable nor I think equally deep which put me upon the following Rule : vize, Carefully to trace out

¹ Garrick Mallery, *Picture-Writing of the North American Indians*, *Tenth Annual Report of the Bureau of Ethnology*, p. 762 and pl. LIV.

and Chalk all such places and those only which I believed were real Indentures, and in this part I desired the Revisal & assistance of the Rev^d M^r Fisher & others. Many places were passed over which did not seem to be indented, as to the Eye, tho' remarkably discolor'd, by some adherent matter in corresponding figures to the rest. I thought it more advisable to give such parts of these Characters as were real, that thereby the whole might be obtain'd; than to run the risk of a conjectural Description which would certainly endanger the discovery of many parts, and for this reason I must also note that the figures are not at all so well defined as I have expressed them, the Bounds being scarcely perceivable in some of them. The Stroake also may be something, tho' very little broader; their Direction being what I chiefly aimed at. Time is suppos'd gradually to have impair'd them and one of Advanced Years in the Town told me he was sensible of some Alteration since his Memory and for this reason I have also sent you No. II which is a Draught of some parts of this Inscription taken by the Rev^d M^r Danforth 1680. This Gentleman observes with relation to it, that there was a Tradition current among the eldest Indians; 'That there came a wooden house (and men of another Country in it) swimming up the River Assoonet (as it was then called) who fought the Indians with mighty Success &c.' This I think evidently shews that this Monument was esteemed by the oldest Indians not only very antique, but a work of a different Nature from any of theirs. It may not be improper to add here that this place was one of the most considerable Seats of Indians in this part of the world, and the River remarkable for all sorts of Fowls & Fish.

"After this description you may expect an Account of the Sentiments of some among us relating to this Inscription. Such as look upon it as the work of the Nature are little acquainted with her Operations and have made but a cursory Observation hereof. Two opinions prevail most.

"1st That these figures are the undesigning and artless Impressions of some of the Natives out of mere curiosity or for some particular use. 2nd That they are a Memorial in proper Sculpture of some remarkable Transactions or accident.

"That they are not the effects of mere Curiosity I think is very evident for 1st The Natives of this country were altogether ignorant of Sculpture and thence of Iron. And tho' they had some Stone Instruments none that ever I have seen are Capable (in much better hands than theirs) of forming so accurate an Inscription and if they were, 2nd it is highly probable there would have been in the Neighbourhood or in some other parts of New England other sketches of the same or a like Nature & Regu-



Figure 1. A photograph of a document page showing a large, faint, handwritten signature in the center. The signature appears to be "John A. Smith" and is written in dark ink. The document has a light background with some faint horizontal lines. The signature is written over a large, light-colored rectangular area.



larity which cannot be pretended. 3rd One would think thier Curiosity would have lead them to the Representation of Birds, Beasts, Fishes, Trees &c which we have since found to be their prevailing Genius & not to figures quite different from the Objects of their Senses. 4th They were a Nation too idle & irresolute for a work of so much industry & apparent Design.

"Some think these Sculptures were of particular use to the Indians in sharpening the Heads of thier arrows, their Axes &c, or at least that they were first formed by such means. This is obviated by two Considerations. 1st that there are no more (as I can yet hear) of such indented Rocks. If this was their usual Custom we should find these traces and Indentures very probably on many Rocks of the same nature as this and if it was political (a customary preparation to confirm & encourage one another in thier Intention or prosecution of War) no doubt but kindred & confederate Tribes would have had their respective Standards, But 2nd The figures are too regular & uniform to comport with such an Occasion.

"And this brings me to the second opinion, viz. That these Figures are a Memorial in proper Sculpture of some remarkable Transaction or Accident which appears from the great Numbers thereof, from the likeness of several, from the Parallelism & Conformity of the Stroakes one with another in each, from the Circumstances of the Rock and Place which are very proper for such a design and from the equal Irregularity of some of the Oriental Characters &c. But for the farther Discovery of this our Hopes being placed upon the extraordinary Skill & Ingenuity of M^r La Croze in the Alphabet both antient & modern of the Oriental Tongues it is with pleasure I now take leave of this subject.

"If it should be thought proper to prosecute the Subject any farther I will endeavor to transmit unto the Society a large view of the whole Inscription with an Acc^t of some other Sculptures which probably were the work of some modern Indians. And this I esteem but a just Debt to that Illustrious Body who have improved in so eminent a manner every Branch of human Literature.

I am Sir

Isaac Greenwood

Hollesian Professor at

N. Cambridge.

"Some take this Inscription to be Hieroglyphical, thinking N^o 2 the first figure represents a ship without Masts and a mere Wreck cast upon the Shoals. The second representing a Head of Land possibly a Cape with a Peninsular, Hence a Gulf. (this according to M^r Danforth."

Evidently the foregoing letter was greatly delayed in reaching London, as in all probability it was the one referred to in the following note, found in MS. Vol. 4432, British Museum:

"N. E. Camb.

April 28. 1732.

"Hon Sir,

"I perceive by Yours that a Packet I sent to you upwards of a Year since miscarried in w^{ch} was an Answer to your Request relating to y^e Inscription on y^e Rock at Taunton. I am loth by this First Opportunity to omit sending a Coppy thereof. And with Thanks to you for your Favour I am with all due Respect

Your Oblig'd Humble Servt

J. Greenwood.

"If it should be thought proper to make it public I should be glad you'l would see that y^e title *Hollisian* be placed before Profess. of y^e Mathematicks and Philosophy at Camb. N. E.

"Please to excuse my Brevity for I am but just now informed that y^e vessel is immediately to sail.

"For M^r John Evanses.

Fellow of the Royal Society
London."

WASHINGTON, D. C.

RUINS AT AZTEC AND ON THE RIO LA PLATA, NEW MEXICO

By WARREN K. MOOREHEAD

In the spring of 1892 the writer conducted an expedition, with a personnel of eleven men, through the San Juan country in northern New Mexico. Some years later Dr T. Mitchell Prudden visited portions of the same territory and has described the ruins observed,¹ but as the archeological remains at Aztec and on the Rio La Plata have not been fully described by more recent observers, I present such of my original notes as relate to them. Our expedition was accompanied by a civil engineer, Mr Clinton Cowen, with two assistants.

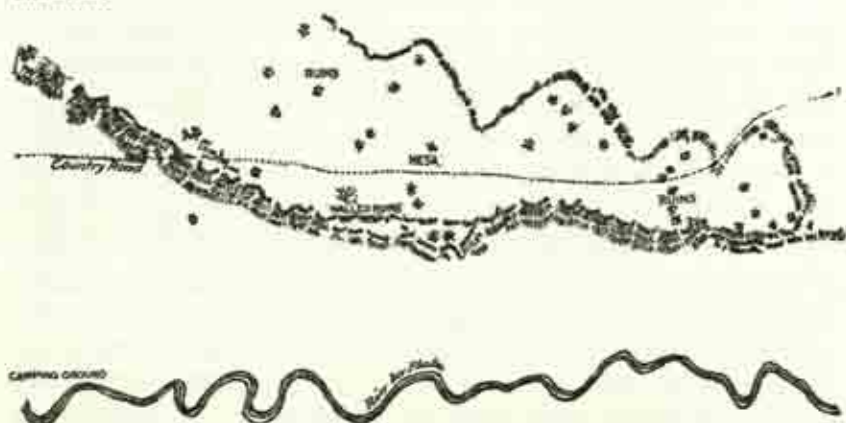


FIG. 74. — A mile of ruins on La Plata river.

At the time of these observations the ruins at Aztec were owned by Mr John Koontz, who permitted us to survey them, but would allow no extensive excavations. These ruins form a most imposing pile of masonry, and are the principal landmark in the valley of the Rio de las Animas for miles around. From their walls toward the west can be seen the beautiful snow-clad peaks of the La Plata range, seventy miles distant; to the eastward extend the lowlands

¹ *American Anthropologist*, vol. 5, no. 2, April-June 1904.

with the barren mesa for a background, and toward the north and south winds the Animas river. Our work at these ruins occupied two weeks.

There are two chief buildings, with a small one between and several others near by. The smaller ones were constructed of bowlders, and belonged to that numerous class known as "bowlder ruins" to distinguish them from buildings constructed of quarried stone. Scattered at intervals about the valley, near the ruins, are accumulations of earth and stone, resembling natural deposits, but close scrutiny reveals their artificial origin. About midway between the eastern and western divisions of the pueblo are ruins of a large kiva, surrounded on all sides by a series of small rooms. This kiva is of the same dimensions as several others occurring within the pueblos, approximating 35 feet, but its isolated position between the two ruins gives it greater interest.

The upper portions of the walls of the western ruin were in a poor state of preservation, and leaned to such an extent that we feared they might fall at almost any moment. In all probability when next the ruins are visited the walls will be found mingled with the mass of debris beneath. At the time of our examination it was readily determined that these walls once formed the third story of the pueblo, and, judging from the heaps of fallen stone, that the building must have been originally about four stories in height. While most of the upper walls had fallen, the heavy masonry and solid floors of the first and second stories remained intact. The piles of stone and earth, accumulated above them to a height of many feet, converted the lower stories into what were practically underground rooms. Communication from one to the other was afforded by means of openings large enough only for a person to creep through.

The western or large pueblo covers an area of about 60,000 square feet, and had an average height at the main front of eighteen feet, making in all about 16,000 perches or 400,000 cubic feet of masonry. The eastern pueblo averaged somewhat less than this, but its dilapidated condition made it impossible to give exact measurements in the limited time at our disposal. It would require a month to survey it in detail. The only chambers that could be distinguished were the seven kivas, which closely resembled those

of the western pueblo. The eastern pueblo is either considerably the older of the two or it was built in a less substantial manner, for at the time of our visit it was little more than an enormous heap of stones.

One of the most interesting features observed in connection with this remarkable group of ruins was that the quarries from which the soft stone used in the walls was obtained occur at a distance of about two miles. A broad trail or road leads from the ruins over

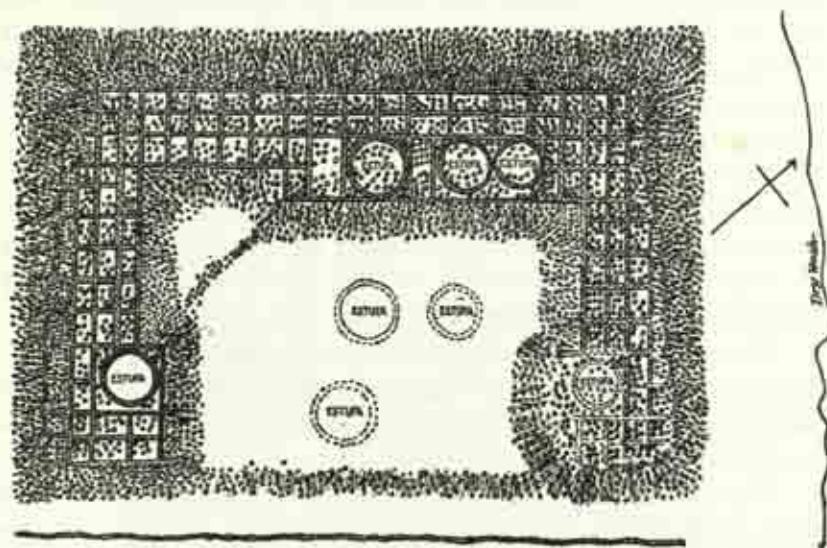


FIG. 75. — Plan of the western pueblo at Aztec, New Mexico.

the hills, across the valley, and back to the mesa where the quarries are. Numerous broken axes of rude form, stone hammers, and other quarrying tools have been found on the site. The trail does not follow the easy grades, but passes directly over a high and steep slope of the mesa, elevated perhaps 150 feet above the plain, and bears every evidence of having been well traveled.

The lower stories of the western ruin were in an excellent state of preservation. Throughout most of their extent the walls were of three stories, and with the exception of the lower portions facing the river, in no place were they less than two stories in height. The walls were composed of stones about as large as the ordinary granite paving blocks used in our cities today. The beams separating the

second story from the lower rooms were very heavy and well preserved. It was possible to creep through one of several openings into these lower rooms, and pass from one chamber to another until one had entered twenty or thirty apartments 10 by 12 feet and 8 feet in height, to several large ones 14 by 16 feet and 10 feet in height. I have seldom seen larger rooms in any of the Southwestern ruins.

The accompanying plan (fig. 75), drawn by Mr Cowen, will afford a good idea of the western pueblo. The outlines of eight kivas will be observed. In making the survey Mr Cowen was greatly handicapped by fallen walls and the completely ruined condition of some parts of the buildings. In places the accumulation of debris reached a height of twenty-three feet.

The valley of La Plata is narrower than that of the Animas, and is more fertile, making it a promising fruit and cattle country. In ancient times it was evidently thickly inhabited — quite likely by the same people that lived along the San Juan, since the architecture as well as the artifacts of the two regions are identical.

The number of rooms in the various ruins ranged from one to fifty. Sandstone slabs, as near the desired form as could be found, were used in the masonry. Many of these evidently did not fit well and were chipped or blocked into shape.

The ancient occupants of these structures irrigated hundreds of acres of the surrounding land. One could still trace the outlines of some of the ditches for several miles, in spite of the ever-shifting sand. The ancient farmer extended his ditches along the base of the mesa, not high up on its side as does the white ranchman of to-day. As the Rio La Plata has a rapid fall, it was not necessary for the ancient inhabitants to build a dam far above the tract they desired to irrigate. From the main canal, which seemingly was used in common, the people ran small acequias, or "laterals," and from these still smaller ditches to the individual garden beds. I say garden beds, for there was superficial evidence of thousands of small plots that had once been under cultivation and which lay some feet below the surrounding surface; but occasionally in the spring, when the melting snows of the Rockies swell the river to a raging torrent, the sand above in some places is washed away, ex-

posing what appear to have been garden beds much like those seen near our modern cities.

When watered, vegetation grows rapidly in this region. The owner of the land on which we were encamped gathered all his garden produce in six weeks from the time of planting. Without irrigation the soil is valueless, but with judicious flooding three crops a year



FIG. 76. — Doorways in the pueblo at Aztec, New Mexico.

may be produced. It is only by appreciating these facts that the dweller in the humid region can understand how a large population could have lived in so desert a land. The ancient Pueblos were not wanderers, seeking whomsoever they might prey upon, but lived in substantially built houses of stone or adobe and subsisted largely by agriculture, much as do their descendants to-day.

Farther up the Río La Plata, where in summer the stream becomes so insignificant that one may leap across it, the region is likewise interesting to the archeologist. From a high point on the mesa the view is strange and fascinating. Little vegetation except piñon, cacti, and sagebrush can be seen. As far as the eye can reach are undulating valleys, with mesas and foot-hills intersected by deep cañons, and sentinelled here and there by lofty buttes and pinnacles.

Along the mesa, about a quarter of a mile from the river, are numerous evidences of prehistoric occupancy. On almost every prominent point are heaps of debris and rudely squared stones, with an occasional wall remaining intact and projecting above the mounds, marking the homes of the former inhabitants.

Among the most interesting of the art remains found in this locality are the small and delicately formed arrowpoints, equalling in minuteness even those of the Willamette valley in Oregon. They are chipped from obsidian, jasper, moss-agate, and flint of many hues, and because of their translucence and delicate notching are much sought by the present inhabitants of the region. Some measure but half an inch in length, and are of exquisite workmanship.

At intervals along the mesa, and among the ruins, are found many stone axes, closely resembling those unearthed in the East, and many large stone metates, while the ground is literally strewn with fragments of pottery. At one point on the mesa we noticed, around a prairie-dog's burrow, numberless fragments of pottery, also pieces of human bone which the animal had brought to the surface. From these evidences we determined that the site was an ancient burial place, and soon after commencing excavation the sides of a bowl were observed protruding from a side of the pit. This proved to be basin-shaped, rather crudely decorated, and broken at the edges. Taking the earth from the vessel, we found two large bone spoons of unusual form, each evidently made from the femur of an elk or a bear; and one flint knife, about two inches in length and quite sharp. Carefully removing the earth to the left we uncovered a skull, lying face upward, in a good state of preservation. The head lay toward the east, but the legs had been doubled until the knees nearly reached the chest. The body had presumably

been interred in a sitting posture. This skeleton was that of an adult; it was in a fair state of preservation, and lay about a foot and a half beneath the surface. From our experience we felt justified in believing that more pottery would be found near the right hand, and this supposition was verified, for at this point we uncovered a bowl nine inches in diameter and five inches deep, with interior decoration in red. Inside the bowl was a smaller one, and just beyond lay a small cup, two by four inches, in which was a flint knife. Some inches beyond was an earthenware ladle. Most of the large bowls found were covered with thin, round, stone slabs. More objects were found with this burial than with any other individual interment on La Plata river.

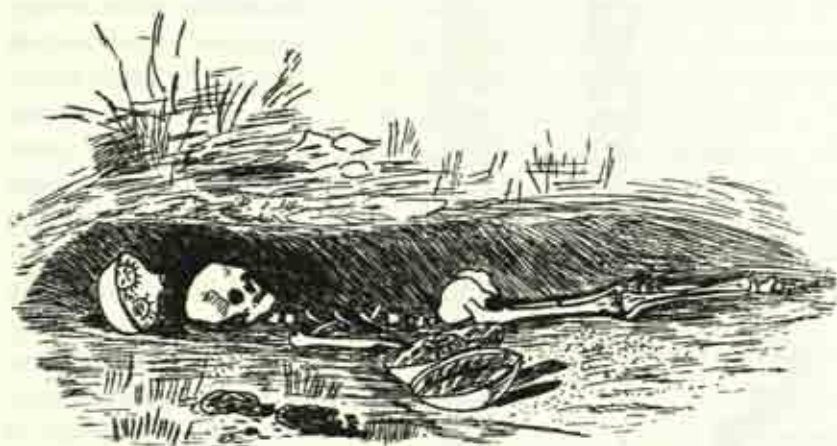


FIG. 77. — Skeleton with accompanying pottery in a La Plata grave.

The largest ruin on the mesa was roughly estimated to contain a hundred rooms. It was originally about three stories high; but at the time of our visit the walls were only a story and a half high, and were so covered with fallen masonry and other debris as to make it sometimes difficult to trace them.

One noticeable feature of this ruin was a passageway formed by two parallel walls two feet apart. One room at the western end showed evidences of having been burned. On the south side of the ruin is a large kiva, thirty-six feet across and of considerable depth. Several lesser kivas are near by. On all sides of this central

pueblo are similar ones extending along the mesas, each in such a ruined state that it was impossible to ascertain exact dimensions without excavation. Roughly estimated, they perhaps contained in all one hundred rooms, which, with those in the central ruin, would make a total of about two hundred rooms on the mesa.

Directly across the river occurs a sandstone ledge, with a dip of eighteen degrees to the south, which may be so easily quarried that

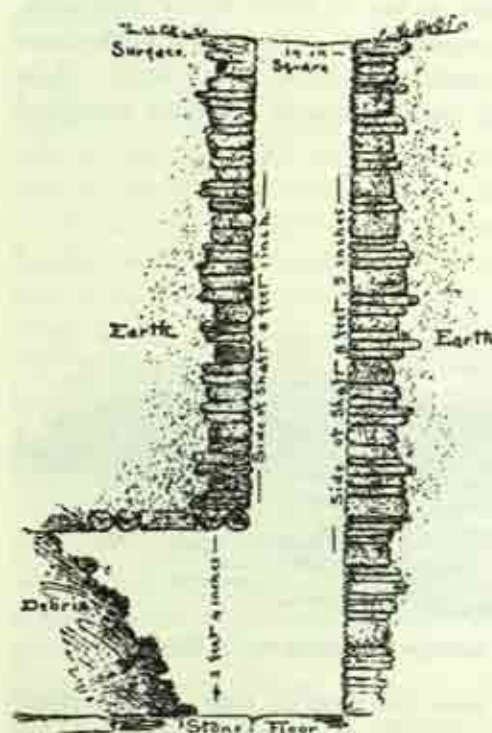


FIG. 78. — The shaft at La Plata.

the ancient builders were enabled to obtain slabs of good building stone with little trouble. Over the graves are invariably found large slabs averaging about three feet in length, two feet in width, and from one to three inches in thickness. Many of these graves were examined, the sandstone slabs having been placed immediately over the skeleton and serving also to protect the vessels. The graves contained perfect pieces of decorated pottery, slightly different from those obtained at Aztec and La Plata; but the skeletons uncovered here

were in such a state of decay that it was not possible to preserve them.

About thirty-six feet southward from the central ruin last described a neatly walled shaft was uncovered, the aperture of which was fourteen inches square. This structure aroused our interest, for chimneys were never built in ancient pueblos, and the presence of a shaft extending straight downward from the surface of the earth was a unique

feature. In excavating we were compelled to take out many large sandstone slabs. At a depth of eight feet and five inches we reached the bottom of the shaft, which was paved with sandstone slabs; here the shaft turned at a right angle toward the north, in which direction was the central ruin. The roof of the shaft, beyond the angle, was composed of oak logs, with here and there an occasional stone slab. The horizontal portion of the shaft was two feet four inches in height and fourteen inches wide, neatly walled up, and entirely filled with earth and stones, which we were compelled to hoist to the surface in buckets.

After following the shaft about four feet farther we were compelled, unfortunately, to abandon the work; and thus were prevented from gaining sufficient evidence to determine the purpose of the structure. It could not have been a chimney, for neither the stones nor the logs showed signs of smoke or heat, although fragments of charcoal were found occasionally during the excavation; nor is it likely that the shaft was used as an air flue for the purpose of ventilation, both on account of the narrowness of the perpendicular portion (fourteen inches), and the apparent disregard manifested by the ancient Southwestern villagers of everything that might tend to promote hygienic conditions.

PHILLIPS ACADEMY,

ANDOVER, MASSACHUSETTS.

THE TOMAHAWK

By WILLIAM H. HOLMES

In preparing a brief article on the "tomahawk" for the *Hand-book of American Indians*, much difficulty was experienced in the effort to obtain an adequate conception of the implement or implements to which the term referred originally and in early Colonial times. References to the tomahawk in the literature of the period are meager and contradictory, as shown by the several citations brought together in the following pages. The term was apparently first recorded in Captain John Smith's brief Indian vocabulary¹ prepared some time during the years 1607-09, where it appears as —

tomahacks, axes [presumably English axes] ;

while in the same connection we have

tockahacks, pickaxes [presumably English pickaxes],

monacookes, swords [presumably English swords].



FIG. 79. — *a*, English ax. *b*, English pickax. *c*, English sword.

Strachey,² who was secretary of the Jamestown Colony (1610-1612), gives the following terms and definitions :

tamohake, a hatchet [presumably an English hatchet].

taccahacan, a hatchet [presumably an English hatchet].

tamahaac, a hatchet [presumably an English hatchet].

monowhawk, a sword [presumably an English sword].

cunsenagwus, an Indian hatchet.

It would appear that these several names, except the last, were the Indian names for the English implements and weapons of the time (fig. 79), *cunsenagwus* being presumably the Indian name for

¹ Smith, *Travels, Adventures and Observations*, vol. 1, p. 147, reprint 1819.

² *Historie of Travaille into Virginia Britannia*, Hakluyt Soc. Pub., 1849, p. 188, 190, 194.

the native stone implement corresponding most closely to the English hatchet, possibly the celt-hatchet or the grooved ax, or both (fig. 80).

The word *tomahaucks* occurs in Arber's edition of Smith's Works, page cxiii (Spelman, *circa* 1613), but the context is not clear, and its significance and application are therefore uncertain.¹ It may have referred to either a stone hatchet or any other kindred weapon.

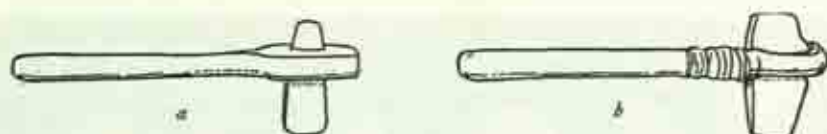


FIG. 80. — a, Indian celt-hatchet. b, Indian grooved ax.

Other statements by Smith² and Strachey,³ relating to the weapons of the Indians, are not more helpful as the word *tomahawk* is not mentioned. Strachey's words, "a long stone sharpened at both ends," may have referred to the stone hatchet-blade or celt, but do not accurately describe it (fig. 81); but the use of the implement as a hatchet for felling trees or cutting massy things asunder makes it practically certain that the reference was to the blade of the celt-hatchet, or otherwise to the grooved ax blade, or to the roughly sharpened stones so common in the Potomac region.

In only one case in the literature of the Virginia colonies, so far as noted, is the word *tomahawk* in any of its forms applied definitely

¹ "The weapons they vse for offence are Bowes and Arrowes with a weopon like a hammer and ther Tomahaucks for defence [?] which are [?] shields made of the barke of a tree and hanged on ther leaft shoulder to couer that side as they stand forth to shoote."

² "For their wars also they vse Targetts that are round and made of the barkes of trees, and a sworde of wood at their backs, but oftentimes they vse for swords the horne of a Deare put through a peece of wood in forme of a pickaxe. Some a long stone sharpened at both ends, vsed in the same manner. This they were wont to vse also for hatchets, but now by trucking they haue plenty of the same forme of yron. And those are their chiefe instruments and armes." — Smith's *Map of Virginia*, Oxford, 1612, part 1, p. 23; also Arber's *Smith*, 1884, p. 364.

³ "Some use a long stone sharpened at both ends, thrust through a handle of wood in the same manner, and these last they were wont to use instead of hatchetts to fell a tree, or cut any massy thing in sonder; but now, by trucking with us, they have thousands of our iron hatchetts, such as they be." — Strachey's *Virginia*, p. 106, Hakluyt Society Pub., 1849.

to the Indian celt-hatchet or to any other native implement, and that is by Beverley, a hundred years later. This author states that "when they wanted any Land to be clear'd of the Woods, they chopp'd a Notch round the Trees quite through the Bark with their Stone Hatchets, or Tomahawks, and that deaden'd the Trees, . . . but now for all these uses they employ Axes, and little Hatchets which they buy of the English."¹ This statement, which associates the

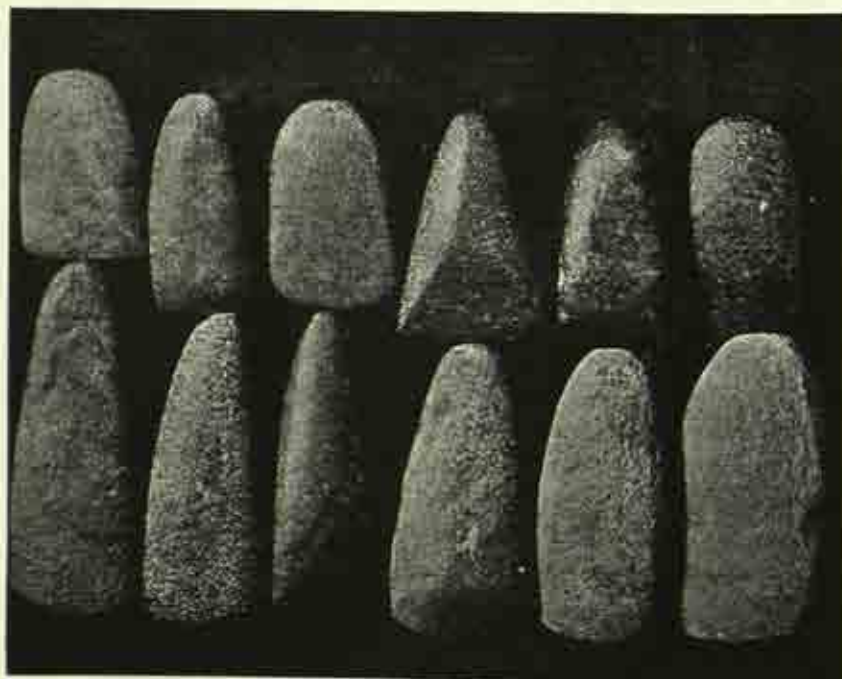


FIG. 81. — Typical celt-hatchet forms of the Potomac-Chesapeake region.

Indian name for the English hatchet, as recorded by Smith and Strachey, with the native stone hatchet (*cunsenagwus*), is strangely at variance with a very explicit statement found on an earlier page of the same work. Describing a clandestine visit to one of the houses of worship of the Virginia Indians, Beverley says :

We found large Shelves, and upon these Shelves three Mats, each of which was roll'd up, and sow'd fast. These we handed down to the light, and to

Beverley, *History and Present State of Virginia*, 1705, book III, p. 61.

save time in unlacing the Seams, we made use of a Knife, and ripp'd them, without doing any damage to the Mats. In one of these we found some vast Bones; which we judg'd to be the Bones of Men, particularly we measur'd one Thigh-bone, and found it two foot nine inches long: In another Mat, we found some Indian Tomahawks finely grav'd, and painted. These resembl'd the wooden Faulchion us'd by the Prize-fighters in England, except that they have no guard to save the Fingers. They were made of a rough heavy Wood, and the shape of them is represented in the Tab. 10. No. 3. Among these Tomahawks was the largest that ever I saw; there was fasten'd to it a Wild Turkey's Beard painted red, and two of the longest Feathers of his wings hung dangling at it, by a string of about 6 inches long, ty'd to the end of the Tomahawk.¹ [See Fig. 82, a.]

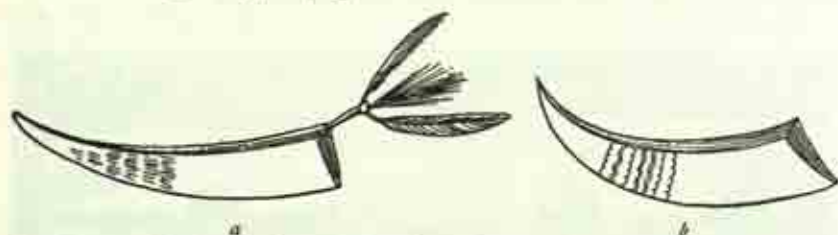


FIG. 82. — a, Tomahawk shown in Beverley's plate 10. b, Tomahawk illustrated in Knox's *Voyages*, vol. II., 1767, plate opposite p. 165.

That the falcion-like implements here described with such minuteness were classed with the tomahawks of the Virginia Indians of that time is made clear by the illustration of the implement introduced into plate 10 of Beverley's work (see 3, fig. 83). This plate represents a native man and his wife at dinner, and was made up from Hariot's² plates 15 and 16, as Hariot's plate had been in turn copied with wilful inaccuracy from John White's drawing (now in the British Museum), made at Roanoke about 1585. The drawing of the tomahawk is referred to in the description of the Beverley plate as "The Tomahawk, which he lays by at Dinner."

In this connection the following lines from Hariot are suggestive:

Those weapō's that they haue are onlie bowes made of Witch-hazle, and Arrowes of reeds; flat edged truncheons also of wood about a yard long.³

This seems to indicate that aside from the bow and arrow the only weapon of the Roanoke Indians was the falcion-like wooden

¹ Beverley, *op. cit.*, p. 29.

² Hariot, *A Brief and True Report of the New Found Land of Virginia*, 1590.

³ Hariot, *op. cit.*, p. 24.

club, and leads to the implication that the stone celt-hatchet was not regarded as a weapon, if, indeed, it was known at all among these Indians. The only observed indication that the celt-hatchet was known at Roanoke is found in plate xix of Hariot, where, associated with a feasting scene, is depicted a man engaged apparently in splitting wood for the fire with an implement of this character, which, however, may be the English ax, doubtless even thus early introduced among the Indians. That the celt-hatchet was not an ordinary weapon among the tribes of Virginia is indicated by a similar statement by Strachey to the effect that "their weapons of offence are bowes and arrowes and wodden swords."¹



FIG. 83. — Plate 10 of Beverley, with illustration [3] of "The Tomahawk, which he lays by at Dinner."

It is worthy of particular note that nearly all the illustrations employed in the works of Smith and Strachey are made up from the Roanoke Colony drawings of John White, executed between the years 1585 and 1590, excepting the scene in Smith depicting the saving of Smith's life by Pocahontas. Even the figures in this picture are plagiarized from White, whose drawings represent the Croatans of North Carolina, not the Powhatans of Virginia. It

¹ Strachey, *op. cit.*, p. 105.

may be further noted that in the scene depicting the saving of Smith by Pocahontas the executioners flourish weapons of two classes (fig. 84), one the globe-headed club, the other a pick-like implement that answers in a way the description of the native "sword" with a

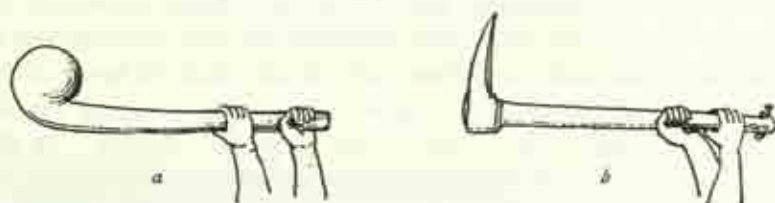


FIG. 84. — Weapons depicted in Smith's plate illustrating the saving of Smith's life by Pocahontas.

sharp stone or antler spike. The first of these weapons is not even referred to by any of the colonial writers of Virginia. Again, it is seen that Beverley, without anywhere acknowledging the fact, makes up his plates from those of White, Smith, and other early writers, and although nearly all of these represent the Roanoke Indians, and the activities, customs, style of dress, etc., of that people, he suits his descriptions of Virginia aborigines to them, interpolating certain observations of his own relating to the latter Indians. This is doubtless due to the understanding on his part that the Powhatans had customs, arts, etc., identical with those of the Roanoke island natives.

In just what way Beverley fell into the inconsistency regarding the tomahawk, which he first describes from his own observations and illustrates as a falchion-like club of wood, and later refers to as the Indian stone ax, it is difficult to conjecture.¹ If his evidence should be thrown out entirely on account of its contradictory nature, then we have remaining of the original colonial Virginia evidence, only that of Smith and Strachey, which makes the word *tomahawk* apply to the English ax or hatchet, and the term *cunsenagvus* to the Indian stone hatchet. It will be necessary to determine the

¹ Beverley says in his preface: "I am an Indian"; and again, "I have added Fourteen Copper Plates, to illustrate the Dress, and Way of Living of the Natives, the Draughts of which were taken exactly from the Life. Herein, as well as throughout the whole Book, I have been very scrupulous, not to insert anything, but what I can justify, either by my own Knowledge, or by credible Information."

etymology of these terms ere we can gain any further insight into their application. For the discussion of this phase of the investigation we shall have to depend on Mr W. R. Gerard, who is a close student of Algonquian etymologies.

The Smith illustrations have little ethnological value, as the artist has introduced Smith into compositions made up of figures of Roanoke Indians borrowed from John White; and the figure of the "great King of Pamunkey," captured by Smith by seizing him by the hair,¹ is merely a bad copy of one of White's figures. In the works of Smith, Strachey, and Beverley there is no single figure drawn from the Powhatans, and no costume, implement, ornament, or other object of art derived from the belongings of that people. All are plagiarized, with one apparent exception, from John White's original drawings or from Hariot's reproductions of these, or some other outside source, the exception being the drawing of the tomahawk in Beverley's plate 10, which represents the implement seen and described by Beverley himself. The graphic representations of New England authors are even less representative of the real natives of that section, and the record of the Massachusetts Indians, pictorial and descriptive, is so meager that the commonwealth of Massachusetts is not able to obtain a reasonably correct drawing of an Indian in costume for use on its seal. It is thus seen that the drawings of John White are the most accurate and important graphic representations of the native tribes of the Atlantic slope, and indeed they are nearly all we have to show us what the Indians of colonial days were like.

The earliest observed reference to the *tomahawk* by the colonists of the New Netherlands is that of Van der Donck (about 1650), as follows:

Their weapons formerly were bows and arrows, with a *war-club* hung to the arm, and a square shield which covered the body up to the shoulders; . . . At present many of them use fire arms, which they prize highly and learn to use dexterously. They spare no pains in procuring guns and ammunition, for which they trade with the Christians at a dear rate. At present they also use *small axes (tomahawks)* instead of their *war-clubs*.²

¹ Arber's *Smith*, plate opposite page 343.

² Van der Donck, New Netherlands, 1656, in *Collections of the New York Historical Society*, 2d ser., 1, 1841, p. 211.

Here it is clear that the term applies specifically to the European small ax or hatchet.

In the colonial literature of New England the earliest mention of the tomahawk noted is that by Wood, in the following lines:

Tamahaukes be staves of two foote and a halfe long, and a knob at one end as round and bigge as a foote-ball.¹

In a recent article Bushnell furnishes the following interesting item:

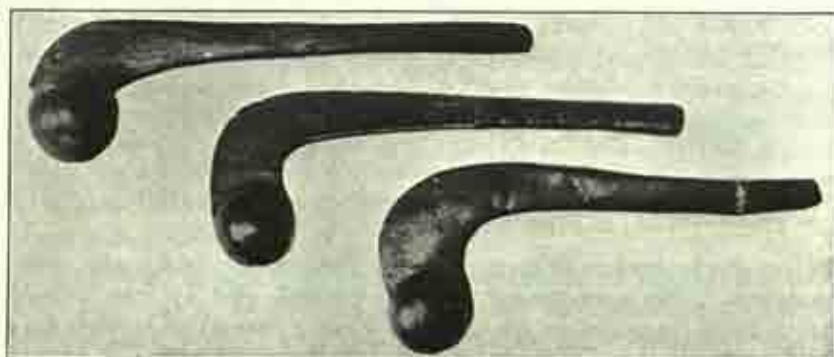


FIG. 85. — Three clubs, catalogued as tomahawks. Tradescant Collection, Ashmolean Museum, Oxford.

In the Ashmolean Museum at Oxford, among the specimens which formerly belonged to the old Tradescant collection, are three clubs from North America (A, B, C, plate G). These are of great interest, as they are, without doubt, the oldest existing examples of that type of weapon. On p. 46 of the small printed catalogue [of the Tradescant collection in the Ashmolean Museum, Oxford] is a reference to "*Tomahawks, 6 Sorts.*" The three specimens now in the Ashmolean Museum were probably included in this entry.²

Illustrations of the three are given in figure 85.

In 1674 Gookin wrote as follows:

Their weapons were bows and arrows, *clubs*, and *tomahawks*, made of wood like a *pole ax*, with a sharpened stone fastened therein, and for defence, they had targets made of barks of trees.³

¹ Wood, *New England's Prospect*, 1635, p. 50.

² Notes on Certain Clubs from North America, by David I. Bushnell, Jr, *Man*, London, 1907, no. 59.

³ Daniel Gookin (1674), in *Collections of the Massachusetts Historical Society*, 1792, 1st ser., I, p. 152.

This is the only observed reference in colonial literature, excepting that of Beverley, already mentioned, in which the term *tomahawk* is definitely employed in connection with the stone hatchet of the Indians. The value of Gookin's statement will necessarily depend on the familiarity he may have had with Indian life, and the statement cited may or may not be of greater historical value than the kindred statement of Beverley.

A reference by Josselyn, a year later, definitely relates the term *tomahawk* with the globe-headed club of the natives of New England:

Their weapons of Defence and Offence are Bowes and Arrowes, . . . their other weapons are Tamahawks which are staves two foot and a half long with a knob at the end as round as a bowl, and as big as that we call the Jack or Mistriss.¹

The following is from Rogers:

Another instrument of great esteem and importance among them is the tomahawk. This is an ancient weapon universally used by them in war, before they were taught the use of iron and steel; since which hatchets have been substituted in lieu of them. But this instrument still retains its use and importance in public transactions; and, like the pipe, is often very significant. This weapon is formed much like an hatchet, having a long stem or handle; the head is a round ball or knob of solid wood, well enough calculated to knock men's brains out, which on the other side of the stem terminates in a point where the edge would be, if made an hatchet, which point is set a little hooking or coming towards the stem; and near the center, where the stem or handle pierces the head, another point projects forward of a considerable length, which serves to thrust with like a spear, or pike-pole.

The tomahawk likewise is ornamented with feathers and paintings, disposed and variegated in many significant forms, according to the occasion and end for which it is used; and on it they keep journals of their marches, and most important and noted occurrences, in a kind of hieroglyphics. When the council is called to deliberate on war, the tomahawk is painted all over red, and when the council sits it is laid down by the chief: and if war is concluded upon, the captain of the young warriors takes it up, and with it in his hands dances and sings the war-song, as before-mentioned. When the council is over, this hatchet, or some other of the kind, is sent by the hands of some warrior to every tribe concerned, and with it he presents a belt of wampum, and delivers his message, throwing the hatchet on the ground; which is taken

¹ Josselyn (1675) in *Collections of the Massachusetts Historical Society*, 1833, 3d ser., vol. III, p. 309.

up by one of their most expert warriors, if they chuse to join : if not, they return it, and with a belt of their wampum suitable to the occasion.¹

In connection with the above quotation, Rogers gives in the plate opposite page 165 (Knox) an illustration of "a tomahawk" reproduced in our figure 82, *b*, which he took from a figure in Picart's plate 14 (1723), while this in turn came, no doubt, from Beverley's plate reproduced in our figure 83. Although Rogers describes the tomahawk as a globe-headed club, he reproduces, in the plate just mentioned, Picart's globe-headed club and calls it a club instead of a tomahawk. That neither Rogers nor Knox had any first-hand knowledge of the subject treated may well be assumed.

President Dwight, of Harvard College, who had an intimate acquaintance with the New England Indians, beginning about 1770, makes the following statement, indicating clearly the understanding (or misunderstanding) in his time as to the significance of the word *tomahawk* in New England :

Another of the principal weapons was the well-known tomahawk or war club. I had one of these in my possession many years ; in shape not unlike a Turkish sabre, but much shorter, and more clumsy. On it were formed several figures of men, by putting together thin slips of copper, set edge-wise in the wood. Some of them were standing : some of them were prostrated ; and a few had lost their heads. The two last were supposed to denote the number of enemies whom the owner of the tomahawk professed himself to have killed. Since the arrival of the English, they have used fire-arms. To these they add a long knife : and a small battle ax, to which they have transferred the name of Tomahawk. This instrument they are said to throw with such skill, as almost invariably to hit their mark at a considerable distance.²

The observation regarding the transfer of the name *tomahawk* to the battle-ax indicates the understanding in New England that the word *tomahawk*, applied formerly to the war-club, had been at an early date transferred to the small battle-ax (hatchet) of metal.

McCulloh, who wrote at a much more recent date, furnishes the following paragraph :

The tomahawk, which is sometimes considered a weapon peculiar to the American Indians, was originally a club carved into some convenient shape. It was most commonly a stout stick, about three feet in length, terminating in

¹ An Abstract of Major Rogers' Account of North America, in J. Knox's *Voyages and Travels*, London, 1767, II, pp. 165-66.

² Dwight, *Travels in New England and New York*, 1821, I, p. 118.

a large knob, wherein a projecting bone or flint was often inserted. The hatchets of the Indians that are now called tomahawks, are of European device, and the stone hatchets so often found in our fields, and called by the same term, were not military weapons but mechanical tools.¹

Morgan's interpretations of the tomahawk and related implements do not serve to throw light on the subject. Of the Iroquois, he says:

For cutting trees and excavating canoes, and corn mortars, in a word, for those necessary purposes for which the axe would seem to be indispensable, the Iroquois used the stone chisel, *Uh'-ga-o-gwāf'-hā*. In cutting trees, fire was applied at the root, and the chisel used to clear away the coal. By a repetition of the process, trees were felled and cut to pieces. Wooden vessels were hollowed out by the same means. Fire and the chisel were the substitutes for the axe. The chisel was usually about six inches long, three wide, and two thick; the lower end being fashioned like the edge of an axe. Stone gouges in the form of a convex chisel, were also used when a more regular concavity of the vessel was desired.²

The chisel here described is clearly the celt or stone hatchet blade which was in common use among the Iroquois and neighboring tribes.

Again he states that—

In ancient times the Iroquois used the stone tomahawk. It was fashioned something like an axe, but in place of an eye for the helve, a deep groove was cut around the outside, by means of which the handle was firmly attached with a withe or thong. Oval stones, with grooves around their greatest circumference, were also secured in the head of war-clubs, and thus made dangerous weapons.³

It is thus seen that in Morgan's view the grooved stone ax was the native tomahawk, the celt or hatchet blade being regarded as a chisel, as indicated in the first citation. That Morgan was not clear in his interpretation is further indicated by the statement that "before the tomahawk came into use among the Iroquois, their principal weapons were the bow, the stone tomahawk, and the war-club,"⁴ which statement is almost immediately followed by another:

The tomahawk succeeded the war-club, as the rifle did the bow. With the invention of this terrible implement of warfare the red man had nothing to

¹ McCulloh, *Researches*, 1829, p. 134.

² Morgan, *League of the Iroquois*, 1904, II, book III, pp. 9-10.

³ *Ibid.*, pp. 10-11.

⁴ *Ibid.*, pp. 13-14.

do, except in having it so fashioned as to be adapted to his taste and usage. The tomahawk is known as widely as the Indian, and the two names have become apparently inseparable. They are made of steel, brass, or iron. The choicer articles are surmounted by a pipe-bowl, and have a perforated handle, that they may answer the double purpose of ornament and use. In such the handle, and often the blade itself, are richly inlaid with silver. It is worn in the girdle, and behind the back, except when in actual battle. They used it in close combat with terrible effect, and also threw it with unerring certainty at distant objects, making it revolve in the air in its flight. With the Indian, the tomahawk is the emblem of war itself. To bury it, is peace; to raise it, is to declare the most deadly warfare.¹

This author thus makes the war-club the predecessor of the steel hatchet, yet if the stone tomahawk existed as a weapon it would have been the natural prototype.

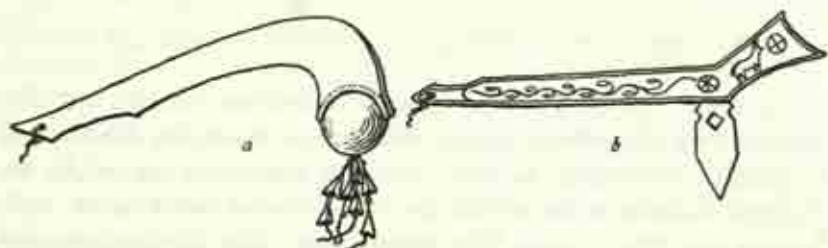


FIG. 86. — Western forms of the tomahawk club.

The details of the origin of the tomahawk-pipe which Morgan illustrates as the "o-sque'-sont [Iroquois], or tomahawk," may never be known. It came into use in early times, possibly as early as the



FIG. 87. — *a*, Tomahawk-pipe (Morgan). *b*, War-club with deer-horn spike (Morgan).

middle of the eighteenth century. In 1778 Colonel Johnson in writing to Lord Germain said that "the tomahawk which is so much talked of, is seldom used but to smook thro, or to cut wood with."²

¹ Morgan, *ibid.*, pp. 15-16.

² *Ibid.*, p. 283.

It would appear from the various citations given that the evidence regarding the native use of the term *tomahawk* is meager and conflicting, and that no very satisfactory conclusion can be reached. It is clear that the word as first recorded by the English was applied definitely to the English metal hatchet by the Virginia Indians and that this use became general among the colonists, being applied later also to the ceremonial hatchet-pipe. The possibility that the name originated outside of Virginia, however, is suggested by the fact that both Smith and Gosnold had cruised along the coast to the north,

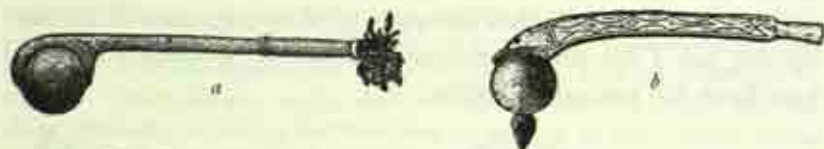


FIG. 88. — *a*, War-club (Morgan). *b*, War-club with metal spike.

carrying on trade with the New England Indians, and that a globe-headed club of northern type is depicted in one of the illustrations of Smith's *Works* (fig. 84, *a*). That the name was applied by the Virginia Indians, or by any of the tribes, to the native stone celt-hatchet (fig. 80, *a*) is not fully established. The English colonists applied it not only to the native celt-hatchet, but to the grooved ax, the falchion club, the spiked club, and the plain globe-headed club, and there is no evidence in literature to show whether the natives applied it to a single form exclusively or to two or more forms of weapons, or in fact whether they actually applied it to any, *cum-senagtous* being the only term definitely applied to the native stone hatchet in the literature of the Jamestown colonists.

An appeal to the etymology of the term is of little avail in the premises, as any analysis that may be made of its elements and their significance cannot be effective in determining its application in practice. I shall be glad, however, to leave the discussion of this point to those who can claim especial skill in the languages of the Algonquian tribes.

BUREAU OF AMERICAN ETHNOLOGY,
WASHINGTON, D. C.

THE TERM TOMAHAWK¹

By WILLIAM R. GERARD

ETYMOLOGY: From Renape of Virginia *tāmāhāk*, an apocopated form of *tāmāhākan*, '(what is) used for cutting,' a cutting utensil, from *tāmāhāken*, 'he uses for cutting,' from *tāmāham*, 'he cuts.' A name applied by the Renape Indians, among whom the English settled in 1607, to a stone ax or hatchet employed as a weapon of offense and an implement for cutting or, more accurately, chopping wood. Captain John Smith, who was the first to mention the instrument (*Map of Virginia*, 1612), under the name *tomahack*, describes it as "a long stone sharpened at both ends"; and to this Strachey (about 1616) adds "thrust through a handle of wood," and which "they were wont to use for hatchets to fell a tree, or to cut any massy thing in sonder." Strachey, in his "Dictionarie,"² gives, in addition, as names for an Indian hatchet, *cunsenagwens*³ (contraction of *kunāstnakw*, 'hafted long-stone'), and *tacchackan* (*takāhākan*), a word which Smith gives in the abbreviated form of

¹ Following the suggestion made by Mr Holmes in the preceding article, and at the request of the editor, Mr Gerard has kindly furnished these notes on the origin and application of the term *tomahawk*.

² Many synonymous terms in this vocabulary were not employed by the Indians around Jamestown, but were communicated to its compiler by colonists who had visited various places in Virginia where the words were in local use. In fact, the vocabulary shows that Strachey knew little about the language of the Indians with whom he came into contact during his short stay in Virginia, and that the words that he recorded were made known to him by men, some of them intelligent and others semi-illiterate, who had resided a greater length of time in the country. This is sufficiently shown, among other things, by the orthography not only of the Indian words, but that of the English definitions, many of which are erroneous.

³ In this word, as in very many others given by the same writer, the terminal *s* is an English addition. Eliot gives *quinahsinnonk* (*kwināstno^{nk}*), the Massachusetts cognate of Renape *kunāstnakw*, as a name for 'pestle'. In one case the hafted stone was sharp edged, and, in the other, cylindrical and blunt. The Southern Renape name for pestle was *pocohaac* (*pākāhāk*, abbrev. of *pākāhākan*) '(What is) used for striking'; coradicate with Northern Renape (or Lenape) *pāgāmākan* 'cutlass', Ojibwe *pāgāmāgan* 'club', 'war-club', 'cudgel', Cree *pākāmāgan* 'mallet', 'hammer', 'club'; from the root *pāk* 'to hit', 'strike'.

tockahack (*takāhāk*) and defines as a 'pickaxe'. This implement, which Smith describes as being made of the "horne of a Deare put through a peece of wood in forme of a Pickaxe," was the common deer-horn war-club.¹ The word, which means 'striking utensil,' is cognate with the Massachusetts name for ax or hatchet, viz., *tokonk* (*tak'ā'k*, abbrev. of *tak'ā'kan*). The cutting of an object with a stone ax or hatchet was effected by a succession of blows in a slanting direction, a sort of chipping operation, as shown by the Narragansett term for a hatchet, viz., *chichegan* (*tchiklūgan*), '(what) scrapes (lops off or prunes),' cognate with *tchikāhikan*, the Cree name for an ax. When the Indians, says Beverley, "wanted any Land to be clear'd of the Woods, they chopp'd a Notch round the Trees quite through the Bark with their Stone Hatchets or Tomahawks,"² and that deadn'd the Trees." The operation was completed by fire and a chopping away of the charred wood.³ The name tomahawk, like several other Virginia words (such as raccoon, opossum, hominy, etc.), soon found its way to Massachusetts, and was erroneously applied by Wood (*New Englands Prospect*, 1634), who was ignorant of the form and function of the Virginia implement, to a war-club or "head-breaker," which he describes as a "stave of two foote and a halfe long, and a knob at one end as round and bigge as a foote-ball." Wood's description (which fits that of the Iroquois *gajewa*, a heavy club about two feet in length, made of iron-wood with a large ball or knob at one end) was

¹ Capt. Arthur Barlowe, in his letter to Raleigh (1585), describes this weapon thus: "They [the Southern Renape] have besides a kinde of club, in the end whereof they fasten the sharpe hornes of a stagge or other beast." (Hakluyt, *Voyages*, III, p. 250.)

² Beverley, in another place, describes a visit made to a Virginia Indian house of worship in which he found, carefully wrapped and sewed in mats, "some vast bones," and some Indian war-clubs "finely grav'd, and painted." The war-clubs, which he unaccountably styles "tomahawks," were, from his description and figures, undoubtedly weapons captured from the Massawomeks (Iroquois), and the bones those of one or more of the Sasquehanoks (Iroquois), whom Smith describes as men of gigantic stature. Both the bones and war-clubs had doubtless been carefully wrapped in mats and preserved in a house of worship as relics of a battle in which the Renape had been victorious over their deadly enemies, the Iroquois.

³ According to Harlot (1588), the Southern Renape, in the manufacture of their canoes ("dug-outs") from *vakiack* (*rokiak*, 'soft wood'; the wood of the bald cypress), employed in the process fire, stone hatchets, and shells. The shells used were possibly those of species of *Unio*, and the name of which, according to Strachey, was *tshecomah* (*tchikaman*, 'scraper').

plagiarized by Josselyn in his account of *Two Voyages to New England*, 1674; while Gookin, writing about the same date, describes a tomahawk as an instrument "made of wood like a pole ax with a sharpened stone fastened therein."¹ Another New England writer, Church (*Philip's War*, 1716), applied the name to a "wooden cutlass." The word "tomahawk" is, however, as above stated, of Virginian origin, since a vocable cognate with Virginia *tāmāhāk* would have had, in the Massachusetts dialect, the form of *tāmāha*ē*, which would have been written *tumhonk* by the English. The names for a stone ax or hatchet in all the Eastern Algonkian dialects (except Massachusetts and Narragansett), were coradicate, but not cognate with the Virginia word under consideration: Pamlico *tāmāhik*; Lenape, *tēmāhikan* or *tūmāhikan*; Abnaki, *tēmāhigan*; Mohegan, *tūmāhikan*; Micmac, *tūmigūn*. Each of these words (from the Eastern Algonkian root *tēm*, *tām*, *tūm*, 'to cut') means '(what) cuts' (an inanimate object understood), while *tāmāhāk* signifies '(what is) used for cutting,' any kind of an object, animate or inanimate. Previous to the publication of Smith's *Map of Virginia*, the Indians of Virginia had been supplied from England with small iron hatchets² of inferior quality manufactured for trade purposes, and to which, naturally, they transferred the name of the stone implement which the metal one superseded. Subsequently, similar iron hatchets were introduced among other Eastern Algonkians as well as Iroquoians, all of whom, after the manner of the Virginians, applied to these implements the name of the stone ones which they had used for similar purposes (Algonkian, *tēmāhigan* and its cognates, and Iroquoian *atokca*, *atoken*, *odogun*, *oskewesont*, etc.). It is therefore to the iron hatchet of the white man's manufacture and the adopted Virginia Indian name which English-speaking people everywhere applied to it, and not to the stone implement, that is due the widespread fame which this formidable implement of

¹ Gookin's description of Indian weapons, which is only a general one, bears evidence of having been written from information derived from reading Smith's *History of Virginia*. His description of a tomahawk is not very far from being correct, since a pole-ax is merely an ax with a longer helve than usual, and in the Indian instrument a stone head was substituted for an iron one.

² "Of the same forme," says Smith, that is, of the same general shape, as the stone hatchets that supplanted them

aboriginal warfare acquired. The tomahawk, except in actual war, was worn in the girdle, behind the back. It was used by the Indians with terrible effect, and also thrown by them with unerring precision at distant objects, and made to revolve in the air in its flight.

(1) With the Indians the tomahawk was the emblem of war itself. To bury it, meant peace; to dig it up, meant to declare the most deadly warfare. Hence the phrases "to bury the tomahawk," and "to dig up the tomahawk," sometimes used by writers and public speakers with reference to the settlement of past disputes or the breaking out of new ones. (2) TOMAHAWK (vb. tr.)—To cut or kill with a tomahawk. (3) TOMAHAWK RIGHT.—An inferior kind of land title, secured in the early period of the settlement of Virginia, "by deadening a few trees near the head of a spring, and marking the bark of some one or more of them with the initials of the name of the person who made the improvement. (4) TOMAHAWK PIPE.—A tomahawk with a hollow stem and a bowl at the back of the head adapting it for use also as a pipe.

TOMAHAWKS. Axes.—Smith, *Map of Virginia* (1612). "The weapons they use for offense are Bowes and Arrows with a weapon like a hammer and ther Tomahaucks:"—Spelman, *Relation of Virginia* (about 1613).

"Iron TOMAHAWKES or small hatchets."—Hamor, *True Discourse of the Present Estate of Virginia* (1615). TAMOHAKE, TAMAHAAC.—Strachey, *Historic of Travaile into Virginia* (about 1616). TAMAHAWKES [war-clubs].—Wood, *New Englands Prospect* (1634). TAMAHAWKS [war-clubs].—Josselyn, *Account of Two Voyages to New England* (1674). Stone Hatchets or TOMAHAWKS.—Beverley, *History of Virginia* (1705). ". . . his men pull'd their TOMAHAWKS or Hatchets from under their Matchcoats, and kill'd several."—Lawson, *A New Voyage to Carolina*, p. 200, 1709. TOMHOG, or wooden Cutlash.—Church, *Philip's War* (1716). ". . . hatchets (which the Indians call tomahawks)."—Byrd, *History of the Dividing Line* (1728).

NEW YORK CITY.

SOCIOLOGY OF THE CHINGALEE TRIBE, NORTHERN AUSTRALIA

By R. H. MATHEWS

In an article contributed to the Anthropological Society of Washington in 1900,¹ I published a table showing the eight intermarrying sections of the Chingalee tribe, which occupies an extensive tract of country about Powell's creek and Newcastle waters, in the Northern Territory, a name given to the northern portion of South Australia. In 1905 I contributed another paper,² in table 11 of which I gave examples of marriages which I distinguished respectively as Nos. 1, 2, 3, and 4 wives.

During 1906 I completed some further investigations which enable me to report that among the members of the Chingalee tribe, the name of the section of a given individual is amended or changed altogether when he or she has passed through the ordeal of initiation. I will explain the circumstances which led up to this important discovery, which has never before been reported. For some years past I have been collecting details of the sociology of several tribes in the Northern Territory, Western Australia, and the northwest portion of Queensland, by means of correspondents resident in various places in the regions mentioned. I was frequently puzzled to find that a correspondent in one part of a tribe's domain would send me the names of the eight sections with full particulars of their intermarriage and devolution, whilst another equally capable informant in another part of the hunting grounds of the same tribe would send me a set of eight sections, varying more or less in the form of the names, but exactly the same in all other respects. I concluded that there must be some reason for this difference, and asked my friends to make independent inquiries from different individuals in the same locality, as well as from old and

¹ *American Anthropologist*, N. S., 11, pp. 494-501, with map.

² *Ibid.*, VII, pp. 303-304.

young members of the same tribe. After a good deal of patient work on the part of my correspondents and myself, we found that children of both sexes had a somewhat anomalous sectional nomenclature compared with that of the adults.

It was among the tribes about Hall's creek, in the Kimberley district of Western Australia, that my attention was first arrested in regard to these apparent irregularities. One correspondent gave me Chauarding for a section name which evidently corresponded with Jungary of the table sent by another inquirer, and so on. I at length succeeded in obtaining tolerably full confirmation of my conclusions, and am now able to supply an example of the variations in the section names of the Chingalee tribe.

TABLE I

Cycle	Masculine Section Name		Feminine Section Name	
	Before Puberty	After Puberty	Before Puberty	After Puberty
A	Chukala	Chungalee	Ongalla	Nungalee
	Chulamah	Chula	Arlinginyu	Nala
	Tapala	Taralee	Ehralee	Naralee
	Chupadee	Tungaree	Ambadee	Nungaree
B	Chakade	Chimitcha	Narbeeta	Namitcha
	Chunamah	Chuna	Ahmana	Nana
	Tampalillee	Champachina	Nabachakadu	Nampachina
	Chumade	Chemara	Chupadinnee	Nemara

I will leave the above table to speak for itself and pass on to show analogous differences in the section names of some tribes in the northwest districts of Queensland. In an article presented to the Anthropological Society in 1899 I published a table of the adult forms of the eight intermarrying sections in the locality mentioned, and I ask the reader to refer to that table.¹ Among the blacks therein represented, Narachoo is used from birth to puberty instead of Burrаланjee; Blaniwoo instead of Bolanjee; Boonongoona instead of Kommeranje; Warkee instead of Narrabalanjee; and Thimmermill is the juvenile form of Yakamurri.

¹ *American Anthropologist*, N. S., 1, p. 596; *Jour. Roy. Soc. N. S. Wales*, xxxiii, p. 111.

In another paper published in this journal in 1900 I submitted a table showing the adult forms of the eight sections of the Lunga and other tribes in the Kimberley district of Western Australia, to which the reader is referred.¹ In these tribes we find that the adult form of the section name Jakara is known as Changarra from birth to puberty; Janima is Chau-an; Jungary is known as Chau-arding; and Julimar is called Chu-a-ru until puberty is reached.

Among the tribes mentioned in both the preceding paragraphs, there are two forms of all the male and female section names, the same as in the Chingalee.

Referring further to the Chingalee marriage regulations I would like to state that when Spencer and Gillen visited that part of Central Australia they prepared a table to the effect of the one given below.² The sections which marry one with another and the denomination of the resulting offspring are of course identical in all respects with the information given in my tables published in this journal,³ but Spencer and Gillen arranged the sections differently in their table, for the purpose of making them fit in with paternal descent.

TABLE II

Moiety	Husband	Wife	Offspring
Willitji	Chimitcha	Chungalee	Taralee
	Chuna	Chula	Tungaree
	Tungaree	Champina	Chuna
	Taralee	Chemara	Chimitcha
Liaritji	Chungalee	Chimitcha	Champina
	Chula	Chuna	Chemara
	Chemara	Taralee	Chula
	Champina	Tungaree	Chungalee

Spencer and Gillen profess to have discovered that the first four names in the "husband" column are called by the collective name of *Willitji*, and that the remaining four men in that column are known collectively as *Liaritji*, thus constituting two independent moieties,

¹ Op. cit., N. S., II, p. 186.

² *Northern Tribes of Central Australia*, p. 100.

³ *American Anthropologist*, N. S., II, p. 495, with map. Ibid., VII, pp. 301-304.

in each of which the fathers are said to transmit their moiety names to their sons from generation to generation. This succession holds good only while the four men of a so-called moiety marry No. 1 or No. 2 wives; when we come to the progeny of No. 3 or No. 4 wives the succession of the men collapses altogether.

For example, let us suppose that each of the first four men in the "husband" column of the above table marries a No. 3 wife. Then we shall find that Chimitcha marries a Chuna woman and has a son Chemara; Chuna espouses Chimitcha and has a son Champina; Tungaree weds Taralee and his son is Chula; and Taralee marries a Tungaree wife and his son is Chungalee. These four sons belong to the moiety Liaritji, as we see by the table, instead of to the Willitji moiety like their fathers. If the four "husbands" of our example had married No. 4 wives the result would have been the same.

It is evident that half of a man's possible wives and half of his possible families would belong to the Willitji moiety, and half his possible wives and families to the Liaritji moiety—the section and the moiety of the children depending altogether upon the mother in every case that can possibly occur. We have therefore demonstrated that the four "husbands" of our example are sometimes the fathers of Willitji children and sometimes of Liaritji children, according to the women whom they marry. Moreover, for incontrovertible evidence of the custom of marrying the four kinds of wives which I have described as Nos. 1, 2, 3, and 4, the reader is referred to the list of living examples of such marriages reported by me in a previous communication.¹

Whatever may be the signification of the terms *Willitji* and *Liaritji* it is abundantly clear that they cannot be the names of two independent moieties, because as shown above the sons of Willitji men are liable to be scattered at random through all the sections of the entire community. The partition of the tribe into two parts, Willitji and Liaritji, utterly fails either to prove descent of the sections through the men or to establish exogamy of the moieties.

Spencer and Gillen assert that the eight sections of the Warra-

¹*American Anthropologist*, N. S., VII, pp. 303-304. See also other lists in other publications.

monga tribe are divided into Uluuru and Kingilli; that the Umbaia are divided into Illitji and Liaritji; that the Wargaia are divided into Uluuru and Bingaru; that the Bingongina are divided into Wiliuku and Liaraku, and so on.¹ Examination of the tables given by the authors in all of these tribes fails to prove that a single one of the so-called "moieties" has perpetual succession through the men or through any other channel, without which any bisection of a tribe must fall. I have elsewhere spoken of these tables as "un mélange confus et hétéroclite."² The classification of the women into two sets or cycles as exemplified in my table of 1900, already cited, is the only division known to me in which each set has immutable succession within itself.

Another table can be formed by taking a category of four sections of women from among whom four specific sections of men are bound to obtain their wives, whether of the No. 1, 2, 3, or 4 designation. Such a table has previously been given in this journal,³ to which the reader is referred. That table does not, however, profess to exhibit a partition of the tribe into two independent portions. The quartette of men do not reproduce themselves in the next generation; neither do the quartette of women. All that is aimed at in the table of 1905 is to bring together the four different sections of men and women who can marry one another, and enable us to see at a glance who are the potential conjugal mates of any given man or woman. Further study of the subject will reveal to us that my table of 1900 does not illustrate exogamy; neither does my table of 1905; neither does Spencer and Gillen's table. It is therefore obvious that notwithstanding our repeated attempts to divide a tribe into two such parts that the men of one part shall marry the women of the other part, and such women only, we are met with disappointment in every case. The conclusion therefore seems inevitable that there is no absolute exogamy in any of the tribes under discussion.

PARRAMATTA,
NEW SOUTH WALES.

¹ *Northern Tribes of Central Australia*, pp. 101 and 102. From information supplied by reliable correspondents I had previously reported the intermarrying sections of all the tribes mentioned.

² *Bull. Soc. d'Anthrop. de Paris*, VII, série V, p. 173.

³ *American Anthropologist*, N. S., VII, p. 302.

PROCEEDINGS OF THE ANTHROPOLOGICAL SOCIETY OF
WASHINGTON

Meeting of February 18, 1908

At the 414th meeting, held February 18, Miss FRANCES DENSMORE read a paper entitled *Music of the Chippewa*, using as illustrations many phonographic records obtained by her during a season's work for the Bureau of American Ethnology among the Chippewa of Minnesota. Miss Densmore said that the music of the Chippewa is an echo from the land of the pine trees, the lakes, and the little hills. All their life is intertwined with music: from babyhood to death the songs of the people express the joys and sorrows of life, the exultation of war, the solemnities of their religion, the tenderness of love and the cradle songs, farewells to the warrior, and dirges for the departed. Miss Densmore gave a cradle song, an invitation to a ceremony, a plaintive love song, the requiem of chief Flatmouth, the song of Man-ah-bo-zho who wrung the ducks' necks, and a series of songs of initiation into the Grand Medicine Society, which latter ceremony was described in some detail. At the close of Miss Densmore's paper three Chippewa Indians visiting Washington gave a representation in costume of the initiation of a candidate for membership in the medicine-lodge, and the effect of the songs, accompanied with the rattle and drum, was very striking. The chief also made a speech laudatory of his white friends in Washington, the Reverend J. A. Gilfillan interpreting. The paper was discussed by Miss Fletcher and Mr Wead.

Meeting of March 3, 1908

The 415th meeting was held in the assembly hall of the Cosmos Club. The paper of the evening was by Mr GEORGE R. STETSON, on *The Industrial Classes as Factors in Racial Development*.

Mr Stetson said that the factory system is of great antiquity. Established in England during the Roman occupancy, the employees were servile and the processes manual. Free labor and motive power were introduced in the middle of the eighteenth, and the modern factory system with steam power in the nineteenth century. The cruelty and misery, the excessive hours of labor, the gross neglect of hygiene and sanitation, aroused public opinion, and in 1802 Sir Robert Peel introduced

into Parliament the first sanitation act. In 1906, the approximate number of persons employed in factories, laundries, and workshops exceeded 5,000,000. Of all employed in textile factories, 71 per cent. were women and children. In certain industries men are banished, women and children demanded, and the demand is supplied at the cost of physical and moral deterioration.

Mr Stetson enumerated various occupations that are dangerous to the health of the operatives. In the weaving sheds, where artificial humidity is produced, the air sometimes contains 34.6, 39.6, and 41.6 volumes of carbon dioxide per 1,000, although the law allows only nine volumes per 10,000 of air. Very few mills are in good sanitary condition, and the result of the conditions and the employment is to lower the weight, stature, and health of children, and the general health of all the operatives.

As an indication of the deteriorating effect of factory life, of the 42,613 children under fourteen years of age examined by the surgeons for certificates of fitness for work, the large mill towns furnished 61.22 per cent. of the rejections between the ages of thirteen and fourteen years. An official report concludes: "Human life in England is being sacrificed to the factory and workshop." Overcrowding and unhealthful housing are great evils, and the principal causes of vice and disease. The death-rate in the manufacturing towns is two and a half times larger than in the rural districts of the same county. In Sheffield the infant death-rate is 234 per 1,000, and in other localities the conditions are equally deplorable. That racial vitality and mentality is being gradually enfeebled in the urban, factory, and workshop population of England is generally conceded. The mechanizing and enervating influence of machinery is recognized by the English inspectors and by all others who have made the factory system a subject of observation or study.

In concluding, Mr Stetson remarked that the factory system as at present conducted does not create skilled and intelligent workmen, affords no opportunity for intellectual development or educational acquirement, and is powerless in training men to be its directing forces, while the limitation of age and the ignorance of a trade tend to the increase of pauperism and dependence.

The paper was discussed by Professor W. H. Holmes, who said that in a small way much has been done to protect the worker, but to secure ideal conditions is difficult, and that there would probably always be a certain amount of deterioration. By Dr Aleš Hrdlička, who remarked that the employment of children is the chief source of danger, because the seeds of disease are implanted at a period when the body is undeveloped.

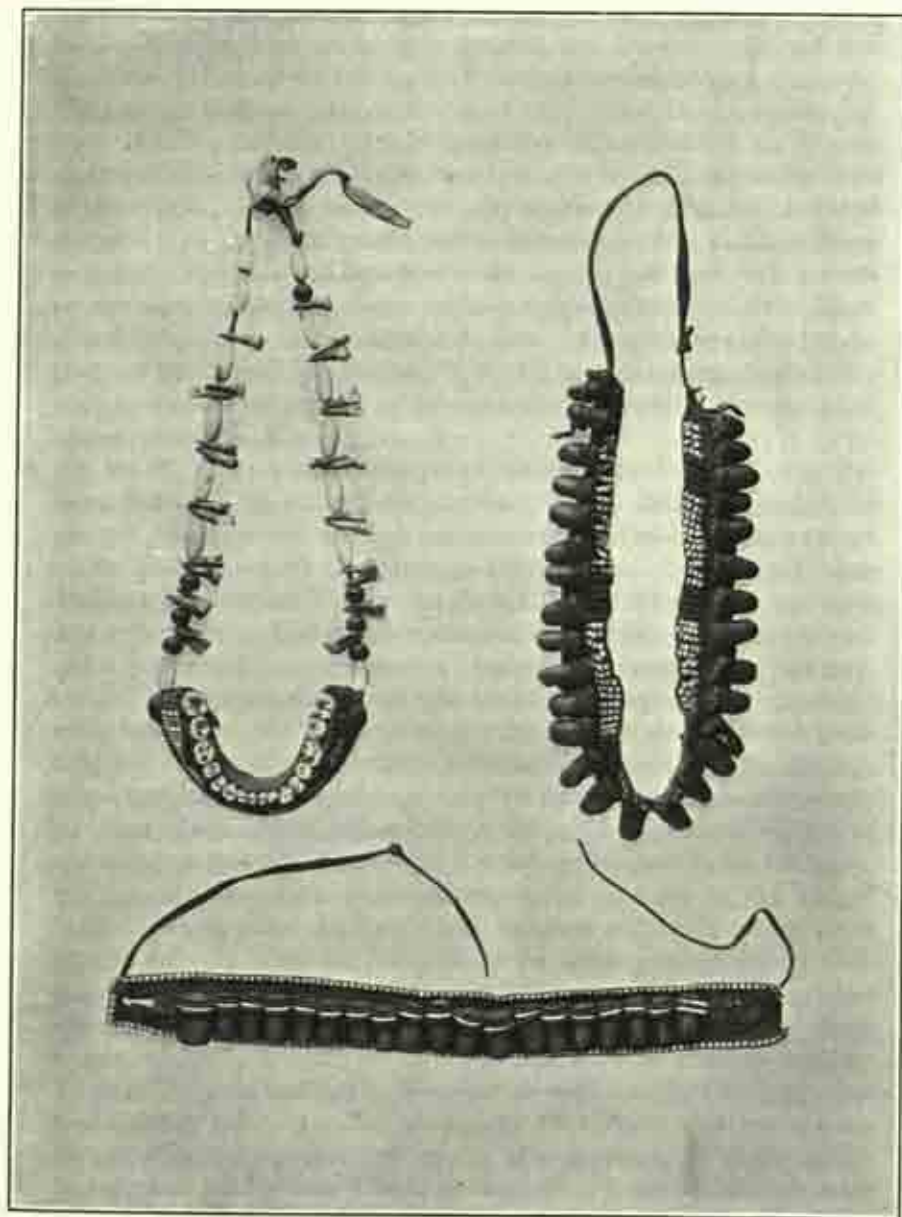
By Major Clark, who expressed the opinion that child labor is not an unmixed evil, and that it is chiefly a sanitary question. By Mr Robinson, who suggested old-age pensions as a means of avoiding pauperism.

Meeting of March 17, 1908

At the 416th meeting a demonstration of Indian trophies consisting of parts of the human body was made by the President and the Secretary.

DR ALEŠ HRDLÍČKA exhibited a specimen, thus far unique in the collections of the United States National Museum, consisting of a string of beads and human teeth attached to a human lower jaw partly covered with decorated deerskin, the whole forming a necklace (pl. xv). The specimen, recently transferred by the Army Medical Museum to the National Museum, was collected among the Navaho, about 1865, by Dr B. A. Clements, U. S. A., and was said to consist of the lower jaw and teeth of a fallen enemy; but as such trophies have been observed on no other occasion among the Navaho, there is some doubt whether the necklace was made by a member of that tribe. The use of bones and of other parts of the human body was extensive among many primitive peoples, including the Indians (see *Smithsonian Report for 1906*, p. 423-438). The motives were of four classes: (1) Bones of relatives were preserved among some tribes, for a time at least, as an expression of piety or in pursuance of tribal custom; (2) The head, scalp, limb, jaw, or other part of the body of a slain enemy was preserved as a true trophy, as evidence of the owner's or his party's prowess, as a matter of pride, personal satisfaction, or compensation for previous loss; (3) The skull or other part of the body was believed by some Indians to impart to their possessor certain desirable qualities of the individual from whom it came, or to give the later owner a dominant power over the spirit of the former; or (4) the relic was a charm, or fetish, with supernatural power, and as such was useful or even necessary in ceremonies, curing, gambling, etc. The necklace here mentioned belonged in all probability to the last category and very likely had been the property of a medicine-man.

The Secretary exhibited two necklaces made of the first joints of human fingers fastened to a beaded band of leather (pl. xv). They were both collected by Surgeon Clements and came from the Apache and Ute Indians respectively. Their history is unknown, but the Apache necklace may be the one mentioned by Mr Edward Palmer in his notes on an engagement with those Indians in Arizona during 1865, and referred to by Mr W. E. Safford in the second paper of the meeting. This necklace consists of twenty-nine finger ends mounted on a band of human



OBJECTS DECORATED WITH HUMAN TEETH, JAW, AND FINGER ENDS

skin and bordered with vertical rows of rather large black and white beads. It has been worn about the neck, as the band has accumulated a coating of grime from contact with the skin, and the indications are that it was tucked beneath the hunting shirt except on extraordinary occasions.

The Ute necklace consists of a band $12\frac{1}{2}$ inches long, and also apparently of human skin. White beads like those used on the Apache necklace are set on the edge, and each nail joint is ornamented with three lines of white and blue beads, applied at the base of the nail. A few of the nails have horizontal grooves cut across them. This necklace shows an esthetic treatment that is absent in the Apache specimen, and is comparable with the Cheyenne finger necklace figured in plate LV of the *Ninth Annual Report of the Bureau of Ethnology*. Attention was called to the citations by Capt. J. G. Bourke, U. S. A., in this report, showing the wide prevalence of the use of human relics in America and the ideas connected therewith.

MR W. E. SAFFORD read a paper entitled *The Explorations of Edward Palmer*. Mr Safford characterized Edward Palmer as one of the greatest collectors that America has produced, and said that the portions of his labors shown by the entries in the catalogue of the United States National Museum would alone be enough for the life-work of one man. His collections in botany are enormous, and include many new genera and a great number of new species; but not less important are his gatherings in ethnology, archeology, and the other branches of anthropology; while biology, mineralogy, and other subjects have profited by his indefatigable energy as a collector. A Palmer specimen, said Mr Safford, leaves nothing to be desired as to complete data. Edward Palmer is now 74 years of age and is still actively at work. As a youth of sixteen he embarked on the ship *Water Witch*, which sailed in 1853 for Paraguay, bearing members of an exploring expedition sent out by the United States. He ascended the Paraná and Paraguay and made collections of botany, etc. In 1861 he collected in the Geological Survey of California, and at the outbreak of the Civil War came to Washington and was made assistant surgeon. In 1865 he was detailed as medical officer at Fort Whipple, Arizona, and later occupied a similar position at Camp Verde in the same territory. Wherever he was he utilized his spare time in collecting, and, as an illustration, said Mr Safford, while on an expedition against the Apache, took part in an engagement in which twenty-two of these Indians were killed, and subsequently ransacked their camp for ethnological specimens. After extensive travels in the Southwest, Mr Palmer spent several seasons in eastern United States; later he en-

tered the Mexican and West Indian fields, where, up to the present, he has continuously worked, bringing out yearly material of the highest interest and value to science.

The Society at this meeting elected to honorary membership Dr William L. Abbott, on whom the mantle of Mr Palmer's unquenchable enthusiasm has fallen and who at present is contributing enormously to the National Museum from the rich stores of Malayan biology and anthropology.

Meeting of March 31, 1908

The 417th meeting, held March 31, was addressed by the HONORABLE FRANCIS E. LEUPP, Commissioner of Indian Affairs, on *Some Side-lights on Indian Administration*. Mr Leupp said that in dealing with the Indians the Government as a rule has gone too fast, has been too greedy of results, and has failed to gain an understanding of the Indian habit of thought. It stands to reason that we cannot civilize with a club, and attempts to force matters beyond the normal rate of the adaptiveness of the Indian is to court failure. The present policy of the Indian Office is to limit attempts at progress to what the Indian can understand. As an example of the rational methods now pursued, Mr Leupp recounted the history of the recent troubles at the Hopi pueblo of Oraibi, Arizona.

Mr Leupp considered the subject of the Ute migration of 1907 from Montana to South Dakota and related the methods employed by the Indian Office to convert a dangerous situation into one that worked to the advantage of the Indians in teaching them the benefits of labor. He spoke also of the so-called Navaho outbreak of last year, when a desperate character induced six others to aid him in an attempt to carry off the agent. In this case troops were sent and some of the Navaho were put in jail.

In conclusion Mr Leupp detailed the advanced methods now in practice in regard to Indian schools, and in passing said that the Government had begun wrong end foremost by establishing higher schools and introducing the "frills" of boarding schools. Now schools are being brought near to the pupils, and the day-schools have buildings constructed on sanitary principles; the small children are not allowed to go hungry, and the parents are permitted to visit the schools freely. "Schools," said Mr Leupp, "are to awaken the conscience of the white man toward the Indian."

In discussing Mr Leupp's paper, Dr Hrdlička said that much of the distrust with which the Indians regarded the schools was due to insanitary arrangements at the old schools; as a result the children were often sent home afflicted with disease. Too many school duties and a lack of

regulated systematic exercise were said by Dr Hrdlička to be the cause. These conditions exist in some of the Indian schools and can be easily remedied. Hygienic instruction is important. Irrespective of this, Dr Hrdlička viewed with favor any plan to extend nature studies among the Indian children.

Professor Holmes expressed great satisfaction in the paper of the evening. He regarded Mr Leupp's views as correct, and expressed hopefulness that we shall see our way through. Professor Holmes asked what data the Indian Office has collected concerning the Indian family, and customs of inheritance. Mr Leupp replied that each agency has a family record, but it is difficult to trace relationships because many of the Indians have acquired several names; to obviate this difficulty the Office has given arbitrary names; also in signing agreements, papers, allotments, etc., the finger-print system is used.

Dr Swanton presented the need for genealogical tables of the Indians for use in sociological investigation.

Meeting of April 14, 1908

MR JAMES MOONEY presented a paper on *Race Factors in the Population of Ireland*, exhibiting a wall map and giving a geographical description of the four provinces and the royal district of Meath as a groundwork for his remarks.

Mr Mooney began with a résumé of the prehistoric remains of Ireland, especially of the megalithic structures. These, he said, are traced from southern Norway, south through the British Isles, France, Spain, and northern Africa, to Tunis, and on some Mediterranean islands; but in Ireland, as in other countries, it is unknown who were their builders. The mythic history of Ireland presents names of supposed peoples, which Mr Mooney said are names of nature gods only. With the Firbolg, said to be a dark stock, we have the first authentic colonization, these being divided into the Firbolg people, Firdamnon and Fergallian. The Gaelic Kelts next came, perhaps about the sixth century B. C., overpowered the Firbolg and drove them west into Connacht, where they finally disappeared in the third century A. D.

Mr Mooney traced the distribution of the Keltic stock from its native seats in central Europe into Italy, Spain, down the Danube, and north into the British Isles, and said that about 300 B. C. a stream of these people passed across Europe and became the Galatians in Asia Minor. The Gaelic tribes of Ireland remained with practically no admixture from foreign sources until about the ninth century, when the Scandinavians

began to descend on the island. In 837 these made the first settlement, and by 850 they had become established at various points along the coast. In 1014 Brian Boromhe broke their power, but many of them remained as a component part of the population. The speaker observed that in contrast with the Scandinavian town-founding habit, the Irish were a pastoral people and did not build cities.

In 1169 came the Normans; then began the struggle that has lasted to the present day. With the Normans came some Welsh, and likewise a Saxon colony was founded in southeastern Ireland at an uncertain date, giving a slight infusion of this blood. The long and painful period during which the English efforts to colonize Ireland shifted and profoundly changed the population was broadly sketched, and the displacements shown by frequent references to the map.

Mr Mooney's interesting and lucid paper was discussed by the president, who said that physical anthropologists can find no traces in Ireland's present population of the Mediterranean or Iberian types as history leads us to expect. In answer Mr Mooney said that there was little of Mediterranean or Iberian race in Ireland, the early colonization being Alpine.

The other paper of the evening, entitled *The First Fire*, was presented by Mr C. H. ROBINSON, who said that his endeavor would be to suggest merely the possible ways in which man became acquainted with the uses of fire. To this end the speaker traced the adventures of a group of early manfolk from the discovery by them of a fire kindled by lightning, the rude experimentation through which some of its properties were ascertained, its adoption as properties from animal enemies and the subsequent quasi accidental discoveries of its use in chipping flint, hardening and sharpening spears of wood, cooking, etc., as well as the consequent effects in determining social organization, etc.

Meeting of April 28, 1908

At the 419th meeting of the Society DR AINSWORTH R. SPOFFORD read a paper entitled *Facts and Causes of Emigration*.

In his opening remarks the speaker traced the history of emigration from the time of the early migrations, which had as their causes race hatred, political intolerance, and religious persecution, to the great voluntary movement of the nineteenth century to this country. There have been great migrations, said Dr Spofford, but never like this where twenty-five millions of human beings have swept into America to better their condition. Dr Spofford reviewed all aspects of the great subject

of the population of America from the time the emigrants embark on the great transatlantic steamers to the time when they become component parts of our heterogeneous nation.

He spoke of the elements of the population that are regarded as the most valuable, as the English, German, Scandinavian, etc., and discussed the racial elements that have entered the country of later years. The *pro* and *con* of the desirability of restricting immigration were impartially given by Dr Spofford, from the arguments of the anti-immigrationists to those of the class who believe that it would pay the Government to furnish passage free to incomers.

The paper was discussed by the president, by Major Clark, Mr Robinson, and Mr Wead.

Meeting of May 12, 1908

At the 420th regular meeting MISS ANGEL DE CORA, of the Carlisle Industrial School, read a paper on *Indian Art — Its Present and Future*, exhibiting a large number of examples of the handicraft of her pupils at Carlisle. Miss De Cora said in part that the simple forms and figures of Indian art revealed the influence of the surroundings of the Indian on his daily life, and it mattered little whether his symbols resembled the objects they represented. His aim was to picture his thought, which he did on the material at hand; his skin, garments, and utensils. His pictorial arrangements tended to develop his decorative sense and gradually sacrificed all other ideas to the purely decorative. The Indian artist made his symbolism simple, seldom attempting realism — to convey the idea of buffalo, he made conventional figures of that animal, as head, horns, or hoofs to represent the whole. The strength of Indian designing lies in its simplicity of forms and arrangement. "I have been told by old people," said Miss De Cora, "that before the days of the white man, their decorations were mostly symbols of human life, animal forms, and the broader aspects of nature. The conventionalized leaves and flowers employed in Chippewa beadwork are due to the white man's influence. This style of designing is spreading among the Indian tribes, as it is supposed to be pleasing to white customers."

The Indian art of today is but a memory of the old life. The designer still employs the symbolic figures, but they have lost their original significance and they are used only on such articles that the Indian clings to.

"My work at Carlisle," said Miss De Cora, "has been to encourage the school Indian to keep up his native art. It was uphill work at first,

for my pupils are all young people, most of whom have spent their days at school and have had little or no home influence. I ask my pupils to make a design for a frieze or wall decoration, also borders for printing, and designs for embroidery for rugs. The ones who respond to my request are the full-bloods, and they lead the rest on in the work. Thus we transplant the old ideas in new ground and the work increases in interest.

"I have come to the conclusion that though the pupils represent various tribes and each works according to his tribal style, they show in their work much that is in common in form and color; and under this conviction I make experiments. I have taken the best of the designs and studied and analyzed them, and in the process I have singled out four simple forms, the straight line, the square, the triangle, and the terrace. These I draw upon the blackboard, explaining to my class that they were the foundation of Indian design and pointing out that nearly every design contained four fundamental figures. I requested each one to make an original design on the basis of the four figures, and the result was, to say the least, most gratifying, and I believe we can establish a method by which we can keep up the Indian designing. So far, my efforts have been confined to the decorative art of the Middle West tribes, but I believe that, through the aid of some of our scientific students that of the Southwestern as well as the Alaskan Indian tribes could be studied and systematized in the same way for the Indians at Carlisle and elsewhere.

"We Indians think we can contribute something to American art, and in time I hope to train my artists sufficiently well that their work will find a commercial value in manufacturing concerns where good designs are needed. An Indian designer, professionally trained, would readily find employment where such work is in demand. One of the art schools in Philadelphia has already appreciated the value of Indian art to the extent of offering an opportunity to our Carlisle students who desire to be trained professionally. Painters and sculptors have long realized the picturesqueness of the American Indian, and immortalized him on canvas and in bronze. In the field of decorative art, if not in realistic art, let the Indian contribute his gift."

The paper was discussed by Mr Leupp, Mr Mooney, and others, and the audience examined with interest the many designs presented by Miss De Cora.

Meeting of May 26, 1908

The 29th annual meeting was held at the Cosmos Club on the above date. The report of the Secretary was read, showing the last year to have been a prosperous one.

The Treasurer reported receipts amounting to \$431.14, and expenditures \$234.71, leaving a balance of \$196.43.

The Curator's report was presented, and the Society proceeded to the adoption of the new by-laws which simplify the organization by providing for a president, a vice-president, a secretary, and five councilors, who, with the past-presidents, constitute the board of managers.

The election of officers resulted as follows: President, Dr Walter Hough; Vice-President, Mr James Mooney; Secretary, Dr John R. Swanton; Treasurer, Mr George C. Maynard; Councilors, Messrs F. W. Hodge, C. L. Robinson, J. N. B. Hewitt, I. M. Casanowicz, and W. E. Safford.

Obituary notices of deceased members were read, as follows: Walter Hough on *Paul Edmond Beckwith*; O. T. Mason on *Crosby S. Noyes*; George C. Maynard on *John Hitz*.

The following corresponding members were elected during the quarter: M. Th. Volkov, St Petersburg; Prof. A. de Mortillet, Paris; Dr William Howard Turner, Philadelphia; Dr Alexander F. Chamberlain, Worcester, Mass.; Dr Roland B. Dixon, Cambridge, Mass.; Mr Charles E. Brown, Milwaukee, Wis.; and Mr George G. Heye, New York City.

Mr Ernest M. Bales, of the National Museum, was elected to active membership.

WALTER HOUGH,
Secretary.

BOOK REVIEWS

The Chilkat Blanket. By GEORGE T. EMMONS, *Lieutenant United States Navy.* With Notes on the Blanket Designs, by FRANZ BOAS. Mem. Am. Mus. Nat. Hist., Vol. III, no. 4. New York, December, 1907. 4°, pp. 329-401; fig. 535-592; pl. 24-27.

This is a book that every lover of the textile art would be proud to own and to which every student of its history should have access.

In the long perspective between the brush fence bounding the game drives or the primitive weirs of savagery and the Gobelin tapestries, the Chilkat blanket holds the middle place. It is the living survivor of the historic feather cloaks, of the exquisite technic in vicuña wool of Peru, the Mexican tapestries in vegetal fiber, and the old-time blankets of the North in goat's wool. To the student of culture-history the Chilkat blanket stands now at the threshold of all loom work, but the author will tell his own story.

During twenty years Lieutenant Emmons gave his vacations to the Northwest Coast Indian tribes, gathering specimens and information for his studies, and ransacking museums of the world for photographs of dancing regalia, blankets, and pattern boards, all of which last are reproduced in his book.

Three elements are said to enter into the blankets — the wool of the mountain goat, for woof and covering of the warp; sinew thread from the caribou or whale, for uniting the divisions of the fabric; and spun cedar bast, for the body of the warp.

The man hunts the goats and provides the yarn beam and the pattern board. The woman sweats the hide, plucks the wool, spins the two-strand cord for warp and woof, and makes ready for the weaving. All the processes are minutely described in the text, which is lighted up with legends and narratives and excellent drawings.

After the woof-yarn is spun, it is dyed, the warp is never. Only three colors were in the old times employed besides the natural white of the wool — namely, black, yellow, and bluish green. In the older blankets dyes were not used.

The loom is most interesting for its primitive simplicity. Two uprights resting in heavy wooden shoes, one broad cross-piece in which

small holes are pierced to hold up the work, narrow slats to keep the up-rights from spreading, are all. The shuttle and harness are wanting.

The loom being set up, the warps are measured, cut, and hung over a narrow line of rawhide. The angular shape of the blanket's bottom is effected by carefully measuring the threads, and the warps are fixed in place for weaving by means of a row of two-strand and one of three-strand twine. The ends of the warps being counted off in sets are neatly tied in small bags of goat intestine, the usual hours of fasting are observed and all things are ready.

The woman seats herself in front of her work with her knees drawn up to her chin. She produces the designs from her pattern board, not by weaving across and back, but in strips and narrow fields, which are united by ingeniously interlocking their edges. Several color-fields may form divisions joined by means of fine sinew cord, and the lines of union are neatly concealed by three-strand twine or braid. In no part of the technic are two threads of different colors used in the same twining. It is interesting to note, throughout the minute description of the structural parts and the many technical processes, how the author's naval training has lent itself to the vocabulary of the Chilkat blanket. In his comparison of hand textiles (*Geflechtwerke*) with loom-work (*Geterbe*) Lehmann coins new terms; not so the Lieutenant. His bends, reeves, strands, lacings, windings, coilings, half turns, and many more seem to answer naturally to the demand, only you have to be up in the sailor lingo a little to follow him.

At the close of this faithful and delightful technical description and narrative, Professor Franz Boas, who had also studied the decorative, symbolical side of this Northwest Coast graphic art, aided by Dr John R. Swanton, joins the author in a chapter on the blanket designs presented in his superb collection of photographs. The patterns, which look like a lot of eyes and mouths grinning at one from all directions, are transferred from boards painted by the men, as previously stated. But the same abbreviated symbols are found in carvings on silverware and food dishes, as well as in paintings on boxes and garments. The question is raised as to the order of priority among carvers, painters, and weavers. Dr Boas has "the clearest evidence that the blanket pattern is merely a painted design, which is transferred without any change to the technic of the weaving." Behind this copying, however, lies the long perspective of compromises between the painter, the carver, the engraver, and the weaver. In figures 553-558 (28 drawings) a flood of light is thrown on this particular study of relationships. The fact is clearly brought out

that more than one blanket has been copied from the same pattern board and that the twenty-four Emmons blankets are divided by their patterns into two groups. The narrower lateral designs also have their standard motifs. The pictures in all these forms of Northwest Coast decorations are made up of "design elements," which have been carefully gathered by Lieutenant Emmons, numbered, named, and illustrated (fig. 559). In the elaborate discussion of these elements and their functions, Professor Boas is convinced that the patterns have drifted out from the literal, have become fixed in their essential features, and attempts to represent specific animals are very limited. The patterns remain the same, no matter what animal is represented. Professor Boas, with Lieutenant Emmons and Doctor Swanton as his guides, goes minutely into the discussion of the blanket types one by one. Each pattern board, blanket, dancing apron, shirt, and legging in the whole Emmons collection is then beautifully illustrated, deciphered by Emmons and Swanton; and then examined in detail by Boas singly and comparatively as to designs, arrangement of pattern elements, variations, and colors. Four plates, two of them colored, finish the priceless monograph.

OTIS T. MASON.

Nova Guinea. Résultats de l'expédition néerlandaise à la Nouvelle Guinée en 1903 sous les auspices de ARTHUR WICHMANN, chef de l'expédition. Vol. III. Ethnography and Anthropology, by G. A. J. VAN DER SANDE. Surgeon Dutch Royal Navy. Leyden: Brill, 1907. 390 p., 50 pl., 216 figs., map.

This well-printed, beautifully illustrated and adequately indexed volume treats of the natives of New Guinea under the following heads: Food, drink and delicacies; clothing and ornament; habitations and furniture; hunting and fishing; agriculture; navigation; trade and communications; industry; arms; customs and government; art; religion; anthropology. Throughout, Dr van der Sande's own investigations and observations are compared and correlated with those of other travelers and ethnologists—the bibliography (pp. 364-373) contains nearly 300 titles. The illustrations and the text are also admirably arranged for purposes of exact reference. Material is here afforded for the correction of many misstatements and partial truths of explorers and ethnologists. On page 1, e. g., we learn that in the regions of Dutch New Guinea under consideration the so-called "edible earth" is used as a pigment, and not as either food or medicine; and at pp. 353-354, "it is shown once more that the Papuan is by no means everywhere dolichocephalic, as still taught by

Keane and Deniker." The vegetarian habits of the natives have also been exaggerated, although in the case of the common people animal food is a luxury. Abstentions from the eating of pork may be relics of totemism, but for the fact that blacksmiths practise such a taboo the author suggests "an imitation of the Mohammedan blacksmiths to whom the people are indebted for the smith's craft." The following statement (p. 13) is interesting in view of certain widespread misinformation of a general character: "The Papuan from Humboldt Bay to the Amberno River does not know any kind of stimulating drink. He best likes the milk from the cocoanut and ordinary river or well water, and fortunately has no liking for our fermented liquor or spirits." This is quite different from the abuse of palm wine among the natives of Geelvink bay.

In several places along the coast of New Guinea the use of tobacco was until recently quite unknown. In most places the Papuans (like the Malays) "appear to find the tobacco too strong to chew unmixed." Often the cigarette, like the *siri* quid, is passed around, even to children. To draw the line between clothing and ornament among the most primitive people of New Guinea is very difficult. The influence of climate does not appear to any extent, and only on the wedding day does the bride put on her bark petticoat, which is really due to the Malay coast traders and navigators, as the Malay name for New Guinea, Papua Talandjang ("land of the naked Papuans"), itself suggests. The penis-cala-bash of the men may be more ornament than shame-clothing. As to the tattooing, the author observes (p. 41): "A beautiful tattooing of a naked person creates in our mind the same impression as a beautiful dress." Among common motifs in tattooing are, for men, the fish-eye, forest-leech, hornbill, frog, mollusk, etc. The wearing of feathers and flowers in the hair is widespread. Wigs made of human hair are in vogue "in coast districts situated at such distances from each other that mutual intercourse is excluded" (p. 63) — such wigs being worn "in commemoration and adoration of blood or close relations." The so-called "combs" of the Papuans are used for scratching, not combing. Ornamental armlets are worn by men even more than by women, and, "righthandedness prevailing," the fixed armlet of the left upper arm serves as a place in which to carry all sorts of small articles. Among the types of dwellings in use among the Papuans are the one with the turtle-shaped roof, the pyramid-shaped, the house with a horizontal ridge-pole, etc. The *raison d'être* of Papuan pile-dwellings "may be looked for in the greater cleanliness and the better hygiene obtained in this way, but also in the greater security against man and beast which such a dwelling affords" (p. 129). The picture

(fig. 102) of the natives "making twine from Pandanus fibers" is interesting as an example of coöperative labor. At Lake Sentani "fishing and repairing nets, as well as diving for fresh-water molluscs, are left to the women," but in some places at the right season fish is so abundant that men and children have to come to their assistance." At Lake Sentani fishing with hook and line is not practised. Agriculture is chiefly the work of women, men going no further than to clear the ground. It is interesting to note concerning the carrying bags, which seem to be manufactured by the women, that on them is often found (carved *à jour*) the figure of the dog, which is here so often the companion of the women, to whom it seems more attached than to the men, who treat it less sympathetically. The characteristic and universal craft of New Guinea is a "dug-out," some of which boats are said to reach 60 feet in length. A curious commercial development in these parts is the trade in trunks and the sale by one village to another of the right to cut down trees for boat-making (p. 194). At Lake Sentani there are "women's boats" and "men's boats." Important culturally is the trade between the western part of New Guinea and the East Indies (Ceram, Macassar, Tidore, Ternate, etc.). This trade even gave rise to Mohammedan settlements on the coast. The coasting trade (e. g., pottery of Point Moresby) is also significant. Among measures of value and currency employed are shells, dogs' teeth, stone adzes, boars' tusks, Trochus rings, stone hatchets, "antique beads," etc. These beads, which derive their value only from their antiquity, are probably of Chinese origin, as are also certain antique glass rings found at various points in the island. According to the author (p. 232), "already in early youth, the qualities of an all round clever workman are developed in the Papuan," and "in the social life of the Papuans the principle of division of labor has made as yet but little progress." Contrary to general opinion, the weaving industry (p. 237) does exist in certain regions of New Guinea, and the first weaving-frame to be described from the island was met with at Tarfia.

In Dutch New Guinea the method of arrow-release in vogue is the "archaic release" of Morse. In shooting, the belly is the point aimed at, whence the development of defensive girdles of bark. Among the Papuans observed by the author "young children, already at an early age, are given in charge of elder sisters; afterwards the education takes place in the school of practice, the boys participating in the work of the father, the daughters in the more numerous occupations of the mother. By this, children very early become as clever as their parents" (p. 265). In matter of play, the children are "entirely left to themselves"—the

author "never saw a father or a mother playing with the children." In Dutch New Guinea circumcision of boys is not practised, although known in certain other parts of the island. On Humboldt bay and at Lake Sentani "before marriage absolute chastity is the rule" (p. 266). In several parts of New Guinea a "two children system" prevails. Married women also have sometimes (as, e. g., at Humboldt bay), their own property to which the husband has no right. The existence of "man-houses," on the one hand, in some regions, and of communal dwellings, on the other, in certain other regions, "replaces for the greater part family life" (p. 276). This is why "the ties between parents and their children on Netherlands territory are less tender than, e. g., in K. W. Land, from where touching examples are given." Respecting art, we are told (p. 283): "Every Papuan possesses a certain artistic sense, and all are accustomed to apply it. It is for this reason that no member of Papuan society makes art his sole means of existence." Nevertheless, "entire villages may possess a kind of monopoly of producing articles of native, technical art." It is a curious fact (p. 286) that "real picture-writing, — pictography, — recording events, and giving by a series of pictures a connected story of an event, does not appear to occur on N. G." But "the ornament of the Papuan represents a kind of writing, expressing ideas, and giving a legible form to thought," — the natives of Asé, e. g., termed the author's writing *āne*, "ornament," and seemed "quite familiar with the idea of writing." The chapter on religion (pp. 286-314) is of special interest, particularly the account of the "temples," in which "the principal spirits reside," and where "the religious life is concentrated and uttered in various forms" (p. 290). According to the author, "What strikes one first on entering the temple is that the noisy behavior said to be characteristic of the inhabitant of Humboldt Bay, is not heard inside, and that, as a rule, the little that is spoken is soft, sometimes almost in a whisper" (p. 292). No special costume or dress, "no kneeling or crouching down as an act of veneration in front of the temple, or before the deities worshiped inside," are in vogue, and "bending of the head as an act of devotion is unknown in Papua Talandjang." Inside the "temple" the sacred bamboo plates are kept. The proceedings inside are described at pp. 297-299 as witnessed by the author. These "temples" serve as puberty-houses for young men, and the presence or even near approach of women is tabooed. Open-air singing and dancing are common (p. 308), and, among the people of Mapar, "with their numerous dances which take place inside the house, men, women, and children are placed in separate rows, but dance all at the same time."

Chapter XIII (pp. 315-363) is devoted to (physical) anthropology. A larger use of the left hand than is customary with Europeans is noted (p. 316). The sitting attitude, with limbs crossed tailor-fashion, is not, as Deniker thinks, "an ethnic character of the Papuans." The Papuan seemingly "prefers pulling to pushing." The tribes farther in the interior "possess in a much smaller measure the characteristic of being noisy and laughter-loving" (p. 317). Meyer's mistaken report that the people of Arfak could not count beyond five is explained by "the fact that the fingers of both hands have the same name as the toes of both feet" (p. 321). The linguistic material, besides place-names and the appellations of all manner of objects, in this book consists of the numerals of several tribes, a vocabulary from Lake Sentani, and briefer ones from Angadi, Nagramadu, etc. In this chapter a number of interesting physiological details are given. Altogether, the present volume furnishes an excellent *aperçu* of the Papuans of one region of the great island of New Guinea, with the data so arranged as to be readily accessible and usable.

ALEXANDER F. CHAMBERLAIN.

SOME NEW PUBLICATIONS

AMBROSETTI, JUAN B. Exploraciones arqueológicas en la ciudad prehistórica de "La Paya" (Valle Calchaquí — Provincia de Salta) campañas de 1906 y 1907. Publicaciones de la Sección Antropológica, Facultad de Filosofía y Letras, No. 3. 1ª parte. Buenos Aires: 1907. 8°, 278 p., 121 fig., map.

ARANZADI, TELESFORO DE. Problemas de etnografía de los Vascos. Extracto de la "Revista Internacional de los Estudios Vascos." Paris: Paul Geunther, 1907. 8°, 50 p., ill.

ARVELO, MARTÍN MATOS. Algo sobre etnografía del territorio Amazonas de Venezuela. Ciudad-Bolívar: Imprenta de Benito Jimeno Castro, 1908. 16°, 26 p.

BANDELIER, AD. F. The Indians and aboriginal ruins near Chachapoyas in northern Peru. [Reprinted from *Historical Records and Studies of the United States Catholic Historical Society*, v, pt. 1, New York, 1907.] 8°, 51 p., 13 pl.

BOAS, FRANZ. Second Report on the Eskimo of Baffin Land and Hudson bay. From notes collected by Captain George Comer, Captain James S. Mutch, and Rev. E. J. Peck. Bull. Am. Mus. Nat. Hist., xv, pt. 2, New York, 1907. 8°, 371-570 p., ill.

BRIGHAM, WILLIAM T. The ancient Hawaiian house. *Memoirs Bernice Pauahi Bishop Museum*, III, no. 2, Honolulu, 1908. 4°, iv, 194 p., 178 fig., 23 pl. (\$3.25.)

CATHOLIC Wocekiye Wowapi. Published by Rev. Jerome Hunt O.S.B. Fort Totten, N. Dak. : Printed at the Catholic Indian Mission, 1907. 24°, 154, 53, [4] p.

Prayer book and hymnal in the Dakota language.

DIESERUD, JUUL. The scope and content of the science of anthropology. Historical review, library classification and select, annotated bibliography ; with a list of the chief publications of leading anthropological societies and museums. Chicago : Open Court Publishing Co., 1908. 12°, 200 p.

DUBOIS, CONSTANCE GODDARD. The religion of the Luisefño Indians of southern California. *Univ. of Cal. Pub. in Am. Archaeol. and Ethnol.*, VIII, no. 3, p. 69-186, pl. 16-19, Berkeley, June 27, 1908.

J. G. FRAZER. The scope of social anthropology. A lecture delivered before the University at Liverpool, May 14, 1908. London : Macmillan & Co., Ltd., 1908. 8° (6d.).

GOMME, GEORGE LAURENCE. Folklore as a historical science. London, Methuen & Co., n. d. xvi, 371 p. (7s., 6d.).

GORDON, E. M. Indian folk tales, being side-lights on village life in Bilaspore, Central Provinces. London : Elliot Stock, 1908. 16°, xii, 99 p. (Price, 3s, 6d.)

Chapters on : The country and the people ; Objects of worship and festivals ; Agriculture ; Curious remedies ; Births and marriages ; Death, burial, and the hereafter ; Folk tales and proverbs ; Snakelore, relics, and fossils ; Miscellaneous items ; The new religion.

HANS, FRED M. The great Sioux nation. A complete history of Indian life and warfare in America. The Indians as nature made them. Graphic descriptions of the social life, religious superstitions, habits, traits, customs, and manners of the wild Indians since the time of their discovery by Columbus, comprising the authentic accounts of their illustrious leaders, terrible battles, cruel massacres, daring exploits, heroism and marvelous fortitude. Vividly illustrated. Chicago : M. A. Donohue & Co., 1907. 8°, 575 p.

The book contains practically nothing of value or authority, although in his preface the author says : " My vast experience, aided by unlimited access to government and Colonial records, has enabled me to portray the Indian in a true light in every particular ; so that this volume may rank among educational works of the highest order," etc.

HEWETT, EDGAR L. Les communautés anciennes dans le Désert Américain. Recherches archéologiques sur la distribution et l'organisation sociale des anciennes populations au Sud Ouest des États-Unis et au nord du Mexique. Genève : Librairie Kundig, 1908. 4°, iv, 107 p., 17 pl., 20 fig.

The author's thesis as Doctor of Sociology in the University of Geneva.

JAMES, GEORGE WHARTON. What the white race may learn from the Indian. Chicago: Forbes & Co., 1908. 8°, 269 pp., many ill.

JOYCE, T. ATHOL, and THOMAS, N. W. Women of all nations: A record of their characteristics, habits, manners, customs and influence. London, Paris, New York, Toronto and Melbourne: Cassell & Co., Ltd. [n. d.].

To be published in twenty-four fortnightly quarto parts, at twenty-five cents per part. Part I contains the Introduction, pp. 1-35; Polynesia (by A. Hingston), pp. 36-48. There are many excellent half-tone illustrations from photographs. The editors are fellows of the Royal Anthropological Institute of Great Britain.

KEANE, A. H. The world's peoples. A popular account of their bodily and mental characters, beliefs, traditions, political and social institutions. New York: G. P. Putnam's Sons, 1908. 12°, xii, 434 p., 271 ill.

KROEBER, A. L. A mission record of the California Indians. From a manuscript in the Bancroft library. Univ. Cal. Pub. in Am. Archaeol. and Ethnol., VIII, no. 1, p. 1-27, Berkeley, 1908.

———. Ethnography of the Coahuilla Indians. *Ibid.*, no. 2, p. 29-68, pl. 1-15, Berkeley, 1908.

McBETH, KATE C. The Nez Percés since Lewis and Clark. [With an Introduction by Alice C. Fletcher.] New York, Chicago, London: Fleming H. Revell Co. [1908]. 12°, 272 p., 9 pl.

McLACHLAN, R. W. The first Mohawk primer. Montreal: 1908. 8°, 13 p.

An account of the extremely rare "Primer for the Use of the Mohawk Children," published anonymously at Montreal in 1781, and now attributed to Col. Daniel Claus.

MATSUMURA, AKIRA. A gazetteer of ethnology. Tokyo: The Maruzen-Kabushiki-Kaisha (Z. P. Maruya & Co., Ltd.), 1908. 16°, xvi, 492, 3 pp., 6 maps.

A most useful reference work, containing, in English and Japanese, 8,000 names of peoples and tribes throughout the globe. The descriptions are brief, in most instances only the habitat of the people being given. Appendix I gives a list of races and peoples arranged under the political divisions of the world. Appendix II consists of a list of works consulted, and shows the paucity of reference works at the author's disposal, especially in relation to America. The double-page maps contain the names and localities of the principal peoples of each continent.

MOENS, H. M. BERNELOT. Truth. Experimental researches about the descent of man. London: A. Owen & Co., 1908. 12°, 26 p. (Price 1s.)

The author proposes to conduct, in the Congo country, a series of experimental researches consisting of (a) artificial fecundation of the mature females of the anthropoid apes with the sperm of man; (b) the crossing of the different anthropoid apes either by natural or artificial fecundation; (c) the study of human diseases, more particularly syphilis, experimenting on anthropoid apes.

MORTILLET, ADRIEN DE. La classification palethnologique. Paris: Schleicher frères, 1908. 16°, 12 pl., with descriptions.

MÜLLER, SOPHUS. *L'Europe préhistorique. Principes d'archéologie préhistorique* par Sophus Müller, traduit du danois avec la collaboration de l'auteur par Emmanuel Philipot. Paris: J. Lamarre [n. d.]. 212 pp. (Price 10 francs.)

PRATT, A. E. *Two years among New Guinea cannibals.* Philadelphia: J. B. Lippincott Co., 1908. 8°, 359 p., ill.

RANDALL, E. O. *The masterpieces of the Ohio mound builders. The Hilltop fortifications, including Fort Ancient.* Columbus: Published by the [Ohio State Archaeological and Historical] Society, 1908. 12°, 126 p., ill.

SINCLAIR, WILLIAM J. *Recent investigations bearing on the question of the occurrence of Neocene man in the auriferous gravels of the Sierra Nevada.* Univ. Cal. Pub. in Am. Archaeol. and Ethnol., VII, no. 2, p. 107-131, Berkeley, 1908.

STARR, FREDERICK. *In Indian Mexico.* Chicago: Forbes & Co., 1908. 8°, 437 pp., 97 pp. of illustrations in half-tone. (\$5.00.)

STEELE, ZADOCK. *The Indian captive; or a narrative of the captivity and sufferings of Zadock Steele. Related by himself. To which is prefixed an account of the burning of Royalton.* Springfield, Mass.: The H. R. Hunting Company, 1908. 16°, xiii, 166 p., map.

A reprint of the Montpelier edition of 1818.

[STENNETT, W. H.] *A history of the origin of the place names connected with the Chicago & North Western and Chicago, St Paul, Minneapolis and Omaha Railways.* Compiled by one who for more than 34 years has been an officer in the employ of the system. Chicago: 1908. 8°, 2 p. l., 201 p., map.

Includes Indian place names in Illinois, Iowa, Michigan, Minnesota, Nebraska, North Dakota, South Dakota, Wisconsin, and Wyoming, with much historical information.

THOMSON, J. ARTHUR. *Heredity.* New York: G. P. Putnam's Sons, London: John Murray, 1908. 8°, xvi, 605 p., 49 ill.

WILSON, GILBERT L. *Myths of the Red children.* Illustrated by Frederick N. Wilson. Boston: Ginn & Co., 1907. 16°, ix, 154 p., ill.

A collection of eighteen Indian folktales from various authoritative sources, suitable for children. A supplement contains "Things for Children to Make," and explanatory notes on the tales. The illustrations are good and most of them instructive.

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 directly 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.) Processus parietalis squamæ temporalis. (Z. f. Morph. u. Anthrop., Stuttgart, 1907, x, 485-8.) The peculiarity studied by A. was found in 5 out of 10 European and in 37 out of 70 Japanese skulls, and is common in the anthropoids. The variation in size and form is considerable.

Andree (R.) Ethnologische Betrachtungen über Hockerbestattung. (Korr.-Bl. d. D. Ges. f. Anthr., Brunschwg., 1907, xxxviii, 135-7.) Résumé of a monograph, appearing in the *Archiv für Anthropologie*, and noticed in the *American Anthropologist*, 1908, n. s., x, 145.

Balfour (H.) The friction-drum. (J. R. Anthr. Inst., Lond., 1907, xxxvii, 67-92, 3 pl., 7 fig.) Treats of the origin, nature, and geographical distribution of the "friction drum" (the representative among American children is a tin or pasteboard cylinder with drum-head of parchment, etc., with string and rosined twisting stick), Dutch *rommel pot* (known in Europe early in 17th century), German *Waldteufel*, French *cri de la belle mère*, Italian *pan-bomba*, Spanish *sambomba*, English *hummer*, etc., Venezuelan *furuco*, Marotse *merupa*, Baluba *tambue*, Wanika *muanza*, etc., and related devices. In the New World the "friction drum" seems of foreign origin (Africa; western Europe, France more recently). European forms are not of local origin. The type with a friction-stick probably came into Europe from W. Africa by way of the early Portuguese or Dutch traders; the friction-string type may be of Indian origin (South Indian *tevalaika*), though possibly also African. The rubbing-stick type may likewise be African. All varieties are carefully described and figured. The

variety common in eastern United States a few years ago was similar to fig. 7 in B.'s list.

Balland (A.) L'évolution culinaire. (R. Scientif., Paris, 1908, 5^e s., ix, 65-8.) Notes on food and its preparation, particularly in ancient Greece, Rome, medieval France, etc.

Beddoe (J.) The estimation of skull-capacity by a peripheral method. (Z. f. Ethn., Berlin, 1906, xxxix, 695-701.) Essentially the same article as appeared in *L'Anthropologie* and the *Journal of the Anthropological Institute*, with slight improvements. See *American Anthropologist*, 1905, n. s., vi, 534.

Belck (W.) Die Erfinder der Eisentechnik. (Ibid., 946-8.) Argues that not only the smelting of metallic iron but likewise the production of iron directly from the ore (at least in the time of Pliny) were known to the ancients. See *Bertholet*.

Bertholet (—) Zu Waldemar Belcks Aufsatz über die Erfinder der Eisentechnik, insonderheit auf Grund von Bibeltexten. (Ibid., 945-6.) Critique of Belck's use of Bible texts to support his theory of the invention of the iron smelting by the Philistines. See *Belck*.

Buschan (G.) Linné als Ethnologe. (Globus, Brunschwg., 1907, xc1, 293-7.) Résumés the ethnological data concerning the people of Öland and Gotland (visited in 1741) in Linnæus' diary of his travels published in Swedish *Öländska och Gotländska Resa* (Stockholm, 1745) and German *Reisen durch Öland und Gotland* (Halle, 1764). Notes on agriculture, fishing, dying, plays and games, dances, customs and usages, superstitions, medicine. Observations of a "changing" (probably an idiot) and a male hermaphroditic child were made by Linnæus.

— Bericht über die anthropologische Literatur über Entartung und verwandte Zustände aus den letzten fünf Jahren, 1903-1907. (Z. f. d. Erforschg. u. Behandlg. d. jugendl. Schwachsinn, Jena, 1908, 139-60.) *Résumés* briefly the literature (125 titles) of the anthropology of degeneration, etc. (degenerative stigmata of criminals, genius, etc.; infantilism; mongoloidism; finger-prints; defects of brain; cretinism; microcephaly; abnormal ears; steatopygia; polymastia; vagabondage; prostitution; palmar sulci and folds; abnormalities of palate; orbital peculiarities; cranial capacity; morphology of finger-nails; form of sole of foot; teeth; body- and head-measurements; tattooing; cerebral asymmetry; brain-weight; "degeneration-signs"; mammary anomalies; peculiarities of the hair; dwarfism, etc.). Among the more notable items of this period are: Teixeira Basto's *A tatuagem nos criminosos* (Porto, 1903), G. Buschan's *Gehirn und Kultur* (Wiesbaden, 1906), V. Galippe's *L'hérédité des stigmates de dégénérescence et les familles souveraines* (Paris, 1905), etc.

Courty (G.) Sur les pétroglyphes à travers le monde. (Bull. Soc. d'Anthr. de Paris, 1907, v^e s., VIII, 153-62.) Treats briefly of petroglyphs at the Lac des Merveilles in the Maritime Alps, thought by some to be the work of idle shepherds; at the sources of the Bou-Merzoug in southeastern Constantine (Algeria); in the Canary ids., in Morocco, the Sahara, etc.; in various parts of America and Australia; in Brittany, Seine-et-Oise, etc., in France. C. sees in petroglyphs the origin of many of the Chinese characters, and considers petroglyphs in general "the first manifestations of human thought."

van Ginneken (J.) Untersuchung über die Typologie der Sprachen. Enquête sur la Typologie des langues. (Anthropos, Salzburg, 1907, II, 690-705.) German-French article on the typology of language, "the aim of which is to explain, in a comparative and general manner, the genesis and the development of all the details of each language in phonetics, morphology, vocabulary, syntax, stylistics, by making use of all historical data concerning the peculiarities, the character, etc., of each people." Attempts along this line were made by W. von Humboldt with his *Innerer Sprachform*; Steintal; Byrne in his *General Prin-*

ciples of the Structure of Language (London, 1885), whose work was made use of by von der Gabelentz and Count von der Schulenburg (1895); H. C. C. von der Gabelentz, in his *Sprachwissenschaft, ihre Aufgaben, Methoden und bisherigen Ergebnisse* (Leipzig, 1891); F. N. Finck, in his *Der Sprachbau als Ausdruck deutscher Weltanschauung* (Marburg, 1899) and *Die Klassifikation der Sprachen* (1901). Also Jespersen in his *Growth and Structure of the English Language* (Leipzig, 1905), R. Bergmann in his *Die Sprachliche Anschauung und Ausdrucksweise der Franzosen* (Freiburg i. B., 1905), O. Weise in his *Unter: Muttersprache, ihr Wesen und ihr Wert*, etc. The author appeals for a series of scientific sketches of the characters of peoples, corresponding to the grammars of their language.

Giuffrida-Ruggieri (V.) Il pithecanthropus erectus e l'origine della specie umana. (Rev. di Scienza, Bologna, 1907, II, repr. 9 pp.) Treats of the *Pithecanthropus* of Dubois and its relation to the origin of the human species, the theories of Klaatsch. G.-R. concludes that an ancestral form of man probably existed in the Tertiary period—"a being at the end of the Tertiary, a precursor of man, not yet well differentiated, through showing 'higher' characteristics." The anthropoids are a divergent line, the *Pitheci* another autonomous line, and the *Pithecanthropus* the result of a distinct evolution, begun at a much lower level. The "monophyletic tree" of Haeckel does not exist for the primates. In many things the anthropoids are near man, in others far from him. It has not been proved, e. g., that extremely long arms are at all in the line of man's genealogy. The American monkeys (the *Ateles* especially) have preserved a number of ancient characters common also to man (relation of weight of brain and body, curve of skull, carrying of head, gait, etc.).

Hervé (G.) Montesquieu: l'ethnographie dans "L'Esprit des Loix"; la théorie des climats. (R. Éc. d'Anthr. de Paris, 1907, XVII, 337-353.) Discusses the ethnographic material in Montesquieu's *L'Esprit des Loix* (Paris, 1748) particularly the theory of climate set forth in the second chapter of his fourteenth book—"Combien les hommes sont différents dans les divers climats," a theory whose "physiology is quite naïve and amusing."

Slavery, e. g., is a mere matter of warm climate; liberty belongs only in cold countries.

Hoesch-Ernst (L.) Vorschlag zur besseren Erhaltung der Skelette. (Korr.-Bl. d. D. Ges. f. Anthr., Brunschwg., 1907, XXXVIII, 121-4.) Proposes "ossuaries," in which the bones of the dead (after the flesh has been stripped off, burned, and placed in urns if desired) may be stored, with labels indicating name, etc., to be used, when necessary, by the physician, the anthropologist, etc. This would enable science to take advantage of a vast amount of material now wasted, and contribute much to the study of heredity, pathology, etc.

Holcombe (C.) Oriental ethics compared with Western systems. (Int. J. Ethics, Lond., 1907, XVIII, 168-81.) Treats of Confucius and Lao-tze and their ethics—"the chief secret of the marvelous success, a success that has made the Chinese in some respects the most moral people in the world, is to be found mainly in the methods adopted to inculcate it."

Lapicque (L.) Tableau général des poids somatique et encéphalique dans les espèces animales. (Bull. Soc. d'Anthr. de Paris, 1907, V^e s., VIII, 248-70.) Presents a table, constructed on a logarithmic scale of body and brain weights in the animal series—the abscissa is the logarithm of the body-weight, and the ordinate the logarithm of the brain-weight. In this scheme related species are disposed along parallel lines, each natural group, e. g., *Felidae*, having its *isoneural* line. This corresponds to the algebraic expression of Dubois for the mammals in general.

— Le poids encéphalique en fonction du poids corporel entre individus d'une même espèce. (Ibid., 313-45.) Treats of the law in question with regard to the dog, squirrel, man; cerebral regression in domestic animals (rabbit, hare, ruminants, birds, etc.); sexual differences of brain-weight in man. The body and brain-weights of man and woman stand in the same relation to each other as do two distinct animal species of the same nervous organization. In all species of animals domestication has had the effect of diminishing the relative brain-weight.

Lehmann (J.) Systematik und geographische Verbreitungen der Geflechtsarten, mit einem Anhang: Die hauptsächlichsten Arten von Knoten. (Abh. u. Ber. d. K. Zool. u. Anthr.-Ethin. Mus. zu

Dresden, 1907, XI, Nr. 3, 1-35, 3 pl., 195 fig.) First part treats of the various sorts of weave, their technique, nomenclature, etc., and their geographical distribution. Each variety of weave is indicated by a formula. Half-weaves and over-weaves are considered. Fig. 18, e. g., in Mason's *Aboriginal American Basketry*, corresponding to fig. 69 in Lehmann, is VII b*.

Liebreich (R.) L'asymétrie de la figure et son origine. (C.-R. Acad. d. Sci., Paris, 1908, CXLVI, 593-7, 3 fig.) From an examination of more than 5,400 ancient and modern skulls, including 400 Egyptian mummies and numerous living subjects, L. concludes that asymmetry is not, as Lombroso holds, a stigma, a malformation, a sign of degeneration, but "the normal form of the human face." It originates in the last period of intra-uterine life, from the position of the embryo. Facial asymmetry is "a consequence, a necessary accompaniment of the vertical posture of man, and is thus one of the distinct marks of the species."

Marangoni (M. E.) Ricerche sul perone. (A. p. l'Antrop., Firenze, 1907, XXXVI, 305-20, 7 fig.) Gives results (details of measurements, etc.) of examination of the fibula in 112 long-bones of both sexes and numerous races—64 Italians, 23 American Indians—with description and figures of transverse section. The greatest development of the fibula in the animal series occurs in man, due to the presence of the very strong muscles necessary to maintain the erect position. The fibula is not curved or in correspondence with the tibia; when curvature in the fibula occurs it tends rather to be antagonistic. Among the bones studied were those of three Tuscan giants.

Martin (R.) System der (physischen) Anthropologie und anthropologische Bibliographie. (Korr.-Bl. d. D. Ges. f. Anthr., Brunschwg., 1907, XXXVIII, 105-19.) Discusses various schemes of classification of anthropological science, particularly those of Broca, Topinard, E. Schmidt, and outlines his own classification, with library rubrics after the Dewey system. — I. General (physical) anthropology; II. Special or systematic (physical) anthropology, including A, Somatology; B, Morphology; C, Physiology; D, Pathology. III, Anthropogeography.

Meinhof (C.) Warum studiert man primitive Sprachen? (Anthropos, Salzburg, 1907, II, 755-60.) Argues for the study

of primitive languages, because they precede culture-languages as dialects do written language, and because their phonetics and morphology represent phenomena uncontaminated by the "mistakes of the learned" concerning the nature of human speech, etc. The knowledge of the languages of primitive peoples is also often of great practical use.

Mollison (T.) *Einige neue Instrumente zur Messung von Winkeln und Krümmungen.* (Z. f. Morph. u. Anthropol., Stuttgart, 1907, x, 489-99.) Describes new instruments for measuring angles and curves—goniometer, horizontal-holder, cyclometer, etc.

Mühsam (—) *Die biologische Differenzierung von Affenarten und menschlichen Rassen durch spezifische Blutreaktion.* (Z. f. Ethn., Berlin, 1907, xxxix, 706-7.) Résumés briefly the investigations of Carl Bruck (cf. *Berl. klin. Wochenschr.*, Nr. 26) on specific blood-reaction as a biological differentiation of anthropoid and human races.

Myres (J. L.) *A bureau of biometry.* (Oxf. and Cambr. Rev., Lond., 1907, I, no. 1, 131-44.) Argues for the registry of the ancestry and descent of students, anthropometric data, psychic qualities, achievements at the university and in after-life, etc. Such a bureau on a voluntary basis is urged as of great evolutionary value.

Neuhaus (R.) *Ueber neuere photographische Hilfsmittel für den Forschungsreisenden.* (Z. f. Ethn., Berlin, 1907, xxxix, 966-72.) Treats of the photographic equipment of the modern investigator. Both a stand and a hand camera are needed. Plates are preferred over films. Flashlights and kinematographs are advisable.

Oppenheim (Frl. St.) *Die Suturen des menschlichen Schädels in ihrer anthropologischen Bedeutung.* (Korr.-Bl. d. D. Ges. f. Anthr., Brnschw., 1907, xxxviii, 128-35, 9 fg.) Résumés results of examination, by means of a suture-scheme, of 460 skulls in the museums of Zürich and Paris (Swiss, Papuans, New Caledonians, Maori, deformed Peruvians, Berbers, Burmese, Battak, Chinese, children's skulls of various races, pathological, i. e. microcephalic and hydrocephalic skulls). The Swiss and Berbers have the most complicated sutures, the Chinese the simplest. The simpler coronal suture is generally typical for dolichocephalic skulls, as is the more

complicated for brachycephalic. Microcephalic and hydrocephalic skulls have very complicated sutures. Miss O. divides each of the three sutures, coronal, sagittal, and lambdoid, into three sections; she also makes a "suture index."

Regnault (F.) *A propos de la morphogénie osseuse.* (B. Soc. d'Anthr. de Paris, 1907, v^e s., viii, 304-5.) Reply to critique of M. Papillault. The mechanical theory is not "a mere valueless hypothesis."

Rutot (A.) *Un grave problème. Une industrie humaine datant de l'époque oligocène. Comparaison des outils avec ceux des Tasmaniens actuels.* (Bull. Soc. Belge de Géol., etc., Bruxelles, 1907, extr., pp. 1-46, 64 fg.) Treats of the eoliths discovered by M. de Munck in a sand-pit on the main road from Tilff to Boncelles, and compares them with flints of the modern Tasmanians (figures of both are given), in the light of recent investigations of Dr. Kilaatsch. The Tasmanian flints are purely eolithic; real instruments, i. e. retouched pieces, are rare; "stations" are on streams and near deposits of suitable material; the great number of flint implements is accounted for by their being soon spoiled and often used but for a brief time; the situation of the Tasmanian shell-heaps indicated the ancient residence of man on the island. Thus the eoliths, the conditions of their use, and the culture people who employed them are practically identical—"a very primitive people with an unchanging eolithic industry."

Sageret (J.) *Les nombres et la cosmologie.* (R. Scientif., Paris, 1908, 5^e s., ix, 225-32.) Treats of number-lor: in ancient India, China, Asia Minor, Greece (Pythagorean school), etc.

Schlaginhaufen (O.) *Die Körpermasse und der äussere Habitus eines jungen weiblichen Schimpansen.* (Abh. u. Ber. d. Kgl. Zool. u. Anthropol.-Ethnogr. Mus. zu Dresden, 1907, xi, Nr. 4, 1-18, 1 pl., 13 fg.) Describes, with measurements, stature, bodily proportions, color, etc., of skin, form of ear, hair, nails, etc., of a young female chimpanzee (ca. 4 yrs.) from the Kongo, in comparison with other chimpanzees, etc., and with man. The height-finger-reach index, 138.3, is far beyond anything human (the height is 860 mm. as compared with 960 mm. for a 4-year-old human being; inter-membral index, 110.5 and 75.3). The palmar and plantar grooves and fur-

rows, etc., are interesting, particularly those on the dorsal side of the fingers. The curve of the nails of the hand is greatest on the fourth finger (as in man); for the foot, on the fifth toe.

Schmidt (W.) *Die Sprachlaute und ihre Darstellung in einem allgemeinen linguistischen Alphabet.* Les sons du langage et leur représentation dans un alphabet linguistique général. (*Anthropos*, Salzburg, 1907, II, 282-329, 508-87, 821-97, 1058-1105, tables and charts.) This monograph on a universal phonetic alphabet consists of a sketch of the history of phonetics (early Greeks, Latins, Hindus, humanists; Spain and Italy, France, England, Denmark) and modern (first French period; first German period, England, Scandinavia, philological tendencies and schools, second period in France, etc., experimental phonetics as the phonetics of the future), a historical-critical account of the various linguistic alphabets (those employing newly-invented signs, those employing the different forms and positions of the Latin letters, intermediary systems, systems with only one form of Latin letters), system of sound and a phonetic alphabet and its necessary characters—a new acoustic articulatory system of vowels, consonants, etc., practical applications to various languages with phonetic texts (German, English, French, Italian, Spanish), phonetic systems of Greek, Sanskrit, Latin, Chinese, Annamese, Khmer, and Mon, Siamese, Malayo-Polynesian, Indonesian, Melanesian, Bantu, Negro languages of Upper Guinea, American languages. The author, who is editor of *Anthropos*, requests the adoption of the new phonetic alphabet proposed in this monograph in the articles of contributors, etc.

Schwalbe (G.) *Aufgaben der Sozialanthropologie.* (Korr.-Bl. d. D. Ges. f. Anthr., Brnschw., 1907, XXXVIII, 65-68.) Outlines the scope of "social anthropology," with its branches: criminal anthropology, sociology (social science), etc.

Spitzka (E. A.) A study of the brains of six eminent scientists and scholars belonging to the American Anthropometric Society, together with a description of the skull of Professor E. D. Cope. (*Trans. Amer. Philos. Soc., Phila.*, 1907, N. S. XXI, 175-308, 30 pl., 16 fg.) Besides a résumé of what is known of the brains of 130 notable men and 4 women of various nationalities (also list of cranial

capacities of 64 eminent men) and a discussion of the comparative aspects of the general subject ("the brain of a first-class genius like Friedrich Gauss is as far removed from that of the savage Bushman as that of the latter is removed from the brain of the nearest related ape"), Dr S. describes in detail with numerous figures, the brains of Dr Joseph Leidy (1823-91) eminent in all branches of biology, and his brother, Dr Philip Leidy (1838-91), eminent physician and surgeon; Dr A. J. Parker (1855-92), comparative anatomist of note; Dr Harrison Allen (1841-98), eminent zoologist and comparative anatomist; Dr E. D. Cope (1840-97), famous paleontologist and philosophic anatomist; Dr William Pepper (d. 1898), eminent clinician. Professor Cope's skull is mesocephalic (index 77.6), with proportionately large cranium as compared with face (cf. Kant's skull). The brains of the two Leidys do not resemble each other so markedly as do the brains of the three Van Wormer brothers (criminals), and there are certain notable differences. The heaviest brain of the six was that of Dr Pepper (1593 gr.), who was a man of affairs as well as a physician, the smallest that of Dr P. Leidy (1415 gr.). The brains of these notable men show larger callosa (that of J. Leidy "exceeds in cross-section area that of any other in this series or recorded in literature"). Very significant also is the "cerebro-cerebellar ratio." J. Leidy's keen sense of observation and power of visualizing, memorizing, etc., and Cope's power of abstract generalization, are reflected in the organization of their brains. According to Dr S. the data abundantly prove the superior character of the brains of great men.

Stieda (L.) *Ueber die Bedeutung der Hirnwindungen.* (Korr.-Bl. d. D. Ges. f. Anthr., Brnschw., 1907, XXXVIII, 137-8.) L. argues on the basis of extended studies that shape, form, and appearance of cerebral convolutions are of no significance with respect to intelligence (the sheep's brain is rich and the mouse's poor in convolutions; the brain of Dr. G. Sauerwein, a celebrated linguist, who died in 1904 (said to have been well acquainted with 54 languages), examined by S., showed no unusual development of the convolutions. S. believes that the gray cortex alone, not the form and fashion of the convolutions, is significant for intelligence.

Virchow (H.) Ueber den Stand der Rudolf Virchow-Stiftung für das Jahr 1907. (Z. f. Ethn., Berlin, 1907, xxxix, 978-94, fig.) Résumés the year's investigations at the Einhorn cave and at the prehistoric burial place of Abusir el Meleq. Gives also list of grants for anthropological researches (Frobenius, Wieggers, Götz, Oesten, von Laschan, Weissenberg, Gaupp, Stumpf, Lehmann-Haupt), a total of 15,780 marks.

— Ein menschliches Gebiss mit ungewöhnlich langen Zahnwurzeln. (Ibid., xxxix, 747-9, 2 fig.) Brief account, with measurements of human teeth with unusually long roots.

— Zwei Diapositive von hohlen Eckzähnen von Anthropoiden. (Ibid., 749-52, 2 fig.) Records the occurrence in the upper jaw of an orang skull in the zoological collection of the Berlin Natural History Museum, of a hollow left eye-tooth, and the same also in the lower jaw of a chimpanzee skull. This argues against the theory that all hollow teeth of animals (e. g. cave-bear) found in prehistoric stations, etc., reveal human handiwork.

EUROPE

Andree (R.) Die Nephritindustrie in Oberstein-Idar. (Z. f. Ethn., Berlin, 1907, xxxix, 943-5.) Treats of the production from New Zealand nephrite, etc., of Maori weapons and ornaments, *tiki*, *mere*, etc., at Oberstein and Idar, where they are openly sold as made after genuine models. Similar objects from Asiatic nephrite are made for the Chinese market in Idar.

Atgier (—) Crâne néolithique trouvé à l'Île de Ré. (B. Soc. d'Anthr. de Paris, 1907, 7^e s., viii, 305-7.) Describes, with measurements, a sub-dolichocephalic (index 76.47) skull found in 1853 in the Peu-Pierroux tumulus, belonging to the close of the neolithic period (Robenhausian). Dr A. considers that "this skull is probably that of a woman, a famous druidess, doubtless, of the dolmen epoch."

— Crâne ultra-brachycéphale provenant du tumulus du Peu-Pierroux à l'Île de Ré. (Ibid., 307-9.) Describes, with measurements, an ultra-brachyccephalic male skull (index 90.80) from the Peu-Pierroux neolithic tumulus, and compares it with a Lapp cranium. Dr A. thinks that the sub-dolichocephalic female skull represents a type allied to the old Iberians (brunette long-heads), while the male

ultra-brachyccephalic skull belongs with the conquerors who appeared at the end of the neolithic period (brunette broad-heads) and were later known as Celts. Out of this mixture grew the protohistoric Celtiberians.

Baudouin (M.) Le Congrès Préhistorique de France. Autun, août 1908. (R. Scientif., Paris, 1907, 5^e s., ix, 197-205, 10 fig.) Treats briefly of program (100 papers were offered), and excursions (the last 4 days were devoted to visiting Mont-Beuvray, — Bibracte of Edui, — the dolmens of Nolay and the typical neolithic station of Chassey, the famous paleolithic site of Solutré, and the oppidum of Alesia), etc.

Berrueta (J. D.) Las Jurdes. (Anthropos, Salzburg, 1907, ii, 492-3, 2 pl.) Notes on the *Jurdes*, part of the province of Cáceres, long almost a land of fable, and its inhabitants, "cut off from the civilized world," a primitive Spanish folk, whose existence in the 20th century is a humanitarian and sociological problem. They have been studied by R. Martín Santivañez in his *Un mundo desconocido en la provincia de Extramadura*, and by Vicente Barrantes in his *Las Jurdes y sus leyendas*.

Beyerthal (—) Weitere Untersuchungen über die Beziehungen zwischen Schädelumfang und Intelligenz im schulpflichtigen Alter. (Z. f. experim. Pädag., Lpzg., 1907, v, 223-30.) Continues studies of the relation between head-circumference and intelligence. In the case of children of 9½-10½ years, success in school demanded for boys a head-girth of 52 cm., and for girls one of 51 cm., with few exceptions. His studies of 2000 school-children between the ages of 6 and 10, also lead him to believe that six-year-old girls with a head-girth below 49 cm. and boys with one below 50 cm., rarely do very well at school.

Bezzenberger (A.) Vorgeschichtliche Bauwerke der Balearen. (Z. f. Ethn., Berlin, 1907, xxxix, 567-634, 73 fig.) Interesting account, with plans, measurements, etc., of the author's investigations of the *talayots*, etc., of the Balearic isles. Those at Son Heruad, S'Agua, Canova de Morell, Trebucó (also stone-table), Curnia, Turo, Telati de Dalt (also stone-table and cave), Casana (and stone-table of Torellasa), Hostal near Ciudadela, the Nau d'Es Tudons, the Calas Covas "grottoes," etc., are described. B. regards these prehistoric megalithic towers

(cf. the Sardinian *nuraghe*) as forts or places of refuge. That the *nuraghe* and *talayots* have had an independent origin on a similar basis is very likely; if one has suggested the other, the priority of the *talayots* is quite as probable as vice versa. Since the *seis* belong to the stone age, it is quite possible that some *talayots* are at least enolithic. The complete investigation of a few *talayots* is very desirable.

Busse (H.) Tongefässe von Woltersdorf im Kreise Nieder-Barnim. (Ibid., 703-704.) Brief account of finds of several hundred clay vessels, many bronze objects, etc., one notably large urn in particular. The author excavated 95 graves in this urn-burial cemetery of the later bronze age. His results will be published in the near future.

Capitan (L.) et Dumas (U.) Les constructions autour des dolmens. (Rev. Éc. d'Anthr. de Paris, 1907, xvii, 330-5, 2 fig.) Brief description of low "walls" of dry stones around dolmens in the department of Gard, e. g., at Tharaut, Congoussac, Carquignau, Comoulet, Bouissas, Chêne, etc. The relation of these enclosures to the dolmen is unknown, whether funerary, like the dolmens, house or cattle-enclosures, as has been suggested.

Courgey (—) Agglomérations nouvelles autour de Paris. Leur origine. Leurs conditions hygiéniques. (B. Soc. d'Anthr. de Paris, 1907, v^e s., viii, 364-71.) Treats of the new groups of people growing up around the city of Paris. The inhabitants of the "military zone" in this class are "at once a curiosity and a shame of Paris." Summerers in the suburbs become winterers in the city later on. Near the Choisy gate are two separate and independent groups, the *camp italien* and the *camp espagnol*.

Favraud (A.) Station Aurignacienne au Port-Neuf, commune de la Couronne, Charente. (R. Éc. d'Anthr. de Paris, 1907, xvii, 418-28, 7 fig.) Gives results of investigations made in 1904—the station was discovered by F. in 1889. Stone implements are described and figured; a few objects of bone were discovered, including a striated and incised lion's tooth. This station differs much from the neighboring upper Solutrean shelter of Combe-a-Roland, there being hardly anything common in their human industry; the Port-Neuf station is pre-

Solutrean, much earlier and represents a stage distinct from both Magdalenian and Solutrean.

Favreau (P.) Die Ausgrabungen in der Einhornhöhle bei Scharzfeld. (Z. f. Ethn., Berlin, 1907, xxxix, 524-50, 8 fig.) Gives results of excavations in 1905-06 in the "Einhornhöhle" (known since the end of the 17th century) near Scharzfeld in the Harz. Large numbers of fossil bones of bears (*U. spelans* chiefly), some of which may have been used by man. At pages 540-3 Hr. Windhausen treats of the geological conditions of the finds—he assigns the cave to the Diluvium. An extended discussion by Hrn. Wiegers, Krause, Virchow, and Kossinna followed. The earlier Sturckmann finds of potsherds, etc., have been called in question.

Fischer (A. K.) Zur Frage des Aufenthaltes der Hunnen und Sarazenen in den Alpen. (Mitt. d. K.-K. Geogr. Ges. in Wien, 1908, xli, 59-60.) Critique of article by B. Reber in an earlier issue. F. disclaims previous knowledge of R's book, *Die Hunnen im Schweizerischen Eufuchale* (Zürich, 1896).

Frédéric (J.) Beiträge zur physischen Anthropologie der Elsass-Lothringer. (Korr.-Bl. d. D. Ges. f. Anthr., Brnschw., 1907, xxxviii, 76-9, 3 fig.) Treats of the cephalic index of 2145 (men 1176, women 969) natives of Alsace-Lorraine, measured by the author. The index averages 82.86 for men, 82.43 for women, av. for both sexes 82.67—of all the indices 51.8 per cent. were from 80 to 84. The average index for natives of Strassburg was 81.94; for natives of other towns, 81.82; for country subjects, 83.19; for Lower Alsace, 83.01; Upper Alsace, 83.90; Lorraine, 84.04. In Lorraine the percentage of blonds is larger than in the two other sections, and the percentage of brunets the smallest; in Lorraine the percentage of short stature is relatively small, of tall relatively large. Comparison with skulls of earlier periods indicates that the present native population of Alsace-Lorraine have a higher percentage of mesocephaly and a lower percentage of high brachycephaly than the people of this region in the Middle Ages, who were nearer to the Alpine primitive population.

Fritze (—) Ueber einige weitere Funde aus der Einhornhöhle. (Z. f. Ethn., Berlin, 1907, xxxix, 957-8.) Notes

- recent discoveries, at the Einhorn cave, of potsherds and bones of cave-bears, lions, dogs, stags, bison, horses, sheep, etc. One fragment of the lower jaw of a cave-bear has a wound of possibly human origin. See *Favrean*; *Hahne*.
- Girod (P.)** Note sur le Solutréo-Magdalénien dans les vallées de la Vézère et de la Corrèze. (B. Soc. d'Anthr. de Paris, 1907, v^e s., VIII, 297-304, 4 fig.) Treats of the succession of strata of the Solutrean-Magdalenian epoch at Laugerie Haute, Cro-Magnon, etc. Here the Aurignacian reposes on the Solutrean and serves as a base to the Magdalenian. The Solutrean is essentially lithic; reindeer horn and bone occur in the Aurignacian, to develop more fully with the dawn of the Magdalenian. The chronology indicated characterized the Vézère valley, etc.
- Gnirs (A.)** Beobachtungen über den Fortschritt einer säkularen Niveauschwankung des Meeres während der letzten zwei Jahrtausende. (Mitt. d. K.-K. Ges. in Wien, 1908, LI, 1-56.) Treats of secular changes of sea-level during the last 2000 years in Istria, Dalmatia, northern Adria, west coast of Apennine peninsula, Sicily, Egean sea, Crete, Sea of Marmora, Gulf of Corinth and Ionian sea, coast of Levant, Asia Minor and Syria, North African coast, coast of western Europe, etc. Over all this area changes in sea-level are noted. Contains useful information concerning ruins, harbors, monuments, etc., now or formerly at the sea-shore.
- Gorjanovic-Kramberger (K.)** Die Kronen und Wurzeln der Molaren des Homo primigenius und ihre genetische Bedeutung. (Korr.-Bl. d. D. Ges. f. Anthr., Brnschw., 1907, XXXVIII, 138-41.) Holds that the manifold agreement of the teeth of the man of Krapina (primitive characters are also retained) with those of the modern European, make it certain that "the *Homo primigenius* was really the direct ancestor of recent man, of the great race that now inhabits Eurasia, America, and North Africa." A fuller article appears in the *Anatomischer Anzeiger*, Jena, 1907, XXXI, 97-134.
- Götze (A.)** Konservierung prähistorischer Steinmauern. (Ibid., 159-61.) Brief account of the preservative and restorative work at the "Steinsburg," at Rönihild, with suggestions for the preservation of other stone walls, fortifications, etc., of prehistoric times.
- Gutmann (K.)** Ueber den Stand der Altertumsforschung in Oberelssass. (Ibid., 71-5.) Résumés the results of archeological investigations in upper Alsace (Egisheim skull, 1865; paleolithic station near Egisheim, 1887; cave-dwellings of Oberlang, etc., neolithic graves near Egisheim, 1889-93; skeletons of Illberg, 1904; finds of bronze age, particularly 1905-07 and in the Sundgau hill-country; fort or refuge of Köstlach; La Tène period, represented by tumuli, etc., in the plains; Roman period numerous represented architecturally, etc. (several castella, streets, etc.), period of the early Middle Ages, or "Alemannic epoch." No Alemannic cemetery has yet been systematically investigated and scientifically described. Many lacunae exist in our knowledge of Gallo-Roman relations, and particularly also with respect to the Hallstatt culture and its origin.
- Haberlin (-.)** Flechten und Weben auf Föhr und den Halligen. (Globus, Brnschw., 1908, XCI, 330-2, 4 fig.) Brief account of the methods of weaving still in use on the island of Föhr, and the "halligs" of the Frisian coast. The "weaving-board" was once widespread on the islands and the adjacent continent.
- Hahne (H.)** Ueber die im hannoverschen Provinzialmuseum befindlichen Ältern Einhornhöhlenfunde. (Z. f. Ethn., Berlin, 1907, XXXIX, 954-7.) Notes on the earlier material from the Einhorn cave at Scharzfeld, now in the Provincial Museum of Hanover, amounting to several thousand specimens. The remains (stone, bone, bronze, iron, pottery, etc.) indicate that the cave has been inhabited by man from the stone age up to medieval time. No clear evidence of diluvial man has yet been found in this cave. See *Fritze*.
- Heiserli (J.)** Neue Forschungen in Pfahlbauten. (Korr.-Bl. d. D. Ges. f. Anthr.-Brnschw., 1907, XXXVIII, 119-20.) Notes on recent investigations of Swiss lake-dwellings, Meier's excavations in the Wauweiler Lake, 1903-06, in particular. The Schötz lake-dwellings belonged to the middle neolithic age and later.
- Die bronzzeitliche Quellfassung von St. Moritz. (Ibid., 120-1, 2 fig.) Treats of the St Maurice spring in the Engadin and the recent discoveries of evidence of its use (wooden pipes, two bronze swords, a dagger, a needle) in the bronze age at least 3,000 years ago. The wooden pipes, etc., and the bronze votive gifts are now in the Engadin Museum at St Moritz.

Herbert (A. S.) The fairy mythology of Europe in its relation to early history. (Nineteenth Cent., Lond., 1908, 220-31.) Treats of "the queer little Finnish or fairy population of prehistoric Europe," the "Kynesians," who are "older than any Aryan invasion," etc. In this *outré* paper, the author etymologizes at will with the original roots 'pit' and 'gen' or 'gan,' to produce Gaelic *Pict*, English *Pixy*, Latin *Pan*, with which belong also *Finn*, *Fannui*, *genius*, and even modern French *fée*. Also he holds that the Greek 'pigmaios' and the Gothic 'pitguma,' Germanized into 'gnome,' mean simply a yellow man. The real prehistoric pigmies of Europe, who have long since died out, live thus as fairies in the minds of their Aryan supplanteders. This is Macritchie's theory run mad.

Honrik (E.) und Schmidt (H.) Die prähistorische Station von Sarata-Monteorü, Bezirk Buzeu. (Z. f. Ethn., Berlin, 1907, XXXIX, 999-1003, 9 fig.) Gives account of remains discovered (house-sites, thin culture-strata with ash-layers containing bones, pottery fragments, etc.; four graves with skeletons, pottery, objects of stone, bone, etc.) at Sarata-Monteorü, southwest of Buzeu in Roumania. A bronze armband, a copper ax, an ear-ornament of copper wire, many and varied pottery fragments, heaps of animal bones (horse, cattle, bear, wolf, fox, pig, sheep-stag rare, a few bird bones). The "ear-handle" pottery finds analogues in parts of Bohemia (terra mare culture), etc.; some of the pottery also belongs with that of the Macedonian tumuli. The station probably belongs to some part of the bronze age.

Jeannel (R.) Sur la découverte, dans la grotte du Portel, de peintures préhistoriques représentant l'homme et des animaux. (C.-R. Acad. d. Sci., Paris, 1908, CXLVI, 654-6.) Brief account of paleolithic paintings of animals (bison, horses, reindeer, etc., mostly horses) and of two men on foot (one figure is very dolichocephalic, with retreating forehead—head is in profile, body and limbs *en face*; the other has a simian attitude), in the cavern of Portel (also called Crampagna), commune of Loubens, canton of Varilbes, Ariège. All the paintings except one are monochrome. This is the first discovery of *painted* human figures in paleolithic caves. The animal

pictures do not show the artistic perfection of Altamira or Niaux. Few signs occur among the 40 paintings. This important discovery was made March 9, 1908.

Jentsch (H.) Die Bestimmung der Tonschale mit Leistengestell. (Z. f. Ethn., Berlin, 1907, XXXIX, 953-4.) According to J., the Cottbus clay vessel with support may have served for melting fat, heating food (for children, e. g.), and perhaps also for preparing colors.

Kassel (—) Ueber Elsassische Trachten. (Korr.-Bl. d. D. Ges. f. Anthr., Brnschw., 1907, XXXVIII, 152-9.) Sketches the history of Alsatian dress, costume, etc. Peasant costume of 16th, 17th, 18th, and 19th centuries all different; temporal and local variations; men's and women's dress and their peculiarities.

Labrie (—) Le dolmen ou allée couverte de Curton à Jugazan. (Bull. Soc. Archéol. de Bordeaux, 1906, XXVIII, 41-50, 2 pl., fig.) Describes the dolmen of Curton discovered in March 1904, the remains found (bones representing 8 adults, 3 pierced shells, bone ornaments, etc.). The remarkable pickax-shaped bone ornament is like others found in the dolmens of Peyrelebad and Fargues. An intrusive occupancy from the Gallo-Roman period (fragments of pottery, etc.) on as a shelter is indicated.

Remarques sur les monuments mégalithiques de l'Entre-deux-mers. *Ibid.*, 50-65, 2 pl., map.) Treats of the dolmens or "allées couvertes" of Bignon, Peyrelebad, Trois Pierres, tumulus, caverns (Fontarnaud, reindeer-age habitation, then neolithic burial-place); menhirs (the *grandes bornes* of Lugasson, etc.), and other remains.

L'abri préhistorique de Baring à Daignac. (*Ibid.*, 65-6, 1 pl.) Brief notes on a shelter of the Magdalenian epoch (above this stratum are fragments of neolithic pottery, etc.). This may have been an important station, to judge from the indications of human habitation, implements, bones, etc.

Laville (A.) Au sujet d'un instrument recueilli dans une carrière à Villeneuve-Saint-Georges. (Bull. Soc. d'Anthr. de Paris, 1907, v^e s., VIII, 205-6.) Brief description of a whetstone or skin-smoother said to have been found in a quarry at Villeneuve-St-Georges, and resembling a similar instrument from Vignette. The epoch of both finds

- would be between the close of the neolithic and the beginning of the bronze age.
- Liedloff (Dr) and Schmidt (H.)** Eine steinzeitliche Niederlassung bei Grimma. (Z. f. Ethn., Berlin, 1907, xxxix, 997-9, 1 fig.) Describes five types of ornamented and unornamented pottery from the later neolithic station near Draschwitz in Saxony, where remains of at least 24 dwellings, many flint implements, mortars, whorls, potsherds, etc., were found. This was a considerable village of "ribbon pottery" people.
- Lissauer (A.)** Vierter Bericht über die Tätigkeit der von der Deutschen Anthropologischen Gesellschaft gewählten Kommission für prähistorische Typenkarten. Die Typenkarte der ältesten Gewandnadeln. (Ibid., 785-831, 58 fig., map.) Describes, with map of distribution, the oldest clothes-needles types in prehistoric times in the region of the German Empire. Needles of the early bronze period (3 types and 5 other rarer forms), needles of the older bronze period (3 types). In the needles of the early bronze period the "eye" is at the head; in those of the older, on the neck. The needle with holed head (five variants) and the "ösnennadel" originated in Bohemia, spreading thence south, north, and west. The East German "ösnennadel" belongs to the oldest bronze period. The two-part northern fibula is an independent invention.
- Manouvrier (L.)** Les crânes et ossements du dolmen de Menouville, Seine-et-Oise. (Bull. Soc. d'Anthr. de Paris, 1907, v^e s., VIII, 168-74, fig.) Description and measurements of 20 skulls, long-bones, etc. (10 m., 10 f.), from the neolithic dolmen of Menouville. The indices range from 67.5 to 83; some are finely developed, others mediocre. The average stature (calculated) is for men 1594 mm., women 1502 mm.
- Möller (A.)** Ueber neue Funde in den Ehringsdorfer Kalkbrüchen. (Z. f. Ethn., Berlin, 1907, xxxix, 964-6, fig.) Brief account of the discovery in the limestone quarries at Ehringsdorf of four strata of charcoal and ashes, with flints, bones of bears, etc.
- de Morgan (J.)** Observations sur les origines des arts céramiques dans le bassin méditerranéen. (R. Éc. d'Anthr. de Paris, 1907, xvii, 401-17, 36 fig.) Discusses briefly the ancient pottery (technique, ornament, painting, enameled) of Egypt, Elam, Syria, etc. The author seeks to prove his theory of the Asiatic origin of the ceramic arts of the Mediterranean region. Elamite painted pottery dates back to beyond the 40th century B. C., while the corresponding pre-Hellenic or Greece specimens belong only to the 20th century B. C. (this excludes Susian contact). Primordial related centers of painted pottery existed in Egypt and Elam; a secondary one in Canaan. In the valley of the Nile the painting of pottery was anciently replaced in Egypt by enameled, an art appearing much later in Elam, etc. M. de M. believes that "in the greater part of human activities the Orient and the Mediterranean were intimately related."
- de Mortillet (A.)** Étude sur quelques dolmens de l'Hérault. (Ibid., 301-29, 17 fig.) Describes briefly (with various particulars in some cases) numerous dolmens at Soumont (the Belvedere de Grammont group), La Vacquerie (Mas de Bedos, Férussac group, Saint-Martin), Saint-Maurice (La Prunarde group), Minerve (Grand Causse group, Bois-Bas group), etc. All the dolmens seem to have been buried originally, either built below the level of the ground or covered by a tumulus of earth or stones. There are no real "dolmens on tumuli."
- Nippgen (M.)** Origine et époque des emprunts d'anciens mots germaniques par les langues finnoises baltes. (Bull. Soc. d'Anthr. de Paris, 1907, v^e s., VIII, 179-203.) Treats of the phonetic and morphologic character of the Teutonic loan-words in the Finnish languages of the Baltic group, the time of borrowing, etc. Based on E. N. Setälä's article in the *Journal de la Société finno-ougrienne* for 1906. Very many of these loan-words belong to a stage of Teutonic older than Gothic. The Scandinavian-Finnish contact is later (the advent of the Finns in Finland dates from the first centuries of our era and not later than the fourth).
- Olshausen (O.)** Beitrag zur Frage des Auftretens metallischen Eisens in vor-mykkenischer Zeit in Kleinasien. (Z. f. Ethn., Berlin, 1907, xxxix, 691-5.) Discusses the two finds of alleged metallic iron of pre-Mycenean age in Asia Minor (Troy; mound at Bos-Öyük in northern Phrygia, also at Pebl) cited by Götze, but considers the cases not proved.
- Paravicini (G.)** Di un'interessante microcéfala littelliana. (A. p. l'Antrop.,

- Firenze, 1907, XXXVI, 113-289, pl.) Detailed anthropometric (measurements at 14 and 34 years compared), anthropological, physiological, psychological study of Luigina L., a microcephalic woman (hereditary and family taint; injury to mother in pregnancy), 34 years old, stature 1337 mm., cephalic index 78.91, with many peculiarities, defects, "statisms," etc. Bibliography of 249 titles.
- Pittard (E.)** Nouveaux instruments en os provenant d'une station moustérienne Aux Rebières (Ourbrières), Dordogne. (R. de l'Éc. d'Anthr. de Paris, 1907, XVII, 429-33, 3 fig.) Describes additional bone implements from Aux Rebières, proving the existence in a Mousterian station of diaphyses used as instruments, and of worked bones.
- Schell (O.)** Abwehrzauber am bergischen Hanse. (Globus, Brunschwig, 1907, XCI, 335-8, 363-6, 3 fig.) Treats of warding-off charms in connection with the house in Berg. Construction (traces of sacrificial customs at foundation, "building sermon," "May-beech," carrying in Bible and salt before using house), objects and symbols effective to ward off evil (whole animals or parts of them still nailed to the door, set in gable, etc., e. g., owl, horse-skull, horns, St Andrew's cross, full, half, and quarter figures of the sun), house-inscriptions, etc.
- Schenck (A.)** Les populations de la Suisse depuis la période paléolithique jusqu'à l'époque gallo-helvétique. (Bull. Soc. d'Anthr. de Paris, 1907, IV^e s., VIII, 212-28.) Treats of the succession of races in Switzerland from the paleolithic to the Gallo-Helvetian period, classification of the various periods—cave dwellers of Magdalenian type, paleolithic man (Santis de l'Ours, Rhone basin, Veyrier, Villeneuve, Schaafhausen, Thayngen, Freudental, Schweizersbild, Schüsensried, etc.) mesolithic (Schweizersbild, Bellerive, Moulin de Liesberg), neolithic, bronze, iron, and certain "transition epochs." The human remains from Chamblades, etc., and from the lake dwellings are specially considered. S. thinks that the peoples of Switzerland to-day are "a mixed race, belonging in great part, however, to the round-headed ethnic element of Ural-Altaic origin, which, coming from the east, occupied the region of the lower Danube, southern Germany, parts of Italy, France, and Great Britain." From the dawn of neolithic times this race has been in contact (few in numbers at first) with the more or less dense dolichocephalic peoples of the country, belonging probably to the old quaternary race of Laugerie-Chancelade, or to its descendant, the race of Baumes-Chaudes-Cromagnon. In the second half of the neolithic age an invasion of northern dolichocephals took place; and toward the end of the bronze age new, tall, fair, dolichocephalic peoples (Hallstatt and La Tène) appeared from the east and north. In Switzerland can still be found individuals representing man of the lake-dwellings of the stone and bronze ages, Helvetians, Burgundians, Alemanni, and even Italian Romans. But, in general, "in spite of diversity of language, the people of Switzerland are, for the greater part, of Celtic or Ligurian race."
- Schweinfurth (G.)** Ueber das Höhlen-Paläolithikum von Sizilien und Süd-tunesien. (Z. f. Ethn., Berlin, 1907, XXXIX, 832-915, 2 pl., 18 fig.) Treats of the paleolithic remains in the caves of Sicily (particularly Grotta del Castello, Grotta di Nuova at Termini-Imerese, Giuseppe Natale),—18 types of stone implements, etc., are figured and described, besides numerous stones in "animal form," etc.; and southern Tunis (particularly caves near Gafsa)—16 types of flint implements are figured and described. Correspondences between the Sicilian and Tunisian forms are noted; indeed the Gafsa caves produced no forms that do not find their analogues in Sicily. No distinctly neolithic implements were met with at Gafsa. It is difficult to decide whether the Termini-Imerese caves represent the pre- or the post-Solutrean.
- Ueber A. Rutot's Entdeckung von Eolithen im belgischen Oligocän. (Ibid., 958-9.) Discusses Rutot's discovery of eoliths in the Belgian Oligocene near Boncelles, south of Liège, which S. accepts as genuine, believing that man was present in this region "before the Oligocene sea extended over it."
- Sittoni (G.)** Le Cinque Terre. I. Biassa, Golfo della Spezia. (A. p. l'Antrop., Firenze, 1907, XXXVII, 295-304.) Brief account of the country and people of Biassa on the Gulf of Spezia. In the complex population appears everywhere the prevailing Arab-Kabyle blood. Two cranial types are noted.
- W. (H.)** Les Juifs d'Alsace avant la révolution. (R. Éc. d'Anthr. de Paris,

1907, xvii, 393-7.) Cites evidence showing the harsh treatment of the Jews in Alsace previous to the Revolution of 1789.

- Wateff (S.)** Taches pigmentaires chez les enfants bulgares. (Bull. Soc. d'Anthr. de Paris, 1907, v^e s., viii, 231-48, 22 fig.) Describes 20 cases (17 Bulgarians, 2 Jews, 1 Bohemian; 8 boys, 12 girls; under one year 6, over two years 4; urban parents 11, country 8) among 3500 children belonging chiefly to the district of Sofia in southwestern Bulgaria, of "pigment spots" ("Mongolian spots"), with other anthropologic data. Among the facts brought out are: All children in the same family do not have "spots." The "spots" can appear several months after birth. They occur about the same in both sexes. The number of "spots" is variable, also the form, size, etc. The color is light blue, dark blue, and (rarely) brown. The "spots" present no special pilosity. They are localized, with rare exceptions, in the sacro-lumbar region. These "spots" occur in various races. The age of the child does not seem to influence the intensity of the coloration. The pigment arises in the deep layers of the skin. In the discussion Dr Rivet pointed out that in Ecuador the "blue spots" are regarded as undeniable proof of Indian blood in whites.

- Weissenberg (S.)** Krankheit und Tod bei den südrussischen Juden. (Globus, Brnschw., 1907, xci, 357-63, 3 fig.) Treats of disease and death and their folk-lore among South Russian Jews: Origin of disease (attributed often to the "evil eye," epidemics ascribed to bad life of some member of community), amulets, charms, folk-remedies, change of name in severe cases, "grave yard measuring" of patient, death-beds (iron bedsteads and hen-feathers bad), treatment of dying and dead (cleansing, etc.), clothes of dead (not to be foreign), burial and funeral-procession, ceremonies at grave, beliefs about soul of dead (wanders for 8 days in the air, enters house, etc.; the dead assemble nightly in the synagogue to pray).

- Beitrag zur Anthropologie der Juden. (Z. f. Ethn., Berlin, 1907, xxxix, 961-4.) Gives results of head-measurements of 34 Aaronites and 12 Levites as compared with 100 other Jews, showing the former to be as short-headed and broad-faced as the latter in general, the range of the cephalic index being respectively 78-88, 78.2-89.1, 73.7-88.6. The per-

centage of blonds is also about the same. The nose, however, is a little more "Semitic" with the Aaronites and Levites. They represent thus the same anthropological type. Each group counts about 10 per cent. of the total population of Jews in Russia and Germany.

- Wiegert (F.)** Neue Funde paläolithischer Artefacte. (Ibid., 718-29, 14 fig.) Describes flints from the Diluvium of Thuringia and Saxony—new finds at Ehringsdorf near Weimar, Rabutz near Halle, Osterode, Hundisburg, and Neuhausleben.

- Zaborowski (S.)** Relations primitives des Germains et des Finnois. (Bull. Soc. d'Anthr. de Paris, 1907, v^e s., viii, 174-9.) Treats of the Teutonic element (e. g., *kana*, 'hen,' *akana*, 'straw,' *kagra*, 'oats,' *knokka*, 'mattock,' *Venäjä*, 'Veneti,' etc.) in the Finnish languages. According to Z., "it was at the south of the Gulf of Finland, on the Baltic littoral opposite the island of Gotland, that the contact between Teutons and Finnish peoples took place, that gave rise to these loan-words and the transference of culture represented by them. This occurred in the 1st century A.D., when the shore of the Baltic from the Gulf of Finland to beyond the Niemen was Finnish.

Le passé préhistorique de la Bohême. (R. Éc. d'Anthr. de Paris, 1907, xvii, 362-6.) Résumés (from preface to forthcoming work in German) the data concerning the prehistoric past of Bohemia in the publications of Pic. Quaternary man existed in Bohemia and left his traces there; there appear to be no neolithic dolmens or cromlechs, though stone circles and menhirs occur; the neolithic people of Bohemia were of the Höckergräber type; bronze culture came in by the southwest; during the age of bronze the Hügelgräber type settled in the upper Moldau basin; the La Tène culture appeared already developed into the Höckergräber territory.

AFRICA

- Adams (G. A.)** Die Banôho und Bapuku in Kamerun. (Anthropos, Salzburg, 1907, ii, 1022-8.) Historical notes on the Bantu Banôho and Bapuku of the Cameroons, with comparative grammatical sketches of their languages. Though closely related, the two tongues do not reach unity of speech.

Balmforth (R.) The moral development of the native races in South Africa. (Intern. J. Ethics, Lond., 1908, xviii, 137-51.) According to B., the churches and missionary societies are inadequate to the work of education, which should be undertaken by the State. The education up to date has been too bookish and intellectual. Strength and morality won through industrial training, not serfdom, are necessary. South Africa will never be wholly a white man's country, nor wholly a black man's country. Harmony and coöperation of races must exist.

Brun (—) Notes sur les Croyances et les Pratiques religieuses des Malinkés fétichistes. (Anthropos, Salzburg, 1907, II, 722-9, 942-54, 2 pl.) Treats of the religious beliefs and practices of the West African Malinkés (Mandingo family): Cult of the dead (theories as to the dead, sacrifices, libations, offerings, etc.); belief in spirits and the cult observed with respect to them; the cult of Nama (a good deity), its organization, sacrifices, initiations, and secret societies, etc.; their nocturnal sorceries; the idea of God among the Negroes (divine name, origin of belief in God probably not due to Mohammedan influence, worship of no special sort outside of two kinds of offerings). The Malinké word for God, *Ngala*, is the Arab *Allah*.

Brussaax (—) Notes sur les Moundans. (B. Soc. d'Anthr. de Paris, 1907, v^e s., VIII, 273-95, 4 pl., map.) Treats of habitat, origins (from the Mandara mtns.), racial type fine, (well-built, strong), character (formerly warriors, robbers, and hunters, now agriculturists and cattle-raisers), tattooing, clothing and ornament (women nude till marriage), family and domestic life (polygamy, dowry, position of women free and independent, affection for children, no slaves except prisoners of war, slave's position not hard), religion and superstition (mild fetishism, three deities — *Muim Biambi*, creator and master of all; *Pibili*, male god; *Mébili*, female god, metempsychosis, Islamizing now taking place through Hausa influence), festivals and ceremonies (birth, death, millet-harvest), dances (some slow, others violent, harvest-dances, special dance at Fouli), houses, furniture, utensils and tools (architecture *cui generis*, granaries resemble old *burg* of the Vosges), villages, plantations, domestic animals (horses, cattle, sheep, goats, etc.); fowls, pigeons; dog changed to watchdog), food (almost entirely vegetal, fond

of milk and its products; Moundans are poor hunters and mediocre fishermen), industries (few and rudimentary, weaving, dying, poor smiths, pottery solid and well-made; with the establishment of the Haussas in the land, the Moundans are more and more abandoning manufacture for agriculture), weapons (neglected, no special weapon), musical instruments (mostly borrowed from Mohammedans), political organization (familial, no single over chief). The Moundans are in general one of the most advanced races of the Chari region.

Camboué (P.) Notes sur quelques mœurs et coutumes malgaches. (Anthropos, Salzburg, 1907, II, 981-9, 2 pl., 1g.) Treats of Malagasy customs and practices concerning childhood, childbirth, hair-cutting, tabus, etc.

de Clercq (A.) Grammaire du Kiyombe. (Ibid., 449-66, 761-94.) Detailed grammatical sketch of the Kiyombe (related to the numerous Fiote dialects) or Yombe language (Bantu) of the Mayombe region of the Congo Free State. It is spoken in several hundred villages.

Coll (A.) Los indigenas de Fernando-Poo. (Ibid., 387-91.) Treats of the Bubi, until recent years the only natives of Fernando Po; tribal name, origin-legend (from coast), tattooing, disease and medicine, food, religion (sacrifice to demon called *Morimé*), polygamy, dances (sexes separate), festivals, language (Bantu dialect). On p. 391 is given the Bubi version of the Lord's Prayer.

Dannert (—) Ueber die Sitte der Zahnverstümmelung bei den Ovaherero. (Z. f. Ethn., Berlin, 1907, xxxix, 948-53.) Treats of the *ekuha*, or custom of teeth-mutilation (removing the 4 lower incisors and making a A-shaped cut in the two middle upper ones), prevalent among the Ovaherero, and practised on both sexes at the age of 11-16 years. The mutilation is regarded as a tribal mark or ornament. The missionaries seek to abolish the custom.

Demonet (—) Un exorcisme Arabe. (B. Soc. d'Anthr. de Paris, 1907, v^e s., VIII, 310-13.) Describes the procedure of an Arab *marabout* to drive the evil spirit out of a young Arab suffering from mental affliction, by means of prayers, formule, the use of fire, perfumes, etc.

Durand (R. A.) Christian influence on African folk-lore. (Anthropos, Salzburg, 1907, II, 976-80.) Among such influences are certain "outward forms of

Christianity" said to prevail among certain people of the Zambesi valley who learned the art of the goldsmith from the Christian Goanese of the 16th and 17th centuries; the baptismal rites of the kings of Monomatapa, and perhaps also the "eating the body of God," cited from this region; the parable of the chameleon and the lizard, as told by the Mang'anja, near the south of L. Nyassa; certain ideas in some Kafir songs, etc., concerning immortality, "the Son of God, who has scars on hands and feet"; "Mother Mary" in canoe songs of the lower Zambesi, Shire, and L. Nyassa, etc.

A short notice to the article "Die Religionen Togos." (Ibid., 742.) Note on the onomatopoeic word for cock-crow, etc. The Mayano of the lower Zambesi use many such words. The coincidence between their speech and the Togo language in the matter of the word for "cock" is interesting.

Hamy (E. T.) Deux crânes de Oualolos, Zambesia. (Bull. Soc. d'Anthr. de Paris, 1907, v^e s., VIII, 271-2.) Gives measurements in comparison with Mozambique crania in general, of 2 female Walolo skulls now in the Paris Museum, one from Cundine, the other from Naqexa, both north of the junction of the Luula and the Quilimane.

Huguet (J.) Les *soffs* du Tell, du Sud et du Sahara. (R. Éc. d'Anthr. de Paris, 1907, XVII, 369-87.) Treats of the *soffs*, or associations for mutual assistance in defence and attack, among the Kabyles, Arabs, etc., of French North Africa—the Tell in Kabylia, Bon Sâada, Aurès; the Sahara (more numerous than in the Tell; the Touat oasis, etc. Just "as the violence of disputes and the tenacity of struggles have always been in direct relation to the degree of agitation of the *soffs*, so their attenuation is exclusively due to French influence in North Africa."

Karutz (H.) Tunesische Dolmen. (Globus Bernschwg., 1907, XCI, 399-10, fig.) Brief account of a dolmen between Enfidaville and Kairuan, central Tunisia.

v. Leonhardt (Freih.) Ueber einige religiöse und totemistische Vorstellungen der Aranda und Lontja in Zentralaustralien. (Ibid., 285-90.) Cites views of C. Strehlow, missionary of New Dettelsau, as to the existence of belief in a sort of supreme being among the Australian blacks. According to S. such is the *Aljira ilinka* of the Aranda (Arunta),

and he attributes to the Dieri such a being named *Mura*. v. L. sees in the Aranda beliefs "a maternally inherited totem."

Mayr (F.) The Zulu Kafirs of Natal. (Anthropos, Salzburg, 1907, II, 392-9, 633-45, 12 pl.) Treats of medicine and charms (emetics, enemas, taken internally, chewed, snuffed, inhaled, poured into nose, ears, eyes, rubbed on, poultices, inoculation and cupping, strained out and sprinkled on, miscellaneous, etc.), clothing and ornaments of the "skin Zulu" before the advent of the whites and of the present "kraal Zulu" or "blanket and beads Zulu" at various periods of life, artificial disfigurements (painting, scarring, piercing ear-tips, amputation of finger-joint). Some of the beadwork is beautiful. Although witchcraft is prohibited by English law, "in out-of-the-way places, even now, it is practised all over Natal and Zululand."

Müller (F.) Eine anthropologische Merkwürdigkeit aus Togo, Westafrika. (Ibid., 741, fig.) Reports the frequent occurrence (20 times observed in 10 years) among the Akposos, Ananas, Kpeles, and Fos of the interior of Togo, of a *forza* (not of artificial origin, but possibly a relic of embryonal life) above the cheekbone at the level of the curve of the concha. It is regarded highly by the natives as a mark of beauty.

Naville (E.) The origin of Egyptian civilization. (J. R. Anthr. Inst., Lond., 1907, XXXVII, 201-14.) Author seeks to show from archeological and cultural data that "the civilization of the early Egyptian dynasties belongs to a nation formed by an indigenous stock, of African origin, among which settled conquerors coming from Arabia, from the same starting-point as the Chaldeans." This foreign element was not Semitic, but Hamitic like the natives on whom they intruded. In the Mediterranean an Hamitic civilization was first in date and "the races who were the bearers of the Egean civilization came from the south." The native stock N. identifies with the *Anu* or *Anti* of the inscriptions. The white race in remote antiquity extended farther south in Africa, and were later driven northward by the negroes. N. assumes, incorrectly, "the so-called embryonic posture" in burial to be "one of the distinct African features."

Northcote (G. A. S.) The Nilotic Kavi-rondo. (Ibid., 58-66.) Treats of the

Jaluo of the Dinka stock, on the N. E. shore of L. Victoria Nyanza — physical characters (fine race, but not facially beautiful), dress and ornament (huge skin hat, feather bon, beads, knee and ankle bells, etc.), weapons, political and social constitution (semi-feudal, village represents family, private property in land to some extent, exogamy, inheritance), marriage (many formalities, early contract), funeral ("the greatest ceremony of all"), religion, witchcraft and demonology (wizard feared, rain-maker esteemed), character and temperament (honest except as to cattle, love fun and laughter, comparatively peaceful and non-aggressive, painfully litigious, industrious, keen for trading, and possessing adaptability in learning the lower stages of all kinds of work, — soldiers, sailors, police, masons, carpenters, sawyers, blacksmiths, gardeners, "boys"). N. styles them "a valuable subject race."

Otteking (B.) *Kraniologische Studien an Alt-Ägyptern.* (Korr.-Bl. d. D. Ges. f. Anthr., 1907, xxxviii, 124-8.) Based on study of 182 mummy-heads chiefly from Sakkarah (av. cap. of 168 skulls, 1336.4 ccm.; range of cephalic index, 65.9-78.9). A peculiar formation of the occiput is noted. The fine (Fellaheen) and ruder (Copt) types are probably represented in very early times. O. thinks dolicho-meso-dolichocephalic evolution is shown.

Picard (Lieut.) *Observations sur les Mahafys.* (Bull. Soc. d'Anthr. de Paris, 1907, v^e s., VIII, 206-10.) Treats of the manners and customs of the Mahafy of southeastern Madagascar, "the most backward of the Malagasy peoples (houses and village life, clothing and ornament, art, tobacco-smoking, festivals, disease, death and funeral ceremonies, religion, agriculture, etc.)." Certain large tortoises are *fady*, or tabu. The *ombias*, or shamans, have considerable moral influence. "Palavers" are much in vogue.

Prietze (R.) *Tiermärchen der Hausa.* (Z. f. Ethn., Berlin, 1907, xxxix, 916-39.) Native texts, interlinear and free translations with numerous explanatory notes, of three Hausa animal tales (Jackal and lion, The wise tortoise, The bird sudá), obtained from Hāz Ahmed of Kano, a characteristic and representative Hausa.

Roscoe (J.) The Bahima: a cow tribe of Enkole in the Uganda Protectorate. (J.

R. Anthr. Inst., Lond., 1907, xxxvii, 93-118, 2 pl.) Treats of country, people (tall, fine race, features of women "like those of Europeans," men cattle herders), kings, government, clans and totems (14 clans each with its own sacred object, *musira* or totem; of these 11 relate to the cow, 2 to man, and 1, that of princes, the monkey), food (chiefly milk), death and mourning (ghosts of common people have no special abode, but wonder about near the kraals; spirits of princes and princesses enter snakes), sickness, inheritance, adoption, marriage (child-betrothals), polyandry (two or three poor brothers sometimes have but one wife), birth, war (Bahima peaceable), religious beliefs ("supreme being," Lugaba, not worshipped; Kazoba, god of war, clan-deities, *mayembe* or fetishes), disease, "scape-cow," taboos, murder and manslaughter, hunting (only a few in certain clans are hunters), counting (Bahima have names for numbers up to 10; also signs given for numbers 1-10), time (year has three parts, day 10 divisions), dress (made from hides of cattle), magic, building and other industries (huts of primitive beehive kind; pottery and wooden milk-pots peculiar to themselves), brotherhood (by milk and blood), musical instruments (not a musical people; few songs; only musical instrument except drum is a sort of harp used by the women), amusements (wrestling both for men and boys; jumping; game like nine-pins), salutations, etc.

Sallé (M.) *Les funérailles chez les Betsileos.* (Bull. Soc. d'Anthr. de Paris, 1907, v^e s., VIII, 165-7.) The author, a teacher at Vangaindrano in Madagascar, describes the funeral ceremonies of the Betsileo — treatment (exposure) of body, song and cattle-sacrifice, burial, "mock-corps" and "cage," mourning, new clothes (after a year) for the dead, etc.

Baras. Région de Midongy: clans Zafimandom-boka et Zafimarozaha. (Ibid., 393-8, fig.) Treats of marriage (levirate), death, *bilo*-ceremony for cure of disease, art (statuettes, figures of animals), blacksmith (highly esteemed), etc. Marriages take place indifferently outside or within clan. No totemism. Drum used in all festivals and ceremonies. The physical characters of the Baras suggest negro origin or mixture. See Zaborowski (S.).

Stigand (C. H.) Notes on the natives of Nyassa-land, N. E. Rhodesia, and Portuguese Zambesia, their arts, customs and modes of subsistence. (J. R. Anthr. Inst., Lond., 1907, XXXVII, 119-32, fig.) Treats of arts (interesting is salt-making from grass; bark cloth, mats, etc.), burial customs (the Ayao and Atonga bury body west-east, the Achewa north-south), dances (*china-wali* or menses dance, "picture dances"; pregnancy dances), law of succession, marriage custom, miscellaneous customs (filial teeth, mutilation as punishment, mourning, eating, cultivation, preparation and use of tobacco), history of tribes as narrated by themselves, medicine (real and charm), modes of subsistence (hunting, traps, honey, making fire), musical instruments (*ischlianga*, *gubu*), religion and superstition (spirits; vague idea of supreme being; many now Mohammedans), dreams, miscellaneous items (night as measurer of time, albinism occasional, "bush madness"). The natives concerned are the Angoni, Ayao, Achewa, Atonga, Manganja, Achapeta, etc.

Tessmann (G.) Ueber das Verhältnis der Fangneger zur umgebenden Tierwelt. (Z. f. Ethn., Berlin, 1907, XXXIX, 755-61.) Treats of the "observation-sense" of the Fang negroes as revealed in their tales and folk-lore. The German texts of two legends concerning the tree-creeper and the snail are given, one glorifying the child's love for the mother, the other warning against neglect to honor her. The cries of birds especially are imitated and interpreted, and the characteristics of various species noted and remembered in language. The rhinoceros-bird, e. g., corresponds to our raven in folk-thought.

Torday (E.) and Joyce (T. A.) On the ethnology of the southwestern Congo Free State. (J. R. Anthr. Inst., Lond., 1907, XXXVII, 133-56, 4 pl., 2 fig.) Notes on the Ba-Sanba, Ba-Sango, Wa-Ngongo (only tribe using spears), Ba-Bunda ("counter-changed ogee" pattern of sword-blade unique), Ba-Yaka, Ba-Yanza (pp. 137-41), Ba-Pindi (skilled in carving and weaving), Ba-Mbala, Ba-Huana, Ba-Lua, Ba-Kwese (145-51), Ba-Djok, etc. Except the coiled basketry of the Ba-Kwese (eastern and southern type), the swords of the Ba-Bunda and the spears of the Wa-Ngongo, the culture of all these tribes is

"purely 'West African' in type." The Ba-Kwese have borrowed the *marimba* from the Ba-Lua.

Wolf (F.) Grammatik des Kögörök, Togo. (Anthropos, Salzburg, 1907, II, 422-37, 795-821.) Valuable detailed grammatical sketch (phonetics, noun, adjective, numerals, pronouns, verb, adverb, conjunction, preposition, etc.) of the Kögörök (own term) or Akabu, the language of the E-gbô-té-bô of E-gbô-kô or Kebu, south of Adele, West Africa. Pages 814-21 are occupied by native texts (with translations, explanatory notes, etc.) of greetings, riddles, songs, tales (two from Čakpogiwo, one from Kpálave. The Ewhe language is making inroads on the natives of this region).

Zaborowski (S.) A propos de l'origine soudanienne des Malgaches. (Bull. Soc. d'Anthr. de Paris, 1907, V^e s., VIII, 162-5.) Criticizes views of M. Grandier (*L'origine des Malgaches*, Paris, 1901) and claims priority for certain opinions as to "the rapprochement between Malagasy and Sundanese, Nias in particular," e. g., in the funeral customs of the Betsileo.

— A propos des Baras et les Malgaches à cheveux crépus. (Ibid., 398-9.) The physical characters of the Baras, etc., of Madagascar indicate a mixture of the black and yellow races. The existence among the Baras of the levirate points to ancient or profound Arab influence. See *Sallé*.

de Zeltner (F.) Traitement d'une ophthalmie du Sahel soudanais. (Ibid., 348.) Describes briefly the "cure" of a woman suffering from severe ophthalmia by a Moorish half-breed. Dancing and singing, anointing, breathing on the patient, suction by mouth and alleged extraction of "worms," took place.

ASIA

Besse (L.) Un ancien document sur les Todas. (Anthropos, Salzburg, 1907, II, 970-5.) Gives the French text of a letter of a priest in 1602 on the new mission of Todramalla, dependent on the college of Vaipicotta; and the Latin text of a letter by Father J. Fenecio in 1604 on the "Expediitio Totamalenensis," containing a brief account of the Todas. The *Pallem* of Fenecio may be, according to B., the caste of the Fallers.

Bourlet (A.) Les Thay. (Ibid., 355-73, 613-32, 921-32, 15 pl., 1 fig.)

Treats of family and domestic life (man superior and sole inheritor; polygamy but not polyandry; girl-life and position of woman, child-birth; education; affection; wooing, betrothal, marriage, dowry; prostitution almost unknown; adultery and divorce); public life, government, chiefs, etc. (chiefs of village, district, tribe, province, — authority of the first, or *quan ch'au* formerly unlimited; before French occupancy each village was a sort of republic with frequent popular assemblies to settle matters of taxation, quarrels, disputes, and even punishments); religious life (spirit and demon lore, cult of spirits and cult of the dead not clearly distinguished; the *mo-mun*, or medicine-man, priest and his initiation; every fifth day, day of rest; ceremonies in honor of the *phī sán* or soul of last dead chief, the tutelary spirit of village and province; feast of *h'au mo*, or "new rice"; dreams and omens, lucky and unlucky days); origin of the Thai according to their myths and legends (rudimentary cosmogony; deluge myth; writing given by the celestial being to the Thai), etc. At pages 927-931 B. discusses the Thai and Laotian alphabets, concluding that the Thai characters are only the primitive Siamese more or less corrupt or disfigured. The resemblance between Thai and Laotian is even more notable in the spoken tongue. In certain details of costume these peoples differ, and the Laotians are fervent Buddhists, as are not the Thai.

Cadière (L.) Philosophie populaire annamite. (Ibid., 955-69, 9 pl.) Continuation of monograph on Annamese folk-philosophy. Treats of *thân* (genii of various sorts — soil, hearth, etc.; some souls of men become *thân* after death), *ma* (spirits, often also souls of persons drowned, dying unusual or unnatural deaths, dishonored in burial, etc.), *gui* (demons, more wicked than the *ma*), *ông bà* (souls of ancestors), etc. The Annamese live, move, and have their being in the supernatural.

d'Enjoy (P.) Le théâtre en pays chinois. (B. Soc. d'Anthr. d. Paris, 1907, v^e s., VIII, 353-63.) Treats of the Chinese theater: origin (dramatic art came from India with Buddhism), character (Chinese drama has never been, like Greek drama, a real art; to live by the theater is a disgrace: a Chinese proverb says "the author is a god, he creates; the actor is a monkey, he grimaces"; no woman

adopts acting as a profession, it would disgrace her; actors are vagabonds, beggars, parasites), plays and music (heroic and military pieces, tragedies, historic poems, comedies and even vaudeville, — no censorship, realistic love scenes). In the comedies foreigners are made sport of.

Eugenien (—) Les Chiites d'aujourd'hui. (Anthropos, Salzburg, 1907, II, 406-21, 3 pl.) Treats of the modern Shiites: popular beliefs, sects and divisions, pilgrimages and sanctuaries (Nedjef, Kerbelâ, Samarra, Mechhed Rida), religious customs and usages (defilement and purification, death, fanaticism, temporary marriage, clergy, Hosein procession, etc.).

Gaupp (H.) Ueber die Geburtshilfe der Chinesen. (Z. f. Ethn., Berlin, 1907, XXXIX, 729-45, 10 fig.) Résumés the data in three Chinese books treating of midwifery, the *Ta shêng pien*, or "Birth of Man" (edited in 1715 by Gi-chai-chie), the *Ta shêng yao-chi*, or "What is worth knowing about Birth" (by a Shanghai physician, Fang Tung Yuan, ca. 1737), and the *Shê shêng pi sh'ou chung yao*, or "Most important secret explanations of midwifery" (ca. 1638 A. D.). The last book contains a history of the development of the fetus by months, which is of no little interest. At page 743 are reproduced from this book the representations of the human fetus in each of the ten months of its life. In all three books innumerable recipes and remedies are given. Prediction of the sex of unborn children is believed in by the Chinese physicians, and in the third book here considered a theory of male and female births according to the months of the year in which conception occurs, is developed. Much curious folk-medicine and folk-psychology is here represented.

Gowland (W.) The burial mounds and dolmens of the early emperors of Japan. (J. R. Anthr. Inst., London, 1907, XXXVII, 10-46, 8 pl., 23 fig.) Treats of the *misasagi* or imperial burial-mounds (sometimes "double," but containing only one dolmen) peculiar to Japan, their construction, contents. Those at Nara, Mise, Unabi (Emperor Jimmu), Takatsuki (Emperor Keitai), Fujiidera (Emperor Chuai Tenno), Sakai (Emperors Nintoku and Richu), Domoiji (Emperor Ingyo), double mounds near Omuro etc., are considered in detail. The chief centers of dolmen-mound distribution are

four (Yamato, Izumo, Kyushu, Musashi, — perhaps also Bizen, later), indicating in the early part of the period "independent or semi-independent clans of the same race, armed with the same weapons, and having the same burial customs and religious beliefs."

Greenwell (—) Notes on a collection of bronze weapons, implements and vessels found at Khinimán to the west of Kermán in south-east Persia by Major P. Molesworth Sykes, C. M. G. (*Ibid.*, 196-200, pl.) Treats of large pottery vessels (probably for burial purposes), globular vases of clay, bowls of hammered copper, bronze knives, pins, rods, leaf-shaped javelin-heads, axes (lion design), etc. According to the author, "so far as is known no similar cemetery or burials of a like kind have hitherto been found in Persia."

Hosten (H.) Prehistoric remains near Kodaikannal, Palnis. (*Anthropos*, Salzburg, 1907, II, 735-40.) Treats briefly of several groups of dolmens and two groups of kistvaens, and some low circles of earth and stones in the Palni hill region of northern Hindustan. Whether the "open dolmens" were tombs or dwellings is uncertain, and they yielded only fragments of red and black pottery of 5 or 6 different kinds; some beads, etc. Little also was found in the kistvaens, some of which had been previously rifled. There is need of scientific archeological research in this part of India.

v. Le Coq (A.) Bericht über Reisen und Arbeiten in Chinesisch-Turkistan. (*Z. f. Ethnol.*, Berlin, 1907, XXXIX, 509-24, 2 pl., 10 fig.) Gives results of author's investigations and discoveries in the ruins of Idikut Schari (old Uighur capital, the temples of the Murtuq, Toyoq, etc.), the ruins near Qomul, etc., during the year 1906. A complete temple of the Thang period (7-9th century) was discovered, and many Mss. and texts, including some in a hitherto unknown Iranic tongue, brought away. The author believes that "the East-Asiatic religious art is not autochthonous, but grew up on a Greek-Indian basis."

Lunet de la Jonquière (—) Les monuments de l'ancien Cambodge. (*Bull. Soc. Archéol. de Bordeaux*, 1906, XXVIII, 19-41.) After some historical notes, the author treats briefly ancient Cambodian temples and their surroundings; the apogee of this art was from the 9th to the 12th centuries A. D. At Angkor-

Vat, Méalea, etc., are innumerable sculptures, friezes, etc. The Brahmanic empire of Cambodia was a theocracy holding the great mass of the aboriginal element in harsh servitude. With the Thais came the gentler and democratic doctrines of Gautama.

Masip (J.) Del matrimonio chino. (*Anthropos*, Salzburg, 1907, II, 715-21.) Notes on marriage law, ceremonies, customs, etc., among the Chinese of the region of Xao-u, province of Fokien, — preparation for marriage, wedding, condition of married people.

Morel (G.) Note sur des silex taillés actuellement et employés industriellement. (*B. Soc. d'Anthr. de Paris*, 1907, 4^e s., VIII, 349-52, 4 fig.) Describes the flints employed in the manufacture to-day at Bunjurkli, north of Magnesia, Asia Minor, of a sort of huge scraper for use on the threshing floor in separating the grain from the straw. Every year hundreds of these implements are sent to Smyrna, etc., whence they reach the Greek isles. Some of the flints employed are really prehistoric, being picked up in the fields, etc.

de Morgan (J.) Le plateau iranien pendant l'époque pléistocène. (*R. Ec. d'Anthr. de Paris*, 1907, XVII, 213-16.) The author believes that glacial conditions made the Iranian plateau uninhabitable during the end of the Pliocene and through the Pleistocene period. Hence the absence of traces of paleolithic or archeolithic industry (in Persia, also, the neolithic is little if any developed). Iran remained desert up to the first appearance of the metals.

de St. Elie (A.-M.) Les Racusiens, Cyriens, Maronites ou Monothélites. (*Anthropos*, Salzburg, 1907, II, 668-74.) Notes on the semi-Christian Racusians (according to the author *Narâs* or *Rakâs* = Kûrus, Curus, an Arab form of Cyrus, patriarch of Alexandria, who decreed in 633 the adoption of monothelism), Cyrians, etc. To the Racusian sect belonged al'-Ahtal, the poet of the Omniades. The Mards or Mardaites were also Racusians. For a long time Racusian, Cyrian, Maronite, Monothelite were synonyms.

Schlaginhaufen (O.) Ein Beitrag zur Craniologie der Semang nebst allgemeinen Beiträgen zur Craniologie. (*Abh. u. Ber. d. Kgl. Zool. u. Anthr.-Ethnogr. Mus. zu Dresden*, 1907, XI, Nr. 2, 1-50, 26 fig.) Detailed description and measurements of a male and a female Semang skull (those of the pa-

rents of the chief Dahabó (capacities, 1310 and 1210 gr.; cephalic indices 72.6 and 81.8) in comparison with other Semang material of Martin, Duckworth, Annandale, and Robinson, etc. Specific marks of the "diluvial man" of Schwalbe do not appear in these skulls, which belong clearly to *Homo sapiens*. Among the Semang brachycephals seem to be relatively numerous. Good bibliography.

- Sergi (G.)** Dalle esplorazioni del Turkestan. Frammenti scheletrici umani. (A. d. Soc. Rom. di Antrop., 1907, XIII, 305-21, 10 fig.) Describes, with measurements where possible, fragmentary crania of 2 adults and 7 children from tumulus at Anau in Turkestan near the Persian border, — the various strata of the tumulus are thought to date from 8000 to 5200 B. C. Some of these crania may belong ca. 7000 B. C., and S. expresses the opinion that in the region in question, "from about the eighth millennium B. C. on, lived (the tumuli represent their scattered settlements) a people of the same origin as the Mediterranean stock (the crania are of this type)." This would confirm the views of those who make the Aryans a part of the Mediterranean race. In another tumulus at Anau (5200-2200 B. C.) was discovered a skull of a type suggesting the negro or negrito, but much inferior in form. These excavations and explorations were made by Prof. Pompelly under the auspices of the Carnegie Institution of Washington in 1904.

INDONESIA, AUSTRALASIA, POLYNESIA

- Abel (P.)** Knabenspiele auf Neu-Mecklenburg, Südsee. (Anthropos, Salzburg, 1907, II, 708-14). Detailed description of the boys' spear-games and the game of spear-fighting, the favorite play of all boys, youths, and men among the natives of New Mecklenburg.

- Baer (G. A.)** Contribution à l'étude des langues des indigènes aux îles Philippines. (Ibid., 467-91.) Gives vocabularies of 110 words in 22 Philippine languages and dialects compared with Malay: Tagal, 11 Negrito, Manguian, 3 Igorrote, Guinán, Tinguan, Ilocan, Vicol, Pampangan, Panayan. Also a special vocabulary of 393 words of the Negrito of Montalvan and some 80 phrases in that language; brief supplementary vocabularies of the Negrito of Olongapó

and Hermosa; and a song of the Negritos of Maón in Bulacan, and two Igorrote love-songs from Busao. The 9 Negrito vocabularies and that of the Igorrote of Busao were collected by the author. The Malay is from Wallace.

- Basedow (—)** Ueber Felsgravierungen hohen Alters in Zentral-Australien. (Z. f. Ethn., Berlin, 1907, XXXIX, 707-17, 10 fig.) Describes and figures ancient rock-carvings at Balparana and Wilkindinna (two water places formerly visited by the aborigines) near Yudanamatana, in Central Australia. These remarkable carvings were probably executed by the now extinct "Two-Tooth" blacks of the region. Among the figures are those of birds, snakes, tracks of animals, etc. Certain circles may be "corroboree signs," and the author thinks that the extinct gigantic bird *Genyornis newtoni* may be intended by some of the foot-prints. Other figures represent canoes, etc., also human beings perhaps. The great age of these carvings is shown by the patina with which they are now covered. Man may have been contemporary in this part of the world with these giant birds in the Tertiary period, but convincing proof is yet absent.

- von Bülow (W.)** Einige Bemerkungen über die Anthropologie der Samoa-Inseln. (Int. Arch. f. Ethnogr., Leiden, 1906, XVIII, 105-9.) v. B. holds, against Krämer, that the "best families" in Samoa are darker-skinned than the average Samoan (later immigrants). Three facial types are recognized: Melanesian, Polynesian, and Aryan (?). The author criticizes Krämer's illustrations from photographs of Samoans. At least three races are fused in the Samoan, and not perfectly now after 1000 years.

- Beiträge zur malayo-polynesischen Ethnographie und Sprachforschung. (Ibid., 100-5.) Discusses the etymologies of Malayo-Polynesian words for "man," "foreigner," the names *Viti*, *Tahiti*, *Maori* and *Moriiori*, *Manua*, etc. Samoan *tagata* (man) is traced to primitive Malayo-Polynesian *kanaka*, "child"; *Papalagi*, "foreigner," means "child of sky"; *Tahiti* = "eastern."

- Cunningham (D. J.)** The head of an aboriginal Australian. (J. R. Anthr. Inst., Lond., 1907, XXXVII, 47-57, 3 pl.) Describes, with measurements (external ear and nose also) head of 47-year-old man (died in asylum from organic brain disease after 11 years of melancholic

stupor. Prominent supraorbital region; narrow, receding and sloping forehead; retreating chin and "almost complete absence of a mental prominence; unusually low height-index, 62.5; low cephalic index, 66; high degree of prognathism; Darwinian tubercle strongly marked, — "ear distinctly human in all its elements and parts." Lower nasal index due to distortion in transmission of head. Comparisons are made with Neandertal skull and anthropoids.

Egidi (V. M.) *La tribù di Tauata*. (Anthropos, Salzburg, 1907, II, 675-81, 1009-21.) After brief ethnographic introduction (habitat, dwellings, villages, dress and ornament, weapons, food, tobacco, industries, domestic and social life, spirits, treatment of dead), the author gives a grammatical sketch of the language and comparative vocabularies (pp. 1016-21) of Tauata, Ora-Lopiko, Fajage, and Kuni.

Fritsch (G.) *Ueber einen zweimal trepanierten Schädel*. (Z. f. Ethn., Berlin, 1907, XXXIX, 702-3.) Treats of a skull from the Bismarck archipelago, belonging to an individual who had been personally known to Mr Parkinson. It had been trepanned twice, with an interval of 20 years, for an injury to the bone. A sort of trepanation on the forehead is often practised on healthy children as a protection against disease.

Hahl (A.) *Das mittlere Neumecklenburg*. (Globus, Braunsch., 1907, XCI, 310-16.) Treats of the Melanesian natives of central New Mecklenburg, — industries (weapons and implements, musical instruments, grass and bark weaving; carving not in use, canoe-building extinct), trade and commerce, population (less than 10,000, almost two-thirds males, prostitution, decreasing births, etc.), houses, chiefs, war, tribal divisions, marriage and marriage-customs, puberty ceremonies, death and mourning, spirit-lore (soul, earth and tree spirits and other evil spirits), dances (harvest, change-of-wind, spear, women's and men's special dances, etc.) and songs, *ririnangu* (corresponds to *dudduk* of Gazelle peninsula), but no society like the *init*, festivals, etc.

Klaatsch (H.) *Schlussbericht über meine Reise nach Australien in den Jahren 1904-7*. (Z. f. Ethn., Berlin, 1907, XXXIX, 635-90, 4 pl., 7 fg.) Gives account of author's travels and investigations from May 1906 to April 1907 in

Beagle bay, Northwest Australia (natives of Beagle bay, critique of Spencer and Gillen and of Howitt; no real totemism; *churingar* and soul-lore of the Nioiniol; penis-mutilation; ethnographic specimens from Beagle bay; taboos); Cambridge-Gulf, Wyndham, N. W. Australia (brain of youth obtained; leaf-shaped spear-points; stone implements of paleolithic types); Port Darwin, Melville island, Northern Territory (atavistic foot-formation in a native of Port Keats; method of fighting; natives of Melville id.; pillar-graves, — from which skulls were obtained, — and their ornamentation; clothing and ornament of natives; body-painting; dances), Tasmania (stone implements, etc.). Dr K. was very successful in making collections of ethnologic objects.

de Marzan (J.) *Le totémisme aux Iles Fiji*. (Anthropos, Salzburg, 1907, II, 400-5.) Résumés the ideas of natives of Fiji id. on totems principal (these are double, i. e. both animal and vegetal, and are not to be destroyed or eaten) and secondary (can be eaten with certain observances). Many tribal names have no analogy with the names of their principal totems. A tribe may have several secondary totems. Great respect was paid to the principal totems, and they were consulted in wars, disease, marriage, etc. An expectant mother was visited by the totem animal. Accessory totems were also known. A woman marrying in a foreign tribe honors both the totems of that tribe and her own. The tree-totem was probably the only principal totem at first, — according to Fiji legend, the place of origin of the people is a mountain of the province of Ra, called Nakau-vadra, from the tree *vadra*. A list of tree and animal totems of some tribes is given on page 405.

Meier (J.) *Primitive Völker und "Paradies"*. Zustand. Mit besonderer Berücksichtigung der früheren Verhältnisse beim Oststamm der Gazellehalbinsel im Bismarck-Archipel, Neu-Pommern. (Ibid., 374-86.) Discusses the so-called "Paradise-condition" of primitive peoples, the natives of the Gazelle peninsula, Bismarck archipelago in particular. Religion (fear of evil spirits, cult of the dead), social relations (anthropophagy, war and murder, slavery, etc.), family life (low position of woman, no real "family-sense"), household activities, food, clothing, etc. The author concludes that the evidence cited (and the

immorality also is great) indicates no "Edenic condition" for these aborigines, who nevertheless possess germs of religious truths, the sense of good and bad, etc., which make the labor of the missionary possible and profitable.

— Mythen und Sagen der Admiralitätsinsulaner. (Ibid., 646-67, 933-41, 6 pl., map.) Gives, with occasional explanatory notes, the native texts (Moanus language) with interlinear translations of 18 creation myths, etc. (creation of earth and man, origin legends, creation of woman, origin of Poauai Channel, origin of thing from the belly of a snake, origin of fire, of the cocopalms, of the *areca*-palm, etc.), 4 legends of the confusion of tongues, 5 legends concerning sky, sun, moon, etc. (the 40 men who went up into the sky, origin of men from the sun, sun-path of good moon-path of bad, origin of dark spots in moon, why sun rises in east and moon in west). The source of these myth-texts is Po Minis, son of Po Sing, a former chief of the Admiralty isls., and a pupil of the author in the Catholic missions.

Mollison (T.) Die Maori in ihren Beziehungen zu verschiedenen benachbarten Gruppen. (Korr.-Bl. d. D. Ges. f. Anthr., Broschw., 1907, xxxviii, 147-52, 8 fig.) On the basis of 24 different cranial characters and "the method of relative deviation," M. compares the Maori (16 skulls), studied by him with other Maori (Luschan, Scott), Chatham islanders (Scott), Lifu islanders (Bertilson), Australians, etc. M. concludes that Polynesians, Melanesians, and Australians represent a mixed series; and that among the Maori the Polynesian element by far predominates.

Planert (W.) Australische Forschungen. I. Aranda-Grammatik. (Z. f. Ethn., Berlin, 1907, xxxix, 551-64.) Grammatical sketch of the Aranda (Arunta) language of Central Australia, with (pages 561-566) four brief native texts, with interlinear and free translations. The author, Hr. Wettengel, has lived several years in Australia and so familiarized himself with the Arunta and Dieri languages as to be able to preach in both. The Ms. has been revised by Planert.

Reiter (F.) Traditions tongiennes. (Anthropos, Salzburg, 1907, ii, 438-48, 743-54.) Gives native texts and interlinear translations, free versions, explanatory notes, etc., of the legend of the origin of the world and its inhabitants, and of the

tale of the island of Eua and the deeds upon it of gods and devils, men and women. The first is the famous Polynesian myth of the fishing up of the lands by Maui.

Roth (W. E.) North Queensland Ethnography. Bulletin No. 9. Burial ceremonies, and disposal of the dead. (Rec. Austral. Mus., Sidney, 1907, vi, 365-403, 7 pl.) Gives particulars concerning death and burial among the aborigines of Pennefather river, lower Carpentaria coast, Princess Charlotte bay, Cape Bedford, Bloomfield river, Tully river, Russell river, Boulia, Cloncurry, upper Georgina river, Rockhampton, Brisbane. Death is thought due to "some enemy in the flesh or spirit dooming the individual to a particular form of death, e. g., by lightning, flood, spear." The differences between the funeral obsequies, observances, superstitions, etc., of men and women, warriors and others, children and adults, young and old, strong and healthy and weak or infirm, go back to the nature of the body from which the spirit working the evil has come. The matter is further complicated by the fact that the spirit may be associated with shadow, breath, heart, after-birth, ears, nose, and can thus be seen, heard, smelt, etc. Propitiation, therefore, becomes quite an art. According to R. the natives do not eat human flesh to acquire the moral or physical qualities of the dead person (no male, e. g., would wish to obtain the attributes of a woman or a child). The widow "becomes ultimately the property of one or other of her late husband's group or blood-brothers." The deceased's hut is usually burnt or taken to pieces. Mourning colors are either white or red, or both, the latter being more indicative of the avenging sentiment.

Rougier (E.) Maladies et médecines à Fiji autrefois et aujourd'hui. (Anthropos, Salzburg, 1907, ii, 994-1007, 4 pl.) Treats of tabus and observances concerning the elements, agriculture, fishing, health, the individual at various stages of life (before birth, at birth, at adolescence, married, complete man), struggle of the modern Fijians against the ills of new diseases (diseases of the body and their treatment, Fijian surgery), etc. At pages 1006-1008 is given a list of medicinal plants (Fijian and Latin names, parts used etc.). The Fijians explain all diseases as due to violation or neglect of tabus or observances.

Schmidt (W.) Die geheime Jünglingsweihe der Karesau-Insulaner, Deutsch-Neuguinea. (Ibid., 1029-56.) Detailed account, after information given by Boniface Tamatai Pritak (a youth of 15 years, who had spent 3 years at the school of the Catholic mission of Tumleo) of the secret ceremonies practised by the Karesau islanders at the initiation of their youths, — the native texts of the songs are given, the other matter being in German only. There is also an initiation for girls.

Strehlow (C.) und von Leonhardi (M.) Die Aranda- und Loritja-Stämme in Zentral-Australien. I. Teil. Mythen, Sagen und Märchen des Aranda-Stammes. (Veröff. a. d. Städt. Mus., Frankf. a. Main, 1907, I, xi, 1-104, 8 pl.) Gives German texts of 74 myths, legends, and tales of the Aranda (Arunta) of Central Australia, collected by C. Strehlow, since 1892 a missionary among the aborigines (Dieri and Aranda), with explanatory notes, etc. In the case of 5 of these an interlinear translation and a free version are given. Of the texts 64 relate to the "totem-procedures." In the plates accompanying this valuable monograph objects used in connection with the "totem ceremonies," etc., are shown. These aborigines have much lore concerning the *tjarunga* stones and pieces of wood (with ornamentations) which are figured in four of the plates. In these stories sun, moon, stars, Pleiades, Milky Way, comets and meteors, rainbow, whirlwind appear; also the kangaroo, emu, eagle, fishes, dog, snake, echidna, bat, duck, raven, lizard, frog, ant, wallaby, wild-cat, opossum, rat, owl, crane, kingfisher, larvæ, and others. Among the noteworthy personages are the great good being Altjira, Mangarkunjerkunja (creator of men, etc.), Putiaputia (the teacher of the Aranda), the goddess Kaijala, Ara, the divine kangaroo, Tuatjurnbinjua (who taught women and girls to dance), Atua arintja (the bad man), and Atua indatoa (the beautiful man), etc. A mass of information relating to primitive ideas and institutions is contained in these texts.

Wettengel (—) See *Planert*.

Zaborowski (S.) Métis d'Australiens et d'Anglais. (B. Soc. d'Anth. de Paris, 1907, v^e s. VIII, 385-93, 2 fig.) Resumes knowledge as to *métis* of Australian blacks and Europeans (Freycinet in 1800-4 met two or three; lately the existence of a considerable number

has been reported, and in 1881 Cauvin believed they were on the increase). The inquiries of Z. reveal the fact that of the 3888 blacks of W. Australia in 1901, no fewer than 502 were *métis*; while in 1906 the latter had increased to 591, the pure-bloods having decreased some 250. The portrait of a young *métis* of Victoria shows refinement toward the European type. Others show sometimes the predominant Australian characters, in certain cases "repulsively so." In the discussion M. Baudouin cited an interesting case of marriage of a young French sailor and an Australian girl of 7 years. As a result of this paper and the discussion a permanent committee for the study of ethnic mixtures was appointed.

AMERICA

Ambrosetti (J. B.) Exploraciones arqueológicas en la Pampa Grande, Provincia de Salta. (Rev. Univ. de Buenos Aires, 1906, v, repr., pp. 1-199, pl., 173 fig.) Gives the results of archaeological explorations in 1905 in the Pampa Grande of the province of Salta, Argentina, by Dr A., Dr F. Cervini, Dr C. O. Bunge, and Dr L. Maupas. Among the objects discovered were large numbers of burial-urns, together with many anthropomorphic urns, painted dishes, etc.; bone implements, pottery of various sorts (often zoomorphic and anthropomorphic in part; and frequently engraved with various designs), stone objects (axes, hammers, mortars, bolas, ornaments), bronze objects (*totém*s or ceremonial axes, pectoral plates and ornamented disks, bells, etc.). Interesting are the cairns or stone tumuli, and the *pedrera*, which seem to have been places of religious expression or ceremonial. Two types of culture are revealed by these investigations: 1. A type of ruder urns, pottery, etc., like that discovered by Boman in San Pedro de Jujuy, and in Carmen, Valle de Lerma, Salta. 2. A type of urns and other objects purely Calchaqui. Of these the first type is much more common. Sometimes the two types are mingled in one burial-place, but these graves were used at different periods. The people of inferior culture may have been of the same race as the Calchaquis, — the latter buried children, not adults (as did the former) in urns. At Rincon (Casa Patronal) a new valley-tribe of higher culture established itself by force,

- as the pictographs in the Carahuasi grotto indicate, — and an Incaic tribe as some have believed.
- Asmundsen's** Polarexpedition. (Globus, Brunschwg., 1907, XCI, 367-8.) Résumés articles from geographical journals of London and Paris. Contains some notes on the Eskimo of Netchilli (domestic life, shamans, religion, etc.).
- Dautzenberg** (L.) Algunos datos bibliográficos acerca de la lenguas de las Américas meridional y central. (Anthropos, Salzburg, 1907, II, 990-3.) Cites as addition to the titles in de la Viñaza's *Bibliografía española de lenguas indígenas de América* (Madrid, 1892), a *Tratado de los Evangelios* published in Spanish and Quechuan at Lima sometime between 1641 and 1671. At pp. 991-2 D. quotes the first few paragraphs of the sermons in Quechuan and Spanish. The author also refers to Bishop Thiel's *Apuntes lexicográficos de las lenguas y dialectos de los Indios de Costa Rica* (San José, 1882) and J. M. Grimm's *La lengua Quechua, dialecto de la República del Ecuador* (Freiburg i. Br., 1896) and *Vade mecum para párrocos de Indios Quechuas* (Freiburg i. Br., 1903).
- De Goeje** (C. H.) Bijdrage tot de ethnographie der Surinaamsche Indianen. (Int. Arch. f. Ethnogr., Leiden, 1906, XVII, Suppl., 1-117, 16 pl.) The first part of this valuable monograph on the Indians of Surinam, based on the data of the exploring expeditions of 1901-05, treats of tribes and their distribution, clothing and ornament (of dancers in particular), settlements, houses, furniture, domestic animals, etc. (the Ojana have 7 types of houses, the Trio 4, of which 3 are the same as with the Ojana), food, fire, tobacco, hunting, fishing, weapons, pottery (that of Trio and Ojana not so good as Galibi and Arawak), cotton, weaving and plaiting (chief types are described), ornamentation, drawing, modeling, music (5 sorts of flute), population, customs, usages, etc., trade. Part II (pp. 31-111) is devoted to linguistics, extensive classified vocabularies being given of the Cariban Kalina, Trio, and Upurui, and one of 103 words of the "trade-language" of the Indians and "Bush-Negroes."
- Ehrenreich** (P.) Ueber einen archäologischen Ausflug nach Mexiko und Yukatan im Oktober und November 1906. (Z. f. Ethn., Berlin, 1907, XXXIX, 752-754.) Notes on a visit to Tezcuco, Teotihuacan, Uxmal, Chichenitza, etc.
- Friederici** (G.) Die Wirkung des Indianerbogens. (Globus, Brunschwg., 1907, XCI, 325-30.) Treats, with numerous references to the literature of the subject, old and new, of the bow-and-arrow of the American Indians, with special consideration of strength and power of propulsion, skill in avoiding missiles, etc., devices for improving the weapon, protection for left hand, etc. Instances of powerful shots (piercing shields, men, or animals), length of shot, etc., are given.
- Geoghegan** (R. H.) Pri kelkaĵ rimarkindaj similajoj inter la antikvaj kalendaroj de la amerikanoj kaj la azianoj. (Intern. Scienca Revuo, Genevo, 1908, V, 112-19.) General discussion of "some remarkable similarities between the ancient calendars of Americans and Asiatics."
- Groeteken** (A.) Bischof Armentia O. F. M. und die Erforschung des Rio Madre de Dios. (Anthropos, Salzburg, 1907, II, 730-34.) Gives brief account of the life and works of N. Armentia, Bishop of La Paz, in connection with his investigations of the Rio Madre de Dios country and its Indian inhabitants. At p. 734 are given (from Armentia) the personal possessive and demonstrative pronouns in the Tacana proper, Araona, Pacaguara, Cavineña, and Mosatena languages. The second edition of Armentia's *Navegación del Madre de Dios* appeared in 1887.
- Harnden**, E. W. Indian pictographs in Pate Valley [California]. (Sierra Club Bull., San Francisco, 1908, VI, no. 4, p. 258-9, 2 pl.) Brief description of pictographs in Tuolumne cañon, Cal., which forms the northern limit of aboriginal work of this sort in the state. Their meaning has not been determined.
- von Ihering** (H.) Ueber die Verwendbarkeit der brasilianischen Dioritaxte zum Fällen von Bäumen. (Z. f. Ethn., Berlin, 1907, XXXIX, 746.) Notes reporting successful personal experiment in use of diorite axes of Brazilian Indians of São Paulo in felling trees.
- Jetté** (J.) On the medicine-men of the Ten'a. (J. R. Anthr. Inst., Lond., 1907, XXXVII, 157-88.) Treats of spirit and "devil" lore, medicine-men (one medicine-woman to five medicine-men), their power, social standing (influential, rich, respected, feared, — "the nearest approach to a chief, a priest, a physician"),

calling to the profession (by find a *karu-nish*, a bead-like object, after a dream, — a collection of such in a pouch or box is his amulet), mode of life (not different from fellows), foreknowledge and predictions (not always believed in), "healing" (sometimes showy and elaborate), taboos, "calling" fish or game by medicine-man, performance of tricks. At pp. 177-82 is given a list of foreign and native words used in this paper, and at pp. 182-5 a list of words and phrases used by the medicine-man. On pp. 185-8 are given native text and interlinear and free translation of a Ten'a legend, "The Cripple." Among the Ten'a "the name given to a small child is commonly the first incorrect or outlandish word which he or she pronounces, or which is said about him or her." They are "phenomenally credulous" of their medicine-men. These Athapaskan Indians live in central Alaska and number some 1600-2000.

Lehmann (W.) Die altemexikanischen Mosaiken des ethnographischen Museums in Kopenhagen. (Globus, Brunschwg., 1907, xci, 332-5, 4 fig.) Treats of two ancient Mexican mosaics now in the Ethnographic Museum at Copenhagen — one a mask in the form of a snake-head out of whose jaws looks a human head; the other (specially fine) is a head with a high feather-diadem — the tongue protrudes, and other things also suggest comparison with the ancient Mexican masks of the Aldrovandus collection in the *Museo preistorico* at Rome.

Mahoudeau (P. G.) Les primates et les prosimiens fossiles de la Patagonie d'après les travaux de M. Florentino Ameghino. (R. Éc. d'Anthr. de Paris, 1907, xvii, 354-61, 387-93.) Résumés the facts and theories in the recent works of Ameghino on the fossil primates and prosimians of Patagonia, particularly the *Homunculus patagonicus*, a monkey of such characteristics as to rank probably in the line leading to man and the anthropomorphic apes. According to Ameghino, the *Homunculus*, which were neither arborescences nor climbers, but walkers erect or half-upright at least, are the primates nearest to the human type — they are "the ancestors of all the apes (except the Lemurs) of both the New and the Old World." And Patagonia was the scene of this highest mammalogical (including man) development. In the Araucanian stage of the more

recent geological strata A. finds traces of very rudimentary human implements.

Prowe (H.) und Lehmann (W.) Quiché-Sagen. (Globus, Brunschwg., 1907, xci, 305-6.) Discussion and criticism of Quiché etymologies set forth by P. Dr L. objects to those suggested for *imox*, *Hunahpu* etc.

Rivet (Dr) Essai sur les peuples sud-américains. (R. Scientif., Paris, 1908, 3^e s, ix, 257-69.) Treats of the past, present, and future of South America. "the only European colony on tropical soil." The white population consists of "transplanted folk." Equality is proclaimed everywhere, but nowhere else do pride of race and prejudice of birth flourish more, — aristocrats, party, priesthoods rule in republics. Castilian arrogance has fed upon the conquered aborigines. Traditionalism and the religious spirit mark the Spaniard. The South American is psychologically the product of the mingling of the Spanish race and the Indian, controlled by the geographic situation. There is in formation a new *American* race, born of European and Indian, which, with the coming of political stability, will have vitality and energy enough to exploit the land and carry on the work of culture and civilization.

Teschauer (—) Ueber den gegenwärtigen Stand der Ethnographie in Brasilien. (Anthropos, Salzburg, 1907, ii, 499-507.) Résumés recent ethnographic investigations in São Paulo (*sambaquis* partly pre-Columbian, partly post-Columbian, partly of natural origin; T. thinks their importance has been exaggerated), Rio de Janeiro (Lacerda's studies of primitive man in Brazil: 1st period, cave-man of Sumidouro; 2d period, *Sambaqui* man; 3d period, man of Pacoval, — the last period immediately precedes the discovery of America, between the two first millenniums elapsed; in Bahia the white-negro *métis*, in Pará and Amazonas the Indian-white *mitis* dominated, — it is the Indian-white intermixture that still goes on; the products of crosses between white and negro are esthetically finer and more regular than of those between white and Indian), Bahia (investigations of C. Barreto in the *cavas fortes* and other ruins of Amargosa, Feira de St. Anna, etc., the *murundus* or burial mounds, inscriptions, native nephrite, etc.), Belém do Pará (Dr E. A. Goeldi's investigation of the catacomb-like graves of the Cunany In-

dians, anthropomorphic urns like those of the island of Marajó; Dr N. C. de Sena's studies of the stoneage in Brazil), etc.

Thibon (F.) La región mastoidea de los cráneos Calchaquíes, estudio hecho sobre 100 cráneos. (An. Mus. Nac. de Buenos Aires, 1907, XVI, 307-46, 16 pl.) This, the first anthropological thesis for the doctorate in S. America, is a detailed study with measurements and drawings of the mastoid region of 100 "Calchaquí" (2 defective on left side) skulls, of which 54 are in the Museo Nacional and 46 in the Ethnographic Museum of the University. Among the results noted are these: The mastoid apophysis is larger on the left and not, as in European skulls, on the right; the digastric crest predominates; the mastoid foramina occur less frequently, and less often on the right side (in European, left); the external petrosquamous suture is much more common than in European skulls and the internal attitude of the mastoid apophyses less. This monograph has also appeared in pamphlet form (Buenos Aires, 1907, pp. 72).

Torres (L. M.) Arqueología de la cuenca del Río Paraná. (R. d. Mus. de La Plata, Buenos Aires, 1907, XIV, 53-122, 45 fg., map). Gives results of archeological investigations of Zeballos and Pico, Mar-

zanti, Ambrosetti and the author himself in the region between the Paraná and Uruguay. The tumulus of Campana, near the city of Buenos Aires, and that of the river Usuró at Goya in Corrientes, and the paradero of Gaboto are treated in detail and the finds described, human remains, instruments of stone, bone (of which some are engraved), pottery (zoo-morphic, geometrical ornamentation, etc.). The zoomorphic and anthropomorphic type of pottery found at Campana and Goya, etc., does not occur in the islands in the south of Entre Rios or in those of the western part of the Delta. The only human skull of those discovered at Campana which came into the Museum has an index of 71.28 and may be related to those from the insular region of Entre Rios and the neighboring parts of Uruguay. Much of the domestic *outillage* from the Campana tumulus closely resembles that of the Delta and Entre Rios.

Vram (U. G.) Su d'una singolare urna funeraria dell' America del Sud. (A. p. l'Antrop., Firenze, 1907, XXXVII, 291-3, 2 fg.) Describes a "bath-shaped" urn containing a little mummy, from Colombia, now in the Ethnographic Museum, Rome. On the bottom is scratched a sort of "Greek" design. The measurements of the mummy are given.

FOREIGN NOTES

RECENT EXCAVATIONS AT LA TÈNE

In accordance with the plans to which we have already alluded,¹ the committee in charge of the exploration of La Tène began work on the station early in March 1907, and continued until the middle of June, when, on account of the high water in the Lake of Neuchatel caused by the melting of snow and ice in the Juras, it was necessary to cease operations until autumn, when they were again resumed.

La Tène — the name applied to the only known settlement or station dating from the Iron age on the Lake of Neuchatel, Switzerland — was situated near the northeastern corner of the lake, at the end of the small stream — La Thièle — which flowed from that lake to the Lake of Bienné.

Some thirty years ago a canal was constructed between the lakes. It followed the general course of the stream, but was so deepened as to cause the lowering of the surface of the Lake of Neuchatel about three meters. Now as the southern, or Neuchatel, end of the canal is a short distance east of the old water course, the site of the ancient pile settlement is at the present time dry except when the waters of the lake are unusually high.

It would be difficult to tell the exact depth of the water at the time the site was occupied, but it was probably not more than two meters, rather less than under some of the older settlements of the Bronze or Stone ages.

Subsequent to the time La Tène was last occupied, which was probably during the first century of the Christian era, the stream changed its course, thereby washing away some of the ancient substructures and covering others with sand and gravel. Consequently it is rather difficult to designate the exact bounds of the ancient village.

In fig. *a*, pl. xvi, is shown a view of the site as it appeared March 26, 1907, a few days after the beginning of the exploration. The strata in which the objects occur are below the temporary track shown in the photograph. The mass of sand and gravel which is shown being cut away by the workmen has been deposited since the site was abandoned.

In making the photograph shown as fig. *b*, the camera was placed on

¹ *American Anthropologist*, 1906, vol. 8, no. 4, p. 737; also in *Mau*, 8, London, 1907.

the top of the elevation visible on the right of the track, in the foreground of fig. *a*. As will be seen, the deeper parts of the excavation are filled with water. This came in from the lake and was the reason why the work was stopped in June.

Unfortunately the discoveries were of no special importance and only one new type was found. This resembles a light hammer and consists of a slender bar of iron having at one end a transverse piece extending about 4 cm. on either side. The other end of the bar is set into a bone handle, which had been smoothed and rounded.

Among the objects discovered are several rather large knives, two horse bits, a number of iron rings of different sizes. Several adzes and axes had, remaining in the sockets, parts of their wooden handles. Numerous fibulae of La Tène II type were found, but all were in a bad state of preservation. One small example of red enamel was also recovered from the excavation.

Work is to be continued on the site until the entire area has been explored and as a result much valuable material will probably be brought to light. An account of the work during the year 1907 is about to be published by the Musée Historique of Neuchâtel, Switzerland.

D. I. BUSHNELL, JR.

THE BEGINNING OF IRON

During the meeting of the British Association for the Advancement of Science, held at Leicester, England, July-August 1907, Professor W. Ridgeway, of Cambridge, presented a most interesting paper on "The Beginning of Iron."

A summary of the paper, quoted from p. 644 of the official report of the meeting, follows:

"Formerly it was generally believed that iron was the gift of Africa to mankind, and, if not of Africa, most certainly of Asia. Modern research has shown that Egypt did not use iron until about 800 B. C., that the Libyans were not using it in 480 B. C., and that the Semitic peoples did not use it from a remote past, but that they borrowed it comparatively late. I urged in 1896 and in 1902 that Central Europe was the true center of the use of iron as a *metal*, and that it was first diffused from Noricum. At Hallstatt iron was seen coming into use first to decorate bronze, then to form the edge of cutting implements; next it gradually replaced bronze weapons, and finally took new forms of its own. Everywhere else iron as a *metal* came into use *per saltum*. Man probably found it ready smelted by nature, as the Eskimo discovered it at Regent's Bay



a. Beginning the Excavation, March 26, 1907



b. Showing the Excavation filled with Water from the Lake, July 12, 1907

EXCAVATIONS AT LA TÈNE

and at Ovifak. Some still imagine that it was used very early in Egypt, because its name occurs in early documents; but this is readily explained, since hematite was known and used very early in Egypt, and the same material was used very commonly in the *Ægean* long before the Bronze age. But it was treated not as a *metal* to be smelted, but as a stone to be ground into axes and beads. The Egyptians thus knew the mineral and had a name for it, which they continued to employ when they had learned its use as a *metal* from Europe. Others also cling to the belief that iron was worked in Central Africa from a remote time. But in Uganda, which was in touch with Egypt by means of the great lakes and the Nile, iron, as I am informed by the Rev. J. Roscoe, became first known in the reign of a king about nineteen reigns back (about five hundred or four hundred years ago). This renders it very unlikely that the metal was worked until very late in Central Africa. It is certain that the peoples beyond the Caspian, as well as those along the Indian Ocean, did not use iron till quite late; that India herself did not know it at an early date, and that Japan got it only about A. D. 700; yet some still imagine that it must have been known to the Chinese from remote antiquity. But the earliest mention of iron in Chinese literature is about 400 B. C., whilst a bronze sword belonging to Canon Greenwell has an inscription read by Professor Giles which dates it between 247 B. C. and 220 B. C. There is evidence that bronze swords were being used till A. D. 100, and that it was only then that iron swords were coming in. It is now clear that the use of iron as a *metal* is due to Central Europe."

OLD NORTH AMERICAN CLUB IN THE LEIDEN MUSEUM

Many of the older European museums, and especially those in the countries which had intercourse with the colonies during the early days, possess rare old objects from North America. These were carried back by the traders or explorers and kept as curiosities, later to find their way to museums where they are now preserved. Such is probably the history of an excellent old club in the Rijks Ethnographisch Museum at Leiden. Although nothing is known of its early history, it was evidently taken back from New Amsterdam, as it is the type of weapon used by the Iroquois and eastern Algonquian tribes. It is made of maple, turned dark with age and highly polished from use. The dimensions are: extreme length, 555 mm.; greatest diameter of the ball or knob, 102 mm.; thickness of the handle, 30 mm.

As shown in the accompanying figure 89, there is a perforation above the handle or grip, while on the outer edge, near the perforation, are

twelve small notches. The weapon is not decorated, but in form it closely resembles a highly decorated example in the Ashmolean Museum, Oxford, which has already been described (*Man*, 59, London, 1907). The specimen is also figured in Mr Holmes' paper on Tomahawks on page 271 of this issue of the *American Anthropologist*.

We are indebted to Dr J. D. E. Schmeltz, director of the Leiden Museum, for a photograph and the description of this rare specimen.

D. I. BUSHNELL, JR.

FIRST DOCTOR'S THESIS IN ANTHROPOLOGY IN SOUTH AMERICA

The first student in South America to take his degree of Doctor of Philosophy in Anthropology is Fernando Thibon, whose thesis bears the title *La región mastoidea de los cráneos Calchaquies. Estudio hecho sobre 100 cráneos* (Buenos Aires, 1907, pp. 72), and is a detailed study with measurements and drawings of the mastoid processes of 100 skulls from the Calchaqui region of the Argentine. Differences between Calchaqui and European skulls are brought out. The work done is most creditable. Dr Thibon was a student under Dr Robert Lehmann-Nitsche, professor of anthropology in the National University of Buenos Aires, who suggested the subject of investigation and under whose auspices the monograph was executed. The University of Buenos Aires is to be congratulated upon this distinct recognition of anthropological science. It is just sixteen years since the first doctorate in anthropology was conferred in North America.

ALEXANDER F. CHAMBERLAIN.

COLLECTION OF OLD OBJECTS FROM THE NORTHWEST COAST

A collection of objects of the Eskimo, Aleut, and Tlingit, from the ancient Russian possessions in northwestern America, which have remained almost entirely unknown for nearly a century in the Imperial Arsenal of Tzarskoe-Selo at St Petersburg, Russia, were recently transferred by order of the Emperor to the Alexander III Museum. Pro-

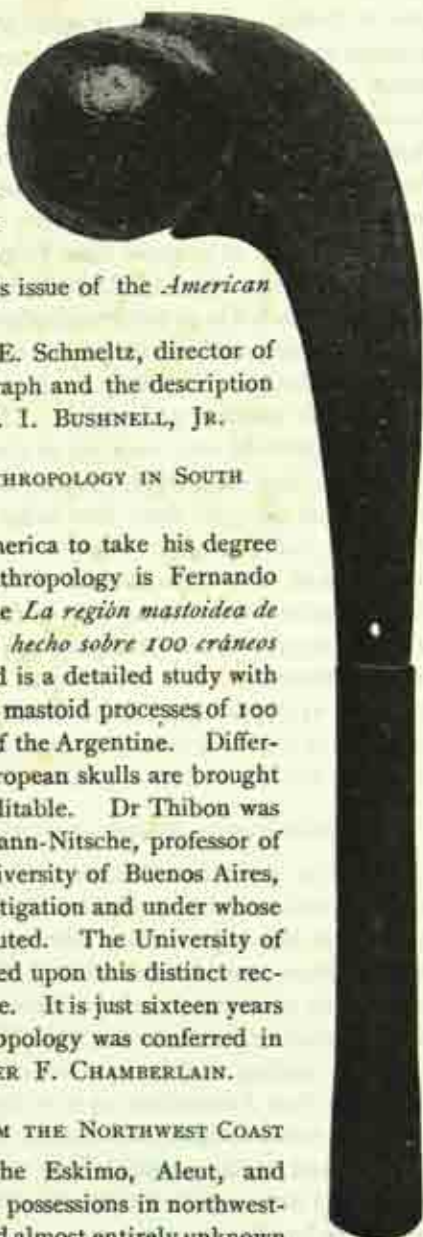


FIG. 89.—Old North American Club in the Leiden Museum.

fessor Th. Volkov, who is in charge of the Museum, is engaged in studying the material and in preparing an account of it, which will probably appear toward the close of the year as the first purely scientific publication of the Alexander Museum. Professor Volkov states that the collection is a remarkable one, and having been collected at a period when the tribes of the Russian Possessions were practically unmodified, it possesses great ethnological importance.

WALTER HOUGH.

ANTHROPOLOGIC MISCELLANEA

Pan-American Scientific Congress.— In accordance with the resolutions of the Third Latin American Scientific Congress of Rio de Janeiro, a Fourth Scientific Congress (First Pan-American) will meet in Santiago, from December 25, 1908, until January 5, 1909, under the auspices of the Government of Chile. Congress has made an appropriation of \$35,000 to pay the expenses of a delegation from the United States, of which body Mr W. H. Holmes, of the Bureau of American Ethnology, has been appointed a member. Of the general topics to be considered by the Congress, the Third Section is to be devoted to "Natural, anthropological, and ethnological sciences," divided into the following themes:

GENERAL THEMES

1. Concerning the antiquity of the American aborigines according to geologic and anatomic investigations.
2. The classification and geographic distribution of American races and sub-races.
3. Concerning the origin of American culture and civilization.
4. Concerning the social and moral organization of the American aborigines.
5. Did the troglodyte or the cave dweller exist in Chile or in other tribes of America?
6. Magic and religious practices (including ideas concerning death and of the future life).
7. Concerning animism among the American tribes.
8. Manner of communicating ideas by means of signs, articulate language, hieroglyphics and writing (mnemotechny).
9. Comparative study concerning the origin, development, and geographic distribution of the principal arts or industries, with their applications.
10. What was the relationship between the Araucanos and the neighboring tribes?

SPECIAL THEMES

1. Influence of Peruvian domination in Chile.
2. Metal and stone utensils of the aborigines.
3. Animals and plants used by the aborigines of Chile.
4. Caves in Chile.
5. Writings and drawings of the ancient Chileans.
6. Kjoekemöddings (kitchen middens or leavings on the coast of Chile).

7. Religious beliefs of the Chilean aborigines.
8. Chilean pictures and engravings: hills, caves, stones, walls, etc.
9. Concerning the fabrics of the Araucanian Indians.
10. Concerning the origin of metal earrings used at the present time by the women of the lower classes of the Chilean people.
11. Concerning navigation among the indigenous tribes of Chile: its origin and development.
12. Inca ornamentation described according to the archeological objects now in our National Museum.
13. Study of the pre-hispanic necropolis of Calama, department of Antofagasta. Ditto of that of Antofagasta of the Sierra (Atacama) and of Punta Pichalo.
14. Description of utensils of the paleolithic and neolithic epoch found in Chilean territory (National Museum).
15. The ethnographic and linguistic provinces of Chile.
16. Concerning Chilean folklore.
17. Features of primitive animism in the lower classes of the Chilean people (superstitions, etc.).
18. A complete biography [bibliography?] of anthropology of Chile.

The Seventh Section, that of Social Sciences, will be devoted, among others, to the following themes:

AMERICAN HISTORY

PREHISTORIC EPOCH

1. Origin of the American peoples. Their successive migrations.
2. Development of the primitive American civilizations, chiefly those of Mexico and Peru. Their influence on the colonial epoch.
3. Comparative study of the aboriginal languages of America and the Asiatic tongues.

COLONIAL EPOCH

1. Influence of the American colonies on the foreign policy and the economic development of the European nations. To what extent did the conquest of the New World engender conflicts and rivalries among those nations and disturb their political equilibrium?
2. Historical criticism of the methods of colonial expansion of the European nations in America.
3. Historical criticism of the colonial dominion of the European nations on the American Continent, especially from an economic standpoint. Comparison of the English, French, Spanish, Portuguese, and Dutch colonial systems.
4. Comparisons of the system of colonization employed by the European nations during the sixteenth century in America, and the system which they

have subsequently employed, especially during the course of the nineteenth century, in Asia, Africa, and Oceanica.

5. Ethical composition and economic and social organization of the American colonies, as compared with Europe. Importance of this factor in the development of the civilization of our continent.

6. Social, political, and economic influence of the mother countries over the American colonies.

7. Operation of the institutions of these mother countries in the colonies. Modifications which they underwent and chief causes thereof.

8. Special institutions which the mother countries created for the colonies of the New World. Their object and result.

9. Factors which contributed toward the formation and development of the colonial mind and of the American character.

10. Picture of the colonial epoch. Life and customs. Wherein they resembled and wherein they differed from the mother countries.

EPOCH OF EMANCIPATION

1. Causes of the emancipation movement in the colonies of America. Comparison of the causes which led to the independence of the English colonies and those which led to the emancipation of the Latin-American colonies.

2. Degree of preparedness of the American colonies for independent existence.

3. Influence of the Napoleonic wars and of their political results on some military leaders of the emancipation movement.

4. Mental characteristics of the first American statesmen. Monarchical tendencies in some of them.

5. Reasons why the republican and democratic organization has predominated in the American nations.

6. Explanation why the English colonies formed a single nation upon becoming independent, while the Latin-American colonies were unable to form a federation or even a confederation.

EPOCH OF THE REPUBLIC

1. Significance of the struggles for independence in the formation of the national character of the American nations.

2. Influence of the civilization of Europe on that of America.

3. Since gaining its independence, to what extent has America been socially and politically different from Europe, and to what extent has it come to have a civilization, interests, and problems differing from those of Europe.

4. The political, economic, and social development of this continent. Institutions, government, administration, condition of the people, property, culture, sciences, arts, philosophy, political ideals.

5. Ethnographic composition and geographical position of the American countries as factors in the development of their civilization.

6. Influence which the expansion of the United States has had on the growth of its own civilization.

7. Movements toward union and federation in Latin America: their causes and effects.

8. Should the civilization of America be studied and expounded from the same historical standpoint as that of the Old World? What method should be followed in writing the history of the New World in order to bring out the peculiar features of its civilization and show the problems of every kind with which it has to deal?

9. Sources of American history. Historical bibliography and literature.

In addition to the foregoing, and also under the section of Social Sciences, the following topics are included: Public international law, Conventional international law, Diplomatic history, International policy, Political economy, Social economy, Criminology, Police, Literature and fine arts, American universities.

The officers of the committee on organization are: Honorary President, Marcial Martinez; President, Valentin Letelier; Vice-presidents, Manuel Egidio Ballesteros and Miguel Cruchaga; General Secretary, Eduardo Poirier; Treasurer, Octavio Maira.

For a copy of the "First Bulletin," issued May 28 in behalf of the Congress, those interested should address the Director of the Bureau of American Republics, Washington, D. C.

The name "Kentucky."—There appears nothing in support of the popular meaning, the "Dark and Bloody Ground," usually assigned to the name "Kentucky." From *A History of the Mississippi Valley*, by Spears and Clark (1903), it is learned that a leading Cherokee chief, Oconostota, about 1775, spoke of the Kentucky region as a "dark and bloody ground."

The first known use of the name Kentucky is under the form "Cantucky" in a deposition of Alexander Maginty before William Allen, chief justice of Pennsylvania, October 12, 1753 (*Colonial Records of Pennsylvania*, v, 663, 1851). A portion of the deposition is as follows: "Being on their Return from Trading with the Cuttawas, a nation who live in the Territories of Carolina, were on the Twenty-Sixth Day of January last attacked and taken Prisoners by a company of Coghawagos, or French Praying Indians, from the River Saint Lawrence, being in Number Seventy (with whom was one white man called Philip, a Low Dutchman), at a Place about Twenty-Five Miles from the Blue Lick Town, and on the South Bank of Cantucky

River, which empties itself into Allegeny River about Two Hundred Miles below the Lower Shawanese Town." But in Maginty's petition to the Pennsylvania Assembly (*Assembly Journal of Votes and Proceedings* for 1753, October 16, p. 272), the form "Kantucqui" is applied to a river which is described as a western branch of the Ohio. In Article III of the Treaty of Greenville, 1795, the river is described as the "Cuttawa or Kentucky"; on Hutchins' Map, 1778, and in Morse's *Gazetteer of North America*, 1798, the Kentucky river "is sometimes called Cuttawa" (p. 260). This river appears on the Walpole Grant of Vandalia, 1773, as the "Louisa Catawba, or Cuttawa." But in the *Journal of Christopher Gist* the name "Great Cuttawa River" evidently means the Cherokee river, now the Tennessee; and Hendrick Aupaumut in his interesting Narrative in *Memoirs of the Historical Society of Pennsylvania* (II, 1827), mentions the fact that in 1791 "three of Kuttoohwauw Nation or Cherekes arrived at the Forks" or Auglaize on the Miami river, and on page 128 of the same publication he writes "Kuttoohwoh, or Cherekes."

Several years ago I reached the conclusion that the term "Kentucky" was derived from the Choctaw *kantak*, or a close cognate thereof (with the suffix of the absolute case -i), signifying "china brier, or china-root" (*Smilax pseudo-china*), from the roots of which the Indians made bread, a jelly, and hot cakes or fritters. William Bartram, in his *Travels* (p. 239, 1792), describes the Indian method of preparing this tuber for food. He writes: "They chop the roots in pieces, which are afterwards well pounded in a wooden mortar, then being mixed with clean water, in a tray or trough, they strain it through baskets; the sediment, which settles to the bottom of the second vessel, is afterwards dried in the open air, and is then a very fine reddish flour or meal; a small quantity of this mixed with warm water and sweetened with honey, when cool, becomes a beautiful, delicious jelly, very nourishing and wholesome. They also mix it with fine corn flour, which being fried in fresh bear's oil makes very good hot cakes or fritters."

John Filson (*Description, Settlement and Present State of Kentucky*, 1784, in Imlay's *Topographical Description of the Western Territory of North America*, 1793) says that in 1767 John Finley and some others "fortunately travelled over the fertile region, now called Kentucky, then but known to the Indians, by the name of the Dark and Bloody Ground, and sometimes the Middle Ground." But on Evans' *Map of the Middle British Colonies in America*, edition of 1755, the legend "Kentucke river," is found, showing, with Maginty's deposition cited above, its early use.

From the Memorandum Book of Colonel William Preston, cited by Speed in *Filson Club Publications*, No. 2, 1886, it is learned that the Miami Indian name for the Kentucky river was *Milewakemecepewe*, but no definition of it is given. John Johnston, United States Agent of Indian Affairs at Piqua, Ohio, in a letter to Caleb Atwater, June 17, 1819, wrote that "Kentucky is a Shawnoese word, and signifies, at the head of a River," but without an analysis. In so far as mere approximation of sounds and a general applicability to the situation may warrant, there appears no great difficulty in deriving "Kentucky" from the common Iroquois *Kentak* or *Kentakowa*, "On the meadow," and "On the large meadow," but in the lack of historical evidence directly connecting the two terms only a possible relation may be assumed. But, conversely, there are certain considerations which render improbable the identification of "Kentucky" with the Iroquois terms cited above. First, the name was apparently quite unknown to the French writers and explorers previous to the middle of the 18th century. LaSalle and Gallinée (1669) and Celoron (1749) who explored the Ohio river and some of its northern affluents and who were also well acquainted with the Iroquois tribes, did not, so far as the writer can learn, obtain a name applied by the Iroquois to what was afterward known as "Kentucky." It seems incredible that the French would have remained ignorant of the name had the Iroquois been in the habit of applying their own term *Kentak*, or *Kentakowa*, to the region in which the French were then vitally interested, although the Iroquois were evidently at that period quite familiar with this region, for at the time of the visit of LaSalle and Gallinée to them they had many Shawnee prisoners. Second, in the deed of the lands on the Kentucky river to Henderson, made in 1775 by the Cherokee, one of the landmarks is therein described as "the mouth of Kentucky, Chenoca, or what by the English is called Louisa river," thus showing that the name Kentucky had not as yet become the common name of that river. Moreover, Chenoca, or Chenoa as it is sometimes written, was the Cherokee name of the region on the river commonly called Kentucky, and is derived from the Cherokee vocable denoting "cedar," and as a locative signifying "at the cedar place," or "at the cedar country." This derivation is confirmed by the line "To wild Kentucky's cedar-shadowed waves," employed by Daniel Bryan in recounting the adventures of Daniel Boone, in the *Mountain Muse*, 1813. Specifically, the name Chenoca appears to have been applied to "all the land south of Kentucky to the Cumberland river" (Smith, *History of Kentucky*, 1892).

The expression, "The Dark and Bloody Ground," applied, as a conjectured translation of the term "Kentucky," to the region along the river of this name, has no known relation to the latter word. The following facts suggest the true derivation of the expression first cited above. From Felix Walker's narrative of his trip with Daniel Boone in 1775 (*DeBow's Review*, Feb. 1854), the following is learned of Walker and his companion; namely, that they proceeded to Watauga river, a tributary of the Holston, to the residence of Col. Charles Robertson, "where a treaty was held by Colonel Richard Henderson and his associates, with the Cherokee tribe of Indians, for the purchase" of the country "then called the Bloody Ground, so named from the continual wars and quarrels of the hunting parties of Indians of different tribes who all claimed the ground as their own" (p. 161); that the Dragging Canoe, one of the Over-hill Cherokee chiefs, said at this treaty that there was "a dark cloud" over the country sold, declaring that though he would vouch that the Cherokee would not injure Henderson and his people, he feared the hostility of "the Northern Indians," meaning probably the Iroquois, the Illinois, or the Shawnee and their neighbors; that the distinguished Cherokee chief "Atticulaculla," then about 90 years of age, "a very small man, and so lean and light-habited, that I scarcely believe he would have exceeded more in weight than a pound for each year of his life," confidently asserted that he could vindicate the "rightful claims of his people to the Bloody Ground, then in treaty to be sold to the white people."

The deposition of one Sam Wilson (*Calendar of Virginia State Papers*, 1, 292) in the case of *Virginia vs. Henderson* shows that at the Watauga treaty in 1775 there was bitter opposition by the Cherokee to the inclusion of so much land in the demands of the Transylvania Company, and that Dragging Canoe delivered an address in which, stamping his foot violently on the earth, he exclaimed, "This is *Bloody Ground*," and then pausing and "pointing his finger ominously to the northwest," significantly added, "and *Dark and Difficult to Settle!*" The foregoing data from the deposition of Wilson and from the narrative of Walker supply presumptive evidence that the phrase "Dark and Bloody Ground" is apparently not a translation of the name "Kentucky," but is rather a brief embodiment of well-known epithets frequently applied to that country by the Cherokee at the Watauga treaty and earlier.

J. N. B. HEWITT.

Ancient Works on the Muskingum.—In Volume I, No. 9, of *The Columbian Magazine*, published in Philadelphia in May 1787, appeared

an article by Capt. Jonathan Heart entitled "Description and Plan of some Remains of Ancient Works on the Muskingum." This article, which does not appear to have been known to many of the later writers on the subject, has now become quite scarce. Moreover, it is thought to have been the first description and plan of an American earthwork ever published, for which reason, added to its scarcity, it is deemed worthy of being reprinted at the present time.

The plan (pl. xvii) is an exact reproduction of the plate in *The Columbian Magazine*, with the exception that beneath the last four words of the inscription occurs the legend: "By Jon^s Heart Capt^s 1st Amer^s Reg^t." The description follows:

Account of some Remains of ancient Works, on the Muskingum, with a Plan of these Works. By J. HEART, Capt. in the first American regiment.

The inclosed is a plan of the remains of some ancient works, situate on the east side of the Muskingum, at about half a mile from its junction with the river Ohio. They consist of No. 1. which, for distinction's sake, we call the town. No. 2. the fortification, and No. 3. the pyramid, and some detached works.

The town is about one quarter of a mile square, surrounded with a line of walls of earth, from six to ten feet high, and from twenty to forty feet thick, the walls on each side are divided into four nearly equal parts, by three openings in each, directly opposite to each other, and openings also at each angle of the town; the openings in the center of the walls are the largest, particularly that on the side next to the Muskingum, from which opening a covered way, 120 feet wide, leads by a gradual descent 120 yards to the low grounds, where it is probable the Muskingum then run — this covered way is guarded on each side with walls, commencing at 20 yards distance from the walls of the town, and gradually become more elevated as the covert way descends, and near their termination towards the Muskingum are 30 feet high, being nearly on a plane with the walls of the town; the covert way is sloping from the center towards the walls, like the pavement of a street, as tho' there might have been canals all joining the walls, to carry the water from the town — at the north-west corner of the town is an oblong mount, 74 by 44 yards square, and six feet high, the top a perfect plane, a regular ascent leads to the top of it, at the center of each side, directly opposite each other, and in a line with the opposite openings in the walls of the opposite sides of the town — near the south-wall of the town is a similar mount, 50 by 40 yards square, with this difference only, that instead of an ascent to go up, on the side next the wall of the town, is a hollow way 10 feet wide, leading 20 feet towards the center of the mount, and then a gradual ascent to the plane of the top — a little back is a small circular mount, with four small caves at equal distances and opposite each other — at the south-east corner is also an oblong mount, 36 by 18

yards, but less conspicuous — at the south-west corner is a semi-circular parapet, guarding the opening with a circular mount on the parapet, opposite the angle of the town.

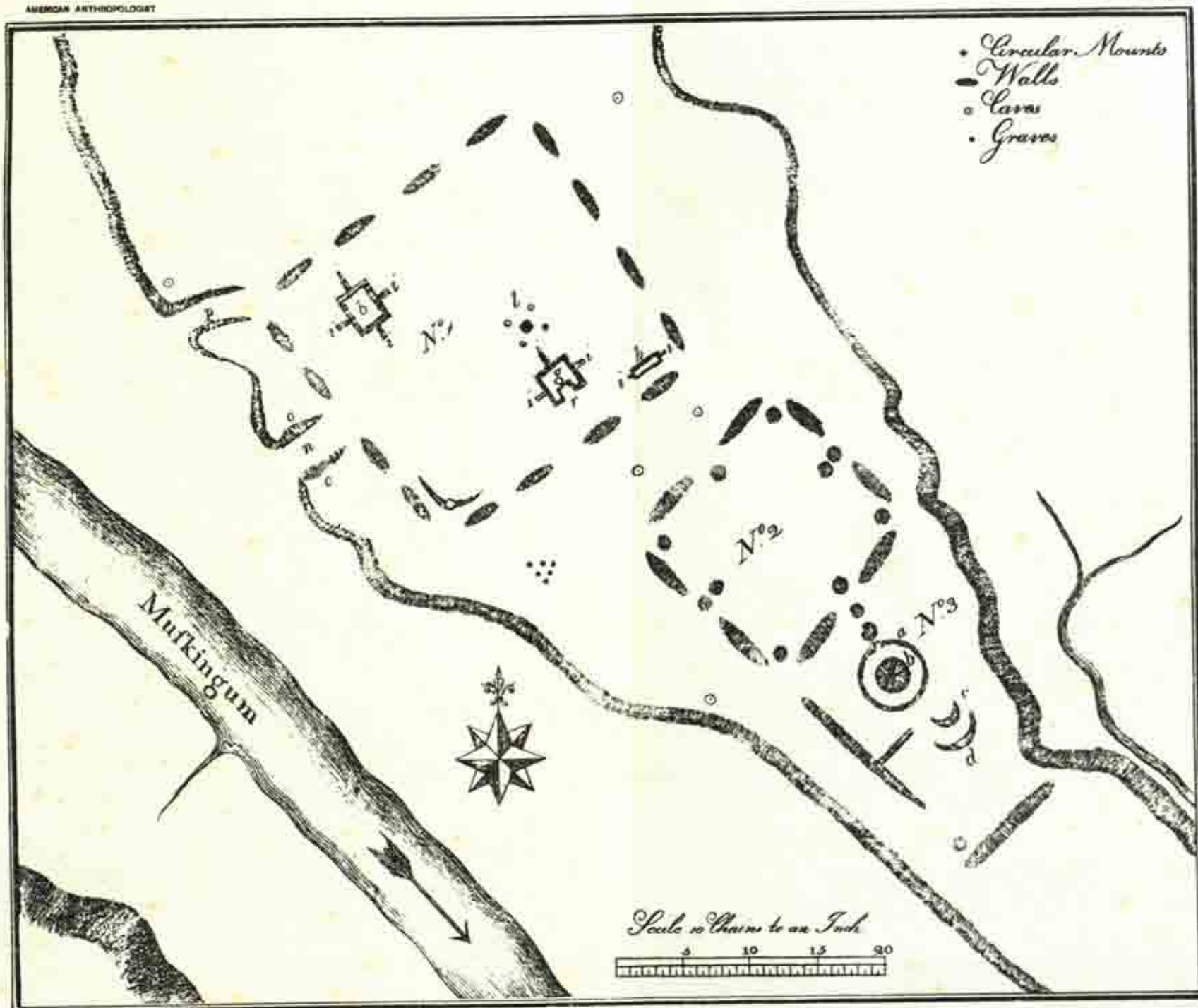
No. 2. The fortifications are also nearly square, with openings only in the center of the opposite walls, and at the four angles, each opening is guarded with a circular mount 10 feet high, the openings on the east and west sides of the fortifications have two of those mounts back of each other — between the town and fortifications are some large caves, [?] mounts, graves, &c.

No. 3. The pyramid is a circular mount, a little oval, 50 feet high, 390 in circumference, surrounded with a ditch 5 feet deep, and 15 wide, a parapet outwards, 759 feet in circumference, an opening in the parapet towards the fortifications. There are other wall, mounts and caves less conspicuous, and perhaps independent of those particularly mentioned, [which] might be considered as works of nature, but in connection with other parts are proof of art and design. The trees growing on the pyramid and different parts of the works are large, in some instances there are white oak trees of near four feet diameter, growing from a rise of earth, evidently made by the decay of a more antient growth — the soil as well as the timber are the same in appearance in every part of the works, as in the common wilderness — The graves mentioned between the town and fortifications are small mounts of earth, from some of which human bones have been taken — in one were found bones in the natural position of a man, buried nearly east and west, and a quantity of ising-glass [?] on his breast — in the other graves the bones were irregular, some calcined by fire, others only burnt to a certain degree, as to render them more durable; in others the mouldered bones retained their shape without any substance, others were partly rotten, and partly the remains of decayed bones — in most of the graves were found stones evidently burnt, pieces of charcoal, Indian arrows, and pieces of earthen ware, which appear to be a composition of shells and a cement.

Nothing is yet found which can lead to a discovery, when, or by whom those works were constructed, or the design of the different parts; the accounts of the Indians are irregular and inconsistent, and carry more fable than appearance of tradition — but the uniform regularity, and prodigious extent of the works, as well as their former height (if we may calculate from their present appearance, and their probable antiquity) are convincing proofs that they

¹ This and the subsequent references to *caves* probably refer to caches used by the Indians for the storage and preservation of grain, skins, etc. If this supposition is correct it is evidence of the site having recently been occupied. But the tribe by which the site was occupied need not necessarily have had any connection with the builders of the works. — B.

² Sheets of "ising-glass," or mica, have been found throughout the Ohio valley, in contact with burials. Often they evidently served as mirrors, while again pieces were cut into various designs or perforated and used as ornaments. This, however, is probably the earliest reference to mica having been discovered in graves. — B.



Plan of the Remains of some Ancient Works on the Muskingum.

were constructed by a people not only numerous, but well acquainted with the art of fortification and defence, and added a beautiful uniformity to usefulness in the construction of every part.

Explanation of the Plate.

No. 1. The town *b*, *g*, *h*, mounts of earth *i*, *i*, *i*, &c., ascents leading to the top of the mounts, *r*, a hollow way, leading also to the top of the mount, *l*, a circular mount with four caves, *m*, a semicircular parapet, with a circular mount at *m*, *p*, a covered way 120 feet wide, 120 yards long, with walls 30 feet high at *o*, *o-n*, a covered way.

No. 2. The fortifications.

No. 3. The pyramid, *a*, the parapet and ditch 759 feet in circumference, 5 feet deep, and 15 feet wide, with an opening at *r*, — *b*, a circular mount 50 feet high, and 390 feet in circumference; *c*, a semicircular redoubt, *d*, a ditch and parapet.

The area occupied by this group of works later became the site of the town of Marietta, Washington county, Ohio, and through subsequent writers they became known as "the Marietta works."

A map of the area, drawn from a survey made by Charles Whittlesey in 1837, was reproduced as plate xxvi by Squier and Davis, in *Ancient Monuments of the Mississippi Valley*, 1847, while a general view of the works, from the northeast, appears as the frontispiece to the same volume. The more important differences between the two maps may be briefly stated.

In the Whittlesey survey a rectangular mound is shown in the northern angle of the larger enclosure (Heart's No. 1), which does not appear on Heart's map. But on Whittlesey's map the two crescent-shaped embankments represented on Heart's map as *d*, southeast of the large mound, are not shown, nor are the graves that occurred between the two enclosures.

A bibliography of "the Marietta works" may be found in the *Catalogue of Prehistoric Works*, by Dr Cyrus Thomas, Washington, 1891, p. 188.

DAVID I. BUSHNELL, JR.

An Interesting Kentucky Pipe and a Unique English Medal of the Cromwellian Period. — The United States National Museum possesses what is probably the most interesting "great pipe" ever found in America. Two photographic views of it are here given (fig. 90), and also a sectional drawing of the bowl and stem perforations, showing the striae made by the sand used in drilling (fig. 91).

The pipe is from Lexington, Kentucky, and was collected by Mr J. Peter. It is labeled "Kentucky University," but unfortunately there is no information regarding its history. It is made of steatite; it weighs five pounds and twelve ounces, stands nine inches high, is ten inches in

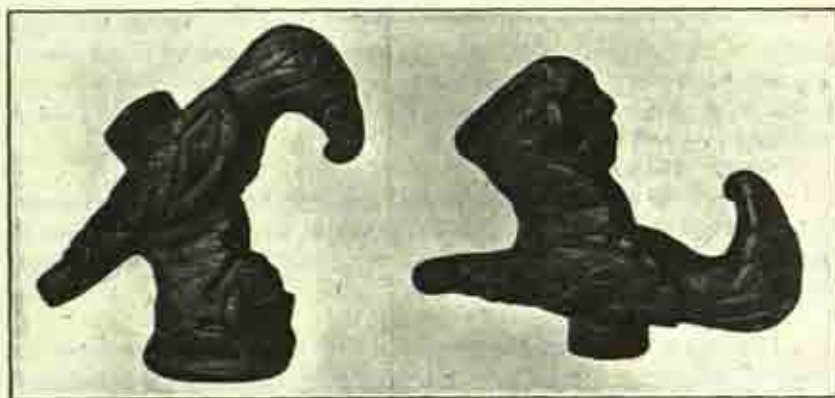


FIG. 90. — "Great pipe" of steatite from Kentucky.

greatest length, and two and a half inches thick from side to side. Among known pipes the type is unique. It represents a large bird, with strongly curved beak, standing in a natural position upon a pedestal. Inverted, the pipe exhibits the head and neck of a man. The surface is highly polished, and on it are incised lines indicating the bird's wing and tail

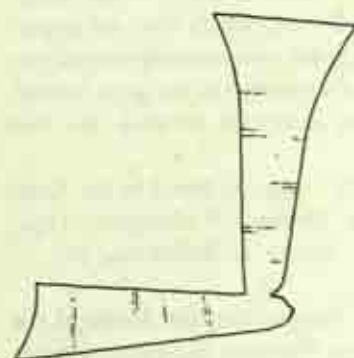


FIG. 91. — Section of the bowl and stem perforations of the "great pipe."

point of intersection.

feathers, as well as lines on the man's face which were probably intended to represent paint or tattoo marks. The eyes of both the bird and the man are also indicated by incised lines. Both the bowl of the pipe and the stem hole are elongate cone-shaped openings which intersect at a right angle to each other. The opening in the bowl becomes larger toward the mouth, which measures an inch and three-eighths in diameter, whereas the stem opening measures only three-fourths of an inch. Both perforations decrease gradually in diameter as they approach the

From the point of view of the aborigines this pipe must have been of

great importance and value. It is well known that among many of the Indian tribes there were "great pipes" that were used only on the most solemn occasions, such as the making of a treaty with the whites or with a neighboring tribe, or in other ceremonies of civil or religious importance. The giving of a "great pipe" is recorded by Rev. William M. Beauchamp,¹ who refers to such a gift from Sir William Johnson to the Iroquois in 1756. This pipe is said to have been the largest in America, and it was designed to be hung up in the council house at Onondaga, New York.

Though the pipe here described is so rudely conventional, the type is believed to indicate European influence. This belief is strengthened by the medal herein illustrated (fig. 92), which exhibits on both sides an arrangement of heads similar to that of the pipe. This medal is described in a recent publication of the British Museum.² The specimen owned by



FIG. 92. — Cromwellian medal of 1650.

that institution is of lead and is said to be unique, but it is of a type common at the period. The description says: "Cromwell and Fairfax Satirical Medal, 1650. A Dutch satirical medal referring to the retirement of Fairfax from the chief command of the Parliamentary forces, June 25, 1650, and to the appointment of Cromwell as Captain-General on the following day. The satirical inscriptions point out Fairfax as the dupe of Cromwell's superior cunning, and also infer that Cromwell had outwitted Fairfax by persuading him to resign the chief-generalship of the army which he himself desired and did indeed succeed to. This type is taken from the well-known satirical medal of a Pope's head with that of the Devil and a Cardinal's head with that of a fool."

¹ *Bull.* 78, *New York State Museum*, 1905, p. 305.

² *Medallist Illustrations of Great Britain and Ireland*, London, 1905.

The publication cited does not refer to the existence of such a medal in silver. The one here illustrated is of the latter metal, however. It was brought to America from England in 1792.

JOSEPH D. MCGUIRE.

The Preservation of Water-soaked Archeological Objects of Wood.

—The difficulty of preserving the forms of water-soaked archeological objects of wood recovered from bogs and the muddy beds of rivers and lakes is well known to most curators. An examination of the collections from the Swiss lakes, for example, shows most of the wooden specimens shrunk to such an extent as to give but a faint idea of their original forms. In view of the serious loss to American students caused by shrinkage of the remarkable wood carvings collected by Cushing from the sites of the Key-dwellers of the gulf coast of Florida,¹ a record of the process followed by the writer in the successful preservation of a few objects of this class may be of interest.

It is of primary importance that such specimens *should not be allowed to dry before treatment*. When taken from the mud they should be cleaned under water, wrapped in wet cotton batting, and kept in water or, preferably, in water to which about 10 per cent. of alcohol has been added. For transportation they may be packed in wet cotton batting and placed in small tin cans nearly filled with the above mixture of alcohol and water, and hermetically sealed.

The purpose of subsequent treatment is to replace the water in the specimen with a non-volatile rigid substance which will prevent contraction. Hard paraffin was used for this purpose with very satisfactory results. The process of replacement is as follows:

The specimen is immersed in three or four baths of alcohol and water, the first being about 25 per cent. and the others approximately 50 per cent., 75 per cent., and 95 per cent. alcohol. It is then transferred to absolute alcohol. It should remain in each bath about two days, or longer for large objects. By this treatment the water in the wood is gradually replaced by alcohol. The specimen is now immersed in xylol (xylene), an inflammable preparation from coal-tar. After a day or two it is transferred to fresh xylol where it may remain for about the same length of time or until the xylol has wholly replaced the alcohol. The object is now suspended in melted paraffin kept hot by a boiling water bath. For specimens of medium size it usually requires four to six hours

¹ A Preliminary Report on the Exploration of Ancient Key-Dweller Remains on the Gulf Coast of Florida, *Proc. Amer. Philos. Soc.*, Phila., XXXV, no. 153.

for the paraffin to replace the xylol which is absorbed or thrown off in gas that rises to the surface in bubbles. The specimen should remain immersed for a while after the bubbles cease to rise. The paraffin may partially cool before removing the object treated, which may be dipped once or twice in the paraffin as it cools. It is essential that the quantity of each bath should be several times greater than the amount required to cover the specimen, and also that the final bath of both alcohol and of xylol be pure, otherwise enough water will remain to seriously interfere with the absorption of paraffin and the wood will shrink in proportion to the amount of water it contains. Paraffin contracts somewhat in cooling, but not enough to materially alter the form of the specimen.

The above process is practically the same as is followed in preparing biological sections. After a few days the exterior coating of paraffin may be removed with benzine applied with a flat camel's hair brush, when the surface of the wood will appear in its natural color and texture. This treatment, if carefully followed, does not injure painted surfaces. Care must be taken not to allow the specimen to soak in benzine, as too much paraffin will be dissolved.

The few experiments by the writer in restoring the forms of wooden specimens in *old* collections from the Swiss lakes have been unsuccessful, although a few recently dried objects of this class were fully restored by immersion in a 3 per cent. solution of caustic potash in water.¹ Unfortunately they shrank again when the potash solution was replaced by water or alcohol. It is hoped that further experiments along this line may prove as successful as the treatment described above of specimens freshly taken from the water.

CHARLES C. WILLOUGHBY.

PEABODY MUSEUM, HARVARD UNIVERSITY,
CAMBRIDGE, MASS.

The American Museum of Natural History will conduct anthropological researches in several fields during the summer. Mr Harlan I. Smith will continue his studies in northeastern Wyoming. Mr Smith's aim is to begin the location of fields for future detailed coöperative exploration by the museums of the country in this middle-ground of a vast neglected area for archeological exploration, extending from the Gulf to the Arctic, and including all of Nevada, Idaho, Wyoming, Montana, the greater part of Texas, Oklahoma, Kansas, Nebraska, the Dakotas, Colorado, Utah, and the British Possessions. Mr Smith has repeatedly called

¹ *American Anthropologist*, 1904, VI, 3.

attention to the fact that from this region there is little archeological material, and regarding it hardly any archeological literature, although it is larger than the remaining part of North America. The summer's work may extend a short distance into Dakota or Montana, if not into both. Dr R. H. Lowie left New York in May for the Mackenzie River region north of Lake Athabasca, where he will begin anthropological studies among the Athabaskan tribes, and during the latter part of the season he will continue work already begun among the Northern Plains Indians of the United States. Mr Alanson Skinner will collect anthropological data and specimens in the James Bay region of Canada, and particularly among the Indian tribes of Labrador. Mr Gilbert L. Wilson takes up anthropological work among the Mandan and Hidatsa Indians of North Dakota. Dr J. R. Walker is devoting his time to the study of special points in the ethnology of the Dakota Indians, chiefly on Pine Ridge reservation, and Prof. Howard Richards is in China gathering anthropological material. Dr Hugh M. Smith, of Washington, D. C., is doing volunteer collecting of anthropological material in the Philippine islands for the Museum in connection with the biological survey of the group which has been undertaken by the United States Bureau of Fisheries. Capt. George Comer is continuing his valuable work among the Eskimo of the Hudson Bay region, whence he has already brought the Museum much important material. Mr V. Stefánsson left New York about the middle of April for an expedition down the Mackenzie river to its mouth and eastward along the coast of the Arctic ocean, for the purpose of studying the ethnology of the Eskimo tribes inhabiting the region. Dr C. C. Vinton has again taken up collecting in Korea, giving his chief attention to surviving ancient industries. Mr Herbert J. Spinden is investigating the ethnology of the Nez Percé Indians. Mr George J. Geis is gathering specimens and general ethnological data among the primitive Kachins of Upper Burma. Under the auspices of the Congo Free State, ethnological and anthropological collections are being made in various parts of the Congo basin.

John Hitz, who died suddenly in Washington, D. C., March 28, 1908, was born at Davos, Switzerland, September 14, 1828. He was the son of John and Anna (Kohler) Hitz. When three years of age he came to this country with his father's family, which settled in Washington, where he resided until his death. He received a liberal education in private schools and colleges in Maryland and Pennsylvania, and for several years was engaged in teaching. From 1864 to 1882 he was a trustee of public academic and industrial schools in Washington. In 1864 he was

appointed consul general of Switzerland in Washington, to succeed his father, and held that office for seventeen years, during which time he was largely instrumental in carrying into effect the first International Postal Order Exchange between the United States and Switzerland, and he presented plans for and urged the introduction of universal postage stamps. He also urged the utilization of the mountain streams of Switzerland for generating electric power for railways, and he was publicly credited by the engineer of the Rigi Mountain Railway, N. Riggensbach, as having originated the idea for the construction of railways of this character in that country. Mr Hitz's chief interest was always in the promotion of educational and philanthropic undertakings. He was a member of the Anthropological Society of Washington, American Association for the Advancement of Science, the National Education Association, the American National Red Cross Society, the National Geographic Society, the Society of American Florists, the Society for Philosophical Inquiry, the Swiss Benevolent Society, and other American and foreign organizations. For Red Cross work rendered in New Orleans in 1884 he was awarded a silver medal by the Empress Augusta of Germany, and in 1878 a medal was presented to him for his services as Swiss commissioner to the International Exposition in Philadelphia. He was an accomplished musician, and often took part in public musical performances. He contributed many articles of value to educational periodicals, wrote a number of social science reports, and wrote and edited many papers relating to the deaf, including an article on Miss Keller published in Volume 8, No. 2, of this journal. He was a most intimate and helpful friend of Miss Helen Keller and rendered her much aid in the preparation of her books for publication. In 1890, when Dr Alexander Graham Bell was arranging for the establishment of the Volta Bureau in Washington, designed for the especial purpose of increasing and diffusing knowledge relating to the deaf, he selected Mr Hitz as superintendent and placed him in charge of all plans for organizing the work. Mr Hitz really created the Volta Bureau and remained in charge of it until his death. He was a man of liberal education, broad culture, fine artistic taste, generous and kindly disposition, and high Christian character. He was a clear, forcible writer, and the records of his life work are extensive and valuable.

GEORGE C. MAYNARD.

Recent Exploration of Caverns in the Ozarks. — Early in May, the Department of Archeology of Phillips Academy, Andover, Massachusetts, sent an expedition to Benton and Madison counties, Arkansas, to explore

certain caverns that had been seen by Mr E. H. Jacobs, who had been sent on a preliminary trip through the White river country. Mr Jacobs reported the existence of more than thirty caverns within an area covering approximately eighty by forty miles.

Dr Charles Peabody, the director, and Mr W. K. Moorehead, the curator of the department, spent five weeks in the field. From Fayetteville, Arkansas, they examined the country southward and eastward through a region never before visited by archeologists. Four caverns were explored, one of them in limestone and the rest in sandstone. The largest, Kelley Cavern, is about seventy meters in extent, with an overhang of thirty meters, while the bluff is about fifteen meters high. The ashes in this cavern ranged from one to three meters in depth, requiring a force of from twelve to fifteen men for more than two weeks to remove them.

The character of the cave material differs essentially from that found on the surrounding village sites. Shallow metates were numerous in the ashes of the caverns, thirty-seven having been found in Kelley Cavern alone. The extreme scarcity of certain other artifacts in the region deserves mention. Only one or two grooved axes have been found; there are no celts, no slate ornaments or problematical forms, no grooved hammers, no hematite implements, none of the spades and hoes common in the East and North, and only two pipes have been discovered in the entire region; but everywhere in the fields are great quantities of chips, spawls, hammerstones, knives, and projectile points — larger numbers indeed than either Dr Peabody or Mr Moorehead ever saw in any other part of the United States. The collection brought to Andover numbers about 1200 specimens.

The country is difficult of access, most of the caverns lying twenty to thirty miles from the nearest railway. The elevation ranges from 1300 to 1600 or 1700 feet. Judging from reports brought in by mountaineers there are many caverns in this region. These will be explored by Phillips Academy from time to time, permission having been obtained from the company which controls upward of 30,000 acres of land in the cavern country.

Remarks on a Footnote to Mr R. H. Mathews' Recent Paper. —

Mr R. H. Mathews asserts in his paper on Marriage and Descent in the Arranda, printed in the last issue of this magazine (page 98, note 4), that in my *Kinship and Marriage in Australia* I have copied extensively from an old map of his and not acknowledged my indebtedness. I did

not, as I shall show, need to copy from him; I did not in fact copy from him; and I did not consult his map in preparing my own. The curious, who wish for proof of this statement, may find it in the following facts:

(1) The tables in my work (pp. 41-50) give the names of more than fifty tribes, not including those of the eight-class organization; Mr Mathews in the paper referred to mentions only twenty. (2) I give the names of more than forty pairs of phratries; Mr Mathews gives but twelve. (3) My two maps show what is also given in my tables, that the boundaries of phratry and class organization are not always the same; Mr Mathews lumps phratries and classes together. These facts alone are sufficient to upset the charge against me. No one who will take the trouble to look at my third map will see much resemblance in it to that of Mr Mathews.

My maps were based on the lists of the tribes given in the tables just mentioned; and, although Mr Mathews suggests a different view, there are few tribes whose location cannot be determined from the maps of Curr (1886), Roth (1898), Spencer and Gillen (1899 and 1904), Dr Howitt (1904), and others.

Perhaps if Mr Mathews had been able to refer to these well-known authorities his map would have been more accurate. As a first attempt his map was a praiseworthy effort, though naturally lacking in detail. That the map of a later writer like myself should bear a general resemblance to his own is not unnatural; but if Mr Mathews wishes to be reputed a person of sound judgment he will refrain from making charges of plagiarism on such ludicrously insufficient grounds.

I may add that in my map II the numbers viii and ix should be reversed.

NORTHCOTE W. THOMAS.

7 COPTIC ST.,
LONDON, W.C.

School of American Archeology.—The Committee on American Archeology of the Archeological Institute of America has established a School of American Archeology with the following regulations:

I. The School of American Archeology is established to conduct the researches of the Institute in the American field and afford opportunities for field work and training to students of archeology.

II. The School will direct the expeditions of the local societies in their respective fields, maintain archeological researches in the various culture areas of the American continent, direct the work of fellows and collaborate with universities and other scientific organizations, both home and foreign, in the advancement of archeological research.

III. The School will afford to students opportunities for field experience and training. No courses will be given which duplicate class instruction offered by the universities. Students will be attached to field parties of the local societies, or to other expeditions under the direction of the School. Classes may be formed to proceed to any point where important archeological work is in progress for field sessions.

IV. The committee on American archeology, consisting of the president and secretary of the Institute and seven other members elected by the council, one each year for a term of seven years, shall be the managing committee of the School; and the director of American archeology, appointed by the committee, shall be its executive officer. The committee is authorized to maintain fellowships, archeological stations, publications, the various kinds of work herein provided for, and to raise funds for the support of the same. Its funds shall be held by the treasurer of the Institute and disbursed by him on the order of the chairman of the managing committee, approved by the president of the Institute.

The managing committee consists of the following: Miss Alice C. Fletcher, chairman; Professor Franz Boas, Mr Charles P. Bowditch, Professor Mitchell Carroll, Dr J. Walter Fewkes, Mrs John Hays Hammond, Professor Francis W. Kelsey, Dr Charles F. Lummis, and Professor F. W. Putnam.

The Colorado Society of the Archeological Institute has commenced the excavation of the Cannonball ruins, in the McElmo drainage, Montezuma county, Colorado. This work is supported jointly by the Institute's School of American Archeology, the State University of Colorado, and the Colorado State Historical Society, and will be conducted under the supervision of the Institute's director of American archeology. The School also announces excavations in Utah, beginning June 1, and in Pajarito Park, New Mexico, beginning August 15. An expedition for the study of the Maya culture in Central America will take the field about December 1. Properly qualified students will be admitted to all these expeditions. Application should be made to the director, Edgar L. Hewett, 1333 F street, N.W., Washington, D. C.

Harvard Anthropological Society.—The Harvard Anthropological Society celebrated its tenth anniversary in May. The club was founded in 1898 mainly through the initiative of the late Dr Frank Russell and Mr Walter S. Andrews. Its object "is the promotion of interest in the study of the natural history of man and of the history of human culture with special reference to its origins and primitive forms and to the general laws of its development."

The society is composed of undergraduates and graduates of Harvard University who are taking or have taken courses offered by the Department of Anthropology. The officers, with the exception of the permanent secretary, are elected from the student body. Meetings open only to members are held every month during the college year, at which time papers are presented and discussed. The society thus furnishes a means of intercourse between the older and younger men which is not possible in any other way.

During the first seven years of the history of the organization two or more public lectures were given under the auspices of the society each year. A different policy has been carried out during the last three years. Two dinners have been held annually with a special guest of honor who has delivered an address. These occasions have proved most profitable as well as enjoyable as many former members of the society have returned.

The society numbers among its honorary members Professor F. W. Putnam, Miss Alice Fletcher, Mr C. P. Bowditch, Professor Franz Boas, and Professor A. C. Haddon. Among the speakers at the meetings of the club have been, in addition to the honorary members, Professor A. M. Lythgoe, Professor George F. Moore, Professor Leo Wiener, Professor A. L. Kroeber, Professor Marshall H. Saville, Mr Stewart Culin, Professor E. H. Nichols, Dr J. M. Bell, Professor John Murdoch, Professor G. H. Chase, and Mr E. B. Drew.

A. M. T.

Sir John Evans, K.C.B., F.R.S., died at his residence, Britwell, Berkhamstead, England, on May 31, in his eighty-fifth year. The son of Rev. Arthur Benoni Evans, D.D., and Anne, daughter of Captain Thomas Dickinson, R.N., he was born at Britwell Court, Bucks, November 17, 1823, and was educated at Market Bosworth School. In 1854 Evans was elected honorary secretary of the Geological Society, which position he held for twenty years. He was treasurer of the Royal Society from 1878 to 1898, and president of many learned bodies, including the Geological Society, 1874-76; Anthropological Institute, 1877-79; Society of Antiquaries, 1885-92; Institute of Chemical Industry, 1892-93; British Association for the Advancement of Science, 1897-98; Midland Institute, 1899, and Egypt Exploration Fund, 1899-1906. He was also a trustee of the British Museum; chairman of the Society of Arts, 1900-01; high sheriff of Herts, 1881; vice-chairman or chairman of the Herts County Council, 1888-1905; chairman of Herts Quarter Sessions, St Albans; chairman of the Lawes Agricultural Trust Committee; correspondent of the Institut de France, and honorary fellow of

Brasenose College, Oxford. Among his publications are: *The Coins of the Ancient Britains*, 1864, Supplement, 1890; and *The Ancient Bronze Implements of Great Britain and Ireland*, 1881. But it was by Evans' *Ancient Stone Implements of Great Britain*, 1872 (second edition, 1897), that he was best known to American students, some at least of whom regard it as the most noteworthy contribution ever made to the subject. Certain it is, this work has become a classic, appreciated no less by American archeologists than by their British confrères. Among Sir John Evans' recreations was the collection of coins and antiquities. He was knighted in 1892 and was thrice married.

John Walter Hastings was born on July 22, 1883, and died April 26, 1908, from injuries received in an accident on that day. He received the degree of A.B. from Harvard in 1905 and A.M. in 1906. In the summer of 1904 he was one of the party of students from the University who, under Dr W. C. Farabee, made a tour on horseback through the Southwest; and in the summer of 1905 he made collections for the Peabody Museum on the western coast of Iceland. In December, 1906, he was appointed ethnologist of the South American Expedition of the Peabody Museum, and accompanied the expedition in that capacity in 1907, during which period the expedition spent considerable time in the Andean plateau of Peru and Bolivia and also, after crossing the Andes at an elevation of 16,500 feet, made explorations which covered nearly two thousand miles on the rivers Madre de Dios, Beni, and Marmoré, and their head waters. In September, 1907, Mr Hastings resigned, and returning to this country, occupied himself with literary work. He was a member of the American Anthropological Association, the Society of the Cincinnati, the American Association for the Advancement of Science, the Harvard Travellers Club, and the Harvard Club of New York.

LOUIS J. DE MILHAU.

Corrections Concerning California Indians.—Owing to my absence in California when my article on *The Distribution and Classification of the Mewan Stock of California*¹ was passing through the press I did not see the proof, and as a consequence several typographic errors crept in. Three of these are of sufficient importance to need correction.

On page 344, line 18, for "*Ko'-ne-u-kon'-ne*" read "*Ko'-ne* or *Kon'-ne*."

On page 353, line 8 from bottom, for "*Tso'-kew po-goot*" read "*Tso-ke-yo-me po-goot*," and add "*Al-lö'k-yo-me po-goot*" as an addi-

¹ *American Anthropologist*, vol. 9, no. 2, pp. 338-357, April-June, 1907.

tional rancheria in Pope valley. On line 13 of the same page add "*Lahl-mok-po-goot*," there having been two rancherias in Middletown valley. This brings the number of villages of the *Tuleyome* up to fifteen.

On page 357, line 4, for "There is *no* doubt," read "There is doubt" — the meaning being completely reversed.

In a report of a meeting of the Anthropological Society of Washington published in the same volume (page 388, line 26), I am made to say that certain songs were sung at intervals of eight days. My statement was that they were sung at intervals *for* eight days.

C. HART MERRIAM.

Philippine Arrow Poisons. — Mr Raymond F. Bacon (*Philippine Journal of Science*, III, no. 1, Feb. 1905) has conducted a series of experiments on Philippine arrow poisons and has found that the sap of *Antiaris toxicaria* Lichen., identical with the Upas tree of Java, is used on blowgun arrows by the Tagbanua of San Antonio bay, near the southern end of Palawan. The tribes of the northern part of Mindoro near Bulalacao extract the sap from this tree for poisoning arrows. Other animal poisons are prepared from fermented pineapple leaves, from *Sunasia Amori Blanco*, *Lophopetalum toxicum* Loher, and from *Strophanthus Cumingii* D.C., but these have not yet been investigated. The Negritos of Bataan province are said to use the bark and sap of two trees, one of which is *Diospyrus canomoi*, and the other a tree called bicag; but the former is only moderately toxic and the latter has not been identified. Mr Bacon has shown that 0.001 of a gram of the antiaris arrow poison will kill 500 grams of animal in 30 minutes, so that one of the Tagbanua blowgun darts bears enough poison to kill from 100 to 250 kilograms of animal in one hour. There is no recovery from the antiaris poison.

WALTER HOUGH.

Preservation of Mesa Verde Cliff Ruins. — In compliance with a request of the Secretary of the Interior, Dr J. Walter Fewkes, of the Bureau of American Ethnology, has gone to the Mesa Verde National Park, in Colorado, to take charge of the excavation and preservation of the cliff-dwellings there. His work for the present will be directed toward the so-called Spruce Tree House, which he will restore, before attempting the preservation of the Cliff Palace. The Cliff Palace is not only the finest but also the largest example of cliff-house architecture in our Southwest. In the Cliff Palace, Dr Fewkes plans to excavate all the rooms and plazas to their floors, remove accumulated debris, repair the walls that are

in danger of falling, and put the ruin in such condition that a visitor may walk through the courts and rooms without obstruction. Dr Fewkes has gone to the Mesa Verde Park from the Casa Grande ruin, Pinal county, Arizona, where he has been at work during the winter season unearthing the remains of an extensive prehistoric settlement.

Cornplanter Medal.—The third Cornplanter Medal for Iroquois Research was awarded February 18th last by the Cayuga County Historical Society of Auburn, New York, to Dr David Boyle, of Toronto. The Cornplanter Medal is the only permanently endowed medal for ethnological investigation in America, and is given biennially to one of four classes of workers—ethnologists, historians, artists, and philanthropists. The first strike of the medal was awarded to Gen. John S. Clark, one of the foremost students of the history of the Iroquois. The second was awarded to Rev. William M. Beauchamp, whose contributions to Iroquois ethnology and archeology are well known. The medal is now given to Dr Boyle in recognition of his ethnological and archeological researches of the Canadian Iroquois, the results of which have been published largely in the *Annual Archaeological Reports* to the Minister of Education of Canada.

Dr Hamilton Rice, of Boston, who has returned from an eighteen months' trip to the headwaters of the Rio Negro, in Colombia, has given to the Peabody Museum of Harvard University a valuable collection of ethnological material which he obtained from the natives of the region around the upper Uaupes river. The collection includes dance costumes, feather headdresses, rattles, whistles, drums, and other paraphernalia used in their dances and ceremonies, blowguns with poisoned arrows, ordinary bows and arrows, ceremonial staffs used for carrying the heads of the enemy, and various household objects such as wooden seats, hammocks, baskets, etc.

The preliminary program of the Sixteenth International Congress of Americanists to be held at Vienna, September 9 to 14, has been issued by the committee of organization, of which Herrn Regierungsrat Franz Heger (I. Burgring 7, Vienna) is the general secretary. A number of American students have already submitted the titles of papers. Dr Franz Boas has been appointed official delegate to the Congress to represent the Smithsonian Institution, and at the suggestion of the Institution the following have been named as delegates on the part of the United States Government: Professor Franz Boas, Professor Marshall H. Saville, Dr George Grant MacCurdy, Dr Charles Peabody, and Dr Paul Haupt.

THE Athens correspondent of the London *Times* reports that two archeological discoveries of considerable importance have been made. The excavations carried out in the Altis or sacred precincts of Olympia, near the great altar of Zeus, under the superintendence of Professor Dörpfeld, have resulted in the discovery of interesting remains of the Neolithic period, including house-vessels and implements. Thus it is evident that Olympia was a place of human habitation more than two thousand years before Christ. In Sparta the members of the British School have brought to light a large number of interesting terra-cotta figurines of the fifth century B. C.

THE *Journal of the American Medical Association* quotes an announcement to the effect that the German authorities have organized a central institute at Hamburg to train officials for the German colonies and protectorates, and to centralize all the scientific and economic efforts on behalf of the colonies. In order to keep the institution in close touch with commercial interests, three members of the chamber of commerce are delegated to act as an advisory board in all questions that may arise, and as the intermediary between the institute and the senate commission. Among the chairs to be organized will be one devoted to ethnology.

THE Société d'Anthropologie de Paris has divided the Godard prize equally between Dr Rivet for his contributions to the ethnology of Ecuador, and Mr R. H. Mathews for his studies of the Australian aborigines, and has awarded a medal to Lieutenant Luis Desplagnes for his work *Le Plateau central nigérien*. The Society has awarded its Bertillon prize to Dr Langlet, director of the École de Médecine of Reims, for his noteworthy work published at Reims in 1905 under the title *La population de Vitry-le-François et son arrondissement*.

PROFESSOR MARSHALL H. SAVILLE has departed for Ecuador where he will devote part of the summer in continuation of his archeological work for the George G. Heye Expedition. Dr S. A. Barrett is on his way to the same field, where for the next year he will conduct ethnological investigations among the little-known tribes included within the southern limits of the region which the Heye Expedition proposes eventually to cover.

IT is a pleasure to announce that Anthropology has gained another step in the University of Minnesota at Minneapolis, the name of the department having been changed from Department of Sociology to Department of Sociology and Anthropology. Professor Samuel G. Smith has been selected to take charge of sociology, with Professor Samuel N.

Reep as assistant in elementary sociology, thus permitting Dr Albert Ernest Jenks to devote his entire time to instruction in anthropology.

THE Martin White studentship of £100, at London University, lately vacated by Mr Gerald Camden Wheeler, B.A., has been extended to him for a further period of one year, in order to enable him to accompany Dr Rivers to the Solomon islands for the purpose of investigating the sociology of a mother-right community. This extension was rendered possible by the generosity of Mr Martin White in offering to provide a further sum of £100 for the purpose.

PROFESSOR A. L. KROEBER, of the University of California, has returned from an ethnological visit to the Mohave Indians of Arizona and California. His investigations continued previous studies of the mythology, rituals, and music of the tribe. A survey of nearly three hundred shellmounds on the northern shores of San Francisco bay has recently been completed by the department of anthropology of the University.

By proclamation of the President (April 16) under the authority of section 2 of an Act for the Preservation of American Antiquities, approved June 8, 1906, the following have been established as national monuments: Chaco Cañon, New Mexico (extensive prehistoric ruins); Gila Cliff Dwellings, New Mexico; Montezuma Castle, Arizona; Tonto, Arizona (ruins of cliff-dwellings).

DR EDWARD ANTHONY SPITZKA, professor of general anatomy at Jefferson Medical College, Philadelphia, and a member of the American Anthropological Association, has been elected a member of the American Philosophical Society.

THE German emperor has presented Professor Dörpfeld, head of the German Archeological Institute at Athens, with a sum of \$1,000 for the purpose of commencing excavations on the site of the ancient Pylos.

THE Second International Archeological Congress will hold its meeting at Cairo, Egypt, at the Latin Easter, in 1909. The congress will be opened under the presidency of the Khedive.

WE regret to record the death, on July 2, of Joel Chandler Harris, of Atlanta, Georgia, celebrated as the author of the "Uncle Remus" stories.

THE Harvard Corporation has confirmed the appointment of Herbert Joseph Spinden as Austin teaching fellow in anthropology for the ensuing year.

MR C. H. READ, keeper of British and medieval antiquities in the British Museum, has been elected president of the Society of Antiquaries.

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TATTOOING — ORIENTAL AND GYPSY

By A. T. SINCLAIR

INTRODUCTION

Many years ago while investigating Oriental Gypsies I found that tattooing was one of their principal and characteristic occupations, and that nearly all of the common people in Syria, Mesopotamia, Arabia, Egypt, and at least parts of Persia were tattooed, and so in Egypt were many of the rich. The most of this tattooing is done by the Gypsies. They are the experts. Wherever the Bedouin go there go the Gypsies (*Nawar*), who also do *their* tattooing.

In all these countries tattooing is a very old custom, going back to the most ancient times. Some of the oldest cuneiform inscriptions discovered in Babylon show it to have been then and there a common practice. It was a custom among the old Hebrews which Moses prohibited by his Law. A Persian in Susa tattooed the head of a slave, first shaving his head. After the hair had grown out again to conceal the message, he sent him to warn his friend Aristagorus of the treachery of Persia. It was the general practice of the Phenicians and other Semites. So the custom is ancient in Egypt. The early Christians tattooed themselves with religious devices. The practice has persisted and continued in all the above mentioned countries down to the present time.

Since the *Nawar* are the professional tattooers there now, the question arises, How long have they been such? Did they bring any peculiar designs, processes, or tattooing customs with them, or simply adopt in each country the devices popular and a trade they

found lucrative? With the hope of perhaps throwing some light on such questions, for years I have carefully studied tattooing in all countries where Gypsies are now found, and considered also India.

Mr H. H. Risley (now Sir Herbert) wrote me, August 28, 1902, that the subject was new in India and they had just taken up its study. He also suggested that a comparison of Hindu tattooing with Gypsy might lead to interesting results; the tattooing in India at least often is performed by a Gypsy-like class. The fascination of the subject and the suggestions of so many have led me to go into it broadly and generally. It is beset with many difficulties. There is no comprehensive work on tattooing, and very little has been written on it as to the Western Orient, or India.

I.—THE WESTERN ORIENT

It is an old custom for Christian pilgrims to Jerusalem to be tattooed there with some religious symbol, their name, or initials, and the date of their pilgrimage. The Armenian word for a pilgrim is *mahdēsī* (*mah* death, *dēsī* I saw). Hence this name is applied to a tattoo mark done in Jerusalem. It is also spoken *mākst*, *mākdst*, *mākdēsī*. Since such pilgrims are practically the only Armenians tattooed, it has become the ordinary and indeed only word for tattoo mark in Armenian. Occasionally an Armenian is seen who when a boy had a dot or a minute cross made on his hand, but hardly one in a hundred. Even then, however, he calls it *mahdesi*. The Armenian women as well as men make this pilgrimage and are all tattooed there in the same way. I have examined more than a hundred such devices, which they always show with pride as it is considered a great honor to be a Mahdesi. And they gladly explain the details and significance of the designs, why and where they were made, and often give traditions about the origin, reasons, and antiquity of the practice. Such pilgrims are entitled to be called Mahdesi John, Jacob, etc., as the name may be.

The pious duty of every good Moslem is to make the pilgrimage to Mecca, and many also go to Medina. Thousands go every year and from all parts of the Mohammedan world, even from Tur-

kestan, India, and the Far East. So here as at Jerusalem it is now as for centuries the custom for all pilgrims to be tattooed, with the date of pilgrimage, name or initials, and holy devices. Some Africans whose skin is too dark to show tattooing have three gashes made on the right cheek, which were the tribe mark of Mahomet and were borne by him on his cheek.

Such a Moslem pilgrim is called in Turkish *Hajl'*, and this word applied hence to such tattooing made in Mecca is now the only word for any tattoo mark. Sometimes I have seen a spot at the root of the thumb of a Turk made when a boy, but he always still applied the word *haji* to it. It is contrary to the Koran to be tattooed, and as the Turks are very strict Mohammedans few are marked otherwise.

In Arabic the word for tattoo mark is *dā'qqā*, the root of which means "striking." It is often pronounced *dā'a*, or *dā'kā*. The common people, who are usually the only ones tattooed, know of no other word. There are many other words given in Arabic lexicons, as *wasm*, mark or brand; *washim*, *zina*, etc., some of which are literary, but they are not used as "tattoo" by the people.

An Arab pilgrim to Mecca is styled *Hājjī*, or *Hājj*, and so are his tattoo devices imprinted there.

When asked why they allow themselves to be so marked simply for ornament as so many Moslems are, their answer is: "Before entering Paradise we shall be purified by fire and all these marks will disappear!"

I have examined the tattoo devices on many hundreds of Syrian and Egyptian Arabs as well as other Orientals, heard their stories as to who did it, why, where, the meaning of the designs and the traditions. With them often it is a matter of importance, and they are much interested in the subject. Many of them had traveled in other countries, and everywhere noticed the amount of tattooing, the devices, and the operators. Lane in his admirable work, *Manners and Customs of the Modern Egyptians*, speaks of tattooing called *dakk* as common among the lower classes in Egypt, and states it is performed by Gypsy women. A few other writers have cursorily remarked that some Bedouins or other Arabs were tattooed. But I have never seen any publication which gave infor-

mation of the fact that all the lower orders in the above named districts were tattooed, or that it was done by Gypsies. Even Wuttke, Joest, and others who had carefully studied the general subject evidently were not aware of these facts as to the Western Orient. Some Europeans who have lived there I find know about it just as the natives all do. But most of them never notice such things, or if they do can give no particulars. There are, of course, almost innumerable books written about these countries.

Here we have an important, pregnant fact: An immense territory populated by millions in which all the poorer class are tattooed, and every person generally with many devices, and particularly the women on many parts of the body. Very few writers have even alluded to any tattooing, and few Europeans know the facts. This neglect by authors to mention the matter and give full details *here* is an important consideration to be kept in mind when considering the subject in other parts of the world.

The difficulties of the most distinguished experts in learning the full, accurate particulars are illustrated well by Marquardt, *Die Tätowierung* (etc.) in *Samoa* (1899). He tells us (p. 7) that Prof. von Luschan examined the devices on a troupe of Samoans, consisting of about thirty men and twenty-seven women in Berlin, whom he described in his *Beitrag zur Kenntniss der Tätowierung in Samoa* (1897). His conclusions were that "not one of the women was tattooed in the old fashion." Marquardt found however that seventeen of them were so marked, but on parts of the body covered by clothing. Later Marquardt made a special study of the whole subject in Samoa, and discovered that even now all the men and sixty to seventy percent of the women are still tattooed most elaborately in the ancient fashion. This is directly contrary to what had been supposed to be the fact.

So George Turner in his *Nineteen Years in Polynesia*, and John B. Stair in *Old Samoa*, most excellent works, do not mention any tattooing of women.

Many similar examples can be given of careful writers who have failed to mention tattooing at all, or give an entirely wrong impression about peoples all of whom were tattooed.

Some writers, as General Robley as to New Zealand, have

drawn the conclusion that because tattooing was not mentioned by writers at a certain epoch the custom did not then exist.

Wuttke remarks simply that according to R. Brown the Haida Indians tattoo the arms, hands, and backs. Now we know the Haida tattooing was the most elaborate and elegant in America, and all were tattooed, and all over the body.

Careful study, however, will often disclose full facts even from very meager details. If we know "no man will marry a Polynesian girl unless she have a small triangle tattooed on her person at puberty," and that all children of such an unmarked woman are killed, we may be sure all women there are tattooed. If the Dakota believed that the ghosts of none of them could travel the ghost road in safety unless they had a tattoo device on their forehead or wrist, it is certain that all Dakota had this mark. When we find in any region a few belonging to all classes, high and low, tattooed beautifully and extensively by professionals, it indicates a careful cultivation of the art, and a very general practice.

This is not the place to consider these points at length. But the almost universal and extensive practice of this art in the Western Orient, facts known to so few, makes an admirable illustration. Again, it is a question worthy of thought whether the practice has not been widely spread from here and India (where tattooing is general) to the Farther East and Africa. Arabs and Indians and their culture for thousands of years have visited and influenced very distant countries. We find it in words "Kafir," "Moro," "Buddhist," in musical instruments and so many other things.

In the Western Orient it is the common tradition that tattooing is a very ancient custom and that the mark set upon Cain was a tattoo mark which protected him. But why from the surrounding hostile tribes?

Herodotus, II, 113, tells us that "a slave who escaped to the temple of Hercules in Egypt and was tattooed there could not be retaken by his master." Some marks seem to have been a protection.

Nearly all the tattooed individuals I have examined stated that the Gypsies do the tattooing even in Jerusalem, Mecca, and Medina. A large number of the better class of Orientals not themselves tattooed, confirm this statement. Boys and girls and sometimes

adults make simple and rude figures, but it is clear that the good work is most of it done by Gypsies. The universal assertion has been made that all pilgrims to Jerusalem, Mecca, and Medina are tattooed in those cities and by the *Nawar*.

Thevenot relates that on his visit to Jerusalem in 1658 they were all tattooed, as was the custom of all pilgrims. So Godard (1862) speaks of a Russian Grand Duke tattooed there. Joest and others mention two kings and kaisers and other princes who felt bound to follow the custom of all pilgrims.

A large proportion of our naval officers at some time visit Jerusalem, and I have never been able to hear of one who did not conform to the usual custom. One petty officer, a first-class yeoman, was the only exception. He told me that he should have been but did not have time. So the Moslems who had been in Mecca or Medina, all were tattooed there and insisted everybody else was. I suspect, however, that many of the better class of Turks do not permit any such marks to be made on them.

Many of the Mahdesi Armenians were indignant at the suggestion that they would allow a "Gypsy dog" to touch them. But the sly Gypsies, some are Christians and some are Moslems, and very often conceal their identity and deny they are Gypsies. They do that everywhere. The general assertion and I think the fact is that Gypsies do the sacred tattooing. This view is confirmed by most if not all of the intelligent non-tattooed Orientals I have questioned about it.

Oriental Gypsies themselves are tattooed when it is the custom generally in the East. Some Gypsies in Van are. But the European Gypsies are never tattooed. Hence their tattooing is an easy mode of identifying Oriental Gypsies who are often seen in all parts of Europe and America.

II. — CIVILIZED NATIONS

The extent of tattooing among the peoples of Europe and North America is much greater than is generally realized. Gypsies are found in all this territory sometimes as now belonging in the different countries, and sometimes as wanderers from elsewhere. These facts have led me for many years to investigate this tattooing in the

various countries by a personal examination of the marks on people tattooed, and by inquiries. The only countries in which I have been able to learn that Gypsies have practised the art are Greece, Italy, and Sweden.

In Greece the sailors seen in the Piræus are generally tattooed. I have seen a few Greeks who have been marked when in the army with military devices, as two cannon crossed, a wreath around them, etc., but it is not a general practice among Greek soldiers. Often prisoners tattoo one another as a pastime in the jails. Among the Greeks generally however there is very little of it. Often bands of Oriental Gypsies are seen in Greece as showmen, etc., and sometimes these offer to and do tattoo some of the peasants. Indeed some country people know the Arab word for tattoo mark, *dāka*. They call these Gypsies *Syriāni*. The ordinary Greek word for tattoo-mark is *photographia* (φωτογραφία), or *mārka* (μάρκα). Sometimes *syl* (συλή), scar, and *śma*, mark, are used.

In Italy, the sailors, porters, etc., in Naples are very generally tattooed. Prisoners everywhere there often are marked by each other in prison, just as in Greece. Otherwise, and except those marked at Loreto, among many hundreds I have not found one tattooed south of Lombardy. The statements of all have been that, except as above, Italians do not practise the custom. All are familiar with these Arab Gypsies, who often appear at country fairs, and wander about, and occasionally tattoo a "reckless youth." Some of them had seen this done. The Italian words are *retrato* (picture), *marco* (mark), *segno* (sign), *devozione* (devotion), *tatuaggio*. I have usually heard *retrato*, *marco*, and *devozione*.

Among the two hundred Italian fisherman (mostly Sicilians from Messina, Palermo, Catania, etc.) in Boston, not one is tattooed. Lombroso states that there is more in Piedmont and Lombardy where the Keltic element is greater. It is also said that the practice was formerly general in the Piedmontese army.

The Scandinavian (Sweden, Norway, and Denmark) deep-water sailors are certainly ninety percent of them tattooed. It is the tradition among them that the custom is very ancient. One old sea captain stated that his grandfather, also a sea captain, had told him the same. Other Scandinavians never use the practice and can

very rarely give the Swedish word *tatu'ra*, for it. Still, one Swedish clergyman when a young man had once acted as interpreter in North Sweden when one of these Arab Gypsies was arrested, since both knew some German. And he saw a young Swede tattooed by this band. The Gypsies themselves were all much tattooed and were called by the Swedes *Arápi*. He had frequently seen similar bands giving shows in the country places under the former King, "who was a jolly old soul and allowed such things more than now."

It is clear the Gypsies practise this art in Europe only to a trifling extent. It is not a trade of European Gypsies, except perhaps in Bosnia and Herzegovina, and somewhat in the Balkan peninsula.

All British sailors practically are tattooed. Such is the universal testimony from extensive inquiries. It is the rule to write down in a British consul's book a description of all sailors who visit the office, and note and describe all tattoo marks. An inspection of this book at the Boston office showed only thirty-three percent tattooed. The vice-consul in charge courteously told me of the devices in the Philippines and Japan where he had been for several years, and also of the many British soldiers he had seen tattooed in Burmah. In going out I met six sailors in the entrance hall. All were tattooed, and some most elaborately on arms, chest, back, and legs—one by Lee the Philadelphia artist. Like every British sailor I have found in America they insisted all had some device. They gave as a reason why so many were not so described in the consul's book: "They do not like to tell about it." This incident is of little moment except as illustrating the fact that such records do not disclose the real facts. Some of these sailors had been in the East, and like those of other nations were aware that Gypsies are numerous and do the tattooing in Egypt and Syria. Several had been tattooed there by them, and exhibited such designs.

Just as nearly all our naval officers are tattooed in Jerusalem or Japan, so are most of the officers of the British and German and some other navies. This statement probably does not apply to the French and Italian officers from my inquiries.

Of the American man-of-war's men certainly ninety percent are tattooed. The same is true of our deep-water sailors, and largely true of the "coasters" and marines. Landsmen think it makes "sea-dogs" of them, and soon submit to the practice. One brave old sea captain, a gallant soldier through our Civil War and some years in the navy, was not operated on because, as he laughingly said, "it hurts too much." Another, a petty officer in the navy, was not, because when he enlisted a friend showed him a device on his own arm, and warned him, "My boy, that is the blackguard's mark; never let them put it on you." A few, for one reason or another, abstain from the practice. But the custom, example, the ridicule of shipmates, the anxiety "to show nerve," as a pastime, or something causes nearly all our navy and deep-water sailors to bear some tattoo marks. This is true of the British, French, German, Scandinavian, Italian, and most European navies. I have examined the devices on many hundreds of such sailors, and they always insisted all have some device.

As to American fishermen, at the present time of those who sail from Boston, Cape Cod, and vicinity, comparatively few bear devices. They usually estimate the number at ten percent. It is not popular with them. Many of those with designs had it done when on foreign voyages, or coasting. My own inquiries and observations tend to confirm this estimate.

A story is current among the marines "that a millionairess has offered fifty dollars to any marine who has served two terms of enlistment without being tattooed, and not one yet has been able to claim the prize."

The ancient Britons were so elaborately covered with devices pricked into their skins that they abstained from clothing which would conceal these ornaments. Cæsar and several other Roman authors so state. The early Christians in England bore holy devices to such an extent that a council in Northumberland, 787 A. D., prohibited the practice. The old Irish monks tattooed. It has been supposed by some that British tattooing is a relic of the old custom reinforced and made popular among sailors by the discovery of the South Seas and the notoriety of Prince Jolly and other tattooed men

exhibited in Europe. Some have thought it was a characteristic of the Keltic race. It is most common in that part of Italy where there is the most Keltic blood.

Probably there is more tattooing (apart from sailors) in France than in any other country in Europe. The French word is *tatouage*. Large numbers of French soldiers as well as sailors are so marked. So are a very large proportion of the artisans and mechanics in Paris and other French cities, and it is a common fashion among the *grisettes*. It is also a common practice in the mountainous district of Auvergne. The charcoal dealers of Paris are Auvergnats, and are tattooed. The artisans have as devices the tools of their trade, as a butcher, a cleaver and knife crossed; a cooper, a barrel; carpenter, a saw and hammer, etc. Lacassagne and Lombroso take the view that it is confined mostly to the criminal classes. These certainly are prone to it, but my researches convince me that Joest is right when he states that it is by no means confined to criminals but is widespread among many others.

How much there is in this theory that tattooing in England, France, and northern Italy is a survival of an old Keltic custom is difficult to determine. It may be true.

In Germany, omitting the sailor class, the practice is in most districts not used. Joest states the same but that in parts of central and southern Germany a good deal is seen on the streets and at the public baths. I have found that in Saxony, Hessen Cassel, etc., very many artisans are tattooed just as in France, and many soldiers; and that the tradition among them is that it has been handed down for centuries. Very probably it is an old guild custom. The devices of the French and German landsmen are coarse, rough, and unattractive. *Tätowierung* is the German word; also *Tatuirung*, and *Tättouirung*.

It should be noticed that in Astrakhan Russia the artisans are also tattooed in the same way with their tools of trade. The custom seems to be unknown in Russia generally, except among sailors. The Russian word is *tatuirova'niye*.

Glück thinks that the tattooing of all the Christian girls in a certain district of Bosnia and Herzegovina with sacred designs may have originated in the desire of the Catholic clergy to prevent conversion

to Islamism. Many of the men, however, also have devices. It may be a survival of the early Christian custom which has happened to persist here. In this very region tattooing was a general practice long before the Christian era, and it may be a relic of this. The prohibition of the Koran would easily account for its absence among the Moslems. Still in the whole region and Albania some bear devices.

Many Spanish sailors I have met were tattooed. The Spanish words are *pintura*, *picadura*, *tatuagge*.

There is no apparent influence of the Gypsies on European tattooing, either in patterns, style, or general appearance.

III. — TATTOOING IN AMERICA

In America the practice appears to be increasing. During the Civil War very few of our soldiers were tattooed. Seventy-five percent of the 26th U. S. Volunteer Infantry, a Massachusetts regiment, were tattooed, and before they left for the Philippines. In many large cities, as New York, Philadelphia, Boston, Portland, are professional artists who earn their living by tattooing. From their accounts they have very numerous patrons. Not infrequently the newspapers contain articles on the new "fad" among fashionable young ladies. Sometimes even the names of ladies high in the social scale and a sketch of their tattooed arms are given.

Large numbers are operated upon by electricity in dime museums. Within the last seven years it has become a fashion among the trainmen of the Maine Central Railroad. In one small district in Nova Scotia some time ago, nobody was tattooed. An old sailor came there to live and within a year five hundred men bore the devices of his art. The *Vega* visited the mouth of the Lena on the Siberian coast where the natives were astonished at the tattooing on the sailors' arms, an art unknown to them, but which they much admired. The author describing this, suggests: "The next visitors will probably find a tattooed colony here and wonder if they invented it themselves!" The number in the United States who do it as boys, or for a lark, or have their name or initials to identify them, is considerable, much greater than those suspect who have not made a careful and extended study.

The practice is rather growing in the civilized world and certainly is not diminishing in India or the Western Orient. Many Europeans who visit or live in Japan or Burmah seem captivated by the artistic work and bring home elaborate designs imprinted on their bodies. The beauty and elegance of some of this work is marvelous.

Thirty or forty years ago I saw the celebrated Greek who was beautifully tattooed in Burmah. His whole body except the soles of his feet was literally covered with devices, all rather small, but the minute and accurate details of every figure were wonderful: serpents, lizards, dragons, birds, flowers, animals, in short almost every conceivable pattern somewhere. He was exhibiting in Boston with Barnum's circus. I visited him several times, and had long talks with him, felt of his arms, legs, body, and did my utmost to detect the imposture I believed it must be. Then I knew little about tattooing. I had heard much of Barnum's humbugs, and supposed this was another. The marvelous story of his captivity by Tartars with three others, all of whom died under the operation, added to my suspicions. I remember him well now. He was a rather large, well-built man who posed on a stand, or barrel, taking artistic postures when the circus orator described his adventures. The orator always ended his oration with "And he is always much admired by all the ladies," which was sure to "bring down the house." He was dressed simply with a breech-cloth, and an immense solitaire diamond ring which flashed as he gracefully and affectedly handled a cigarette. His hair was worn in long braids, curled and fastened on the top of his head. His true history has been given subsequently by Fletcher, Joest, and others. He evidently had himself tattooed in Burmah for the purpose of exhibition.

Seven years ago, in studying jugglers' tricks, I met at Austin and Stone's Museum, Boston, an American juggler and his wife. She was an Indian woman, born in Indian Territory. Her whole body, legs, and arms were covered with devices, rather small and of all sorts. She was exhibited as the most artistic and elaborate work of the North American Indian ever done! They had been all over Europe and the United States, and had learned French and German abroad. She told me that she had been tattooed for exhibition and

that they had been very successful. Her part was to perform Indian jugglers' tricks and also to pose as an Indian prophetess and mind-reader! The work was plainly only the best class of the American artists.

IV. — GENERAL EXTENT OF THE PRACTICE

Tattooing has a strange fascination for the crowds who frequent such museums, and for the common man; also for many of the better and educated classes, as well as savages. This fact, apparent to-day, may explain the wide spread of the practice. Whether it be the natives at the mouth of the Lena, a quiet Nova Scotia town, Long Branch beach, a large American city, Jerusalem, Japan, or the Philippines, the civilized man as well as the savage seems to be fascinated by the idea. It is said that there is no tattooing in Central Asia, and that it was unknown to the ancient Aryans. It was in vogue among the ancient Chinese and Koreans, but neither practise it now except in southwestern China and as a punishment. After the last Taiping insurrection the surviving rebels were so marked to identify them in case of another uprising. The women in the Chinese island Hainan are elaborately tattooed. The Chinese have no special word for it, but use *hlé'ang hal* or *kó m-dó'i* picture, *sīā-nā*, hand mark, etc. They say it is "bad luck."

Some Chinese books state that when the Chinese first visited Japan it was inhabited by "tattooed savages." The pictures of the old mythical Japanese heroes often represent them as tattooed. The Geisha girls were formerly all tattooed, but none of them are now. Grooms, jinriksha men, and some others of the lower classes in Japan did tattoo, and do at the present time, perhaps not so much as formerly, but still the practice is very common in spite of the efforts of the government to stop it. The common Japanese word is *hó-rā-mó nō*, carving mark. *Bunshū n*, another word, reminds one of the old Chinese word *venchin*, or *venjin*, tattooed-man.

The Aino, the supposed aborigines of Japan, employ the practice. All the married women have a moustache, and the lips blue and other devices. Many of the men also bear designs.

It was the universal custom among the Tungus, Koryaks,

Chukchi, and Siberian Eskimo. It was common, at least, in Saghalin and Kamchatka, and universal across the Aleutian islands, King island, and the Diomedes, and among all the Eskimo to Greenland. To some extent at least, it was general among nearly all the tribes of North America. It existed on the Isthmus, in Mexico and the Antilles, was in "full swing" in ancient Yucatan, and was practised in ancient Peru, and by very many tribes all over South America, even in Patagonia. Among some tribes of both North and South America it is certain that the whole body was universally covered with elaborate designs.

Probably the old Japanese were all tattooed. At all events we find in Japan today the art elaborate and elegant. Going south to Formosa the bodies of all Formosan belles are most beautifully embroidered with artistic designs — flowers, fishes, etc. The highly developed state of the art was universal certainly among the men in Burmah and Siam, and at least very common in Annam. Among some Philippine tribes it was and is elaborate. The thousands of Pacific islanders tattoo. All the Polynesian tongues stretching from Madagascar to the Sandwich islands have one origin. The canoe voyagers starting from Farther India gradually extended their voyages from one island to another as far as Easter island and Hawaii. Did they sail beyond? They took their language with them, and many evidences tend to show the custom of tattooing.

The English word *tattoo* is derived from the Polynesian word *tatau*, common to all the dialects. The root *ta* means "to strike." By a common rule of Polynesian frequentative reduplication this becomes *tata*. The syllable *u*, which conveys the idea of pricking, is added, making *tatau*. Often another *ta* is prefixed to distinguish it from a word *tatau* having a different significance. So we have *talatau*, or *tatau* = our tattoo, which first appeared in English in Captain Cook's *Voyages*, 1770. He seems not to have known this word before he heard it in the Pacific, but employed the term "pricking." He spelled it "tattow," which he may have pronounced *ō*, or *aū*, hardly *ū* (*oo*). The word *tabu*, or *taboo*, came with it. During the operation a man was under *tabu*. These two are said to be the only Polynesian words in the English language. Since, this word *tattoo* has been adopted in many other European tongues.

In Natchez and Muskogee *ta* also means "to strike." The English word *tattoo* (but with a different origin) is used for the taps of a drum. In some Polynesian dialects *tata* becomes *ta'a*, almost exactly the Arabic *da'a*, the root of which is "striking." This Arab *d* in *al'ud* becomes in Spanish *laud*, in English *lute*.

There can be no possible connection between these languages. The example however illustrates the danger of drawing inferences of a common origin from coincidences of words, customs, etc.

The Melanesian tongues are supposed by some to have the same origin as the Polynesian. The Papuan and Australian are plainly from a different source.

In the Australian the skin is so dark that tattooing does not show well, therefore the practice of raised scars (*manka*, *akotto*) was employed, and was elaborate, but coarse, and universal. The Papuans (New Guinea) use both forms, color and scars (*cicatrices*), and both are generally and largely practised.

Some of the minute Papuan devices which form the larger designs are identical with those of distant Polynesian islands. The Australian word *akotto*, or *kotto*, is also found as the name of Polynesian tattooing, where the instrument is also called *kotto*.

The elegant and universal New Zealand form was termed *moko*. The art was highly developed and in general use in Borneo. It is said that in Java and Sumatra, where the native skins are very dark, no form of tattooing is practised.

The custom in some of its forms is or has been general, and with a very large number of peoples universal all over Africa. When the skins are too dark to show colors, scarification is used. Tattooing popularly and often in literature includes penetration of the skin by cuts or burns, without dyes as well as with them, and is a convenient general term for the four methods: pricking or scarring in indelible ink, soot, etc., both of which leave the skin smooth; inserting these in cuts, as in New Zealand, thus making a rough surface; and the raised scars of Australia kept open for months by irritating substances, earth, etc., so as to leave finally a wide elevated scar one quarter inch high or more. All along the northern coast of Africa—Tripoli, Tunis, Algiers, and in Morocco—the practice is almost as general as in Egypt. So it

is in Abyssinia, the Galla country, Soudan, all through the heart of Africa. Even among the Boers and Zulus in South Africa, who call it *shara*, there is a very large use of the practice. The Zulu laborers seen in Cape Town have from one to three gashes several inches long on their cheeks. These are said to be tribe marks. A few only of the most savage, remote, and degraded tribes are reported without the custom.

The extent of the practice in India has not generally been understood. Accounts of the Nilgherry Hill tribes have been published, showing elaborate designs, and that all women *must* be marked; and also about some other half-savage tribes in India. But educated Europeans who have lived there do not seem to be aware of the fact that tattooing is general. My investigations and inquiries from many Hindus and Europeans of the poorer orders who grew up there as boys led me to think such was the fact among women of the lower classes. Recently I have received a printed letter, apparently part of some publication. It begins: "Indian Museum, Calcutta, Jan. 31, 1908. Under instructions from Sir Herbert Risley I send you the information you ask in your letter of Aug. 15th, last." The first two and one-half quarto pages are devoted to musical instruments, referring also to accompanying photographs; the rest of the letter to tattooing. The following is a brief quotation: "Your informants are correct in stating that tatuing is practised in all quarters of India, among the lower classes. I may add it has filtered among the higher classes, too. It is only an infinitesimal portion of the educated men of India who have been inducing their fair sex to give up the practice. The tribe, the caste, the religious sect, and the profession of the wearer of the mark can often be traced from the symbol selected. Many again are charms; sympathetic magic also plays an important part in the selection of these drawings. For instance, the mark of a scorpion protects one from the bite of that vermin, and a snake from that of a cobra, and so forth. Among the Burmese gunshots are tatued to protect from fire-arms! A Shan thinks he acquires agility by tatuing a cat, or tiger, on his body. The tatuer is often a woman, a professional herbalist, known as *Vaidu* in Bombay."

The letter is signed "B. A. Gupte, Assistant Director of Ethnography for India," who states: "I am a *Hindu* of Bombay," and has attached to it nine immense sheets covered with unpublished copies made by him of tattoo marks, and several important monographs. He also states "Sir Herbert wrote you in his letter of 28th August, 1902, that as Director of Ethnography for India he started an enquiry into this subject. The result now is that a large collection of tatu marks has been made by Mr Rose in the Punjab, Capt. Bannerman in Rajputana, Major Luard in Central India, Khan Bahadur Dallal in Baroda, and by me in Bombay, Ootacamund, Vindhyachal, Raichur, and other places." This letter indicates what is perhaps true of much Oriental tattooing everywhere. Some charm, superstition, hope, myth, or something is connected with the devices, especially those on women.

What I have already stated as to the extent of the practice in Persia is confirmed by a letter just received from Major P. Molesworth Sykes, Meshed, Persia. He writes: "Apparently all Persian women are tattooed," and "that he will investigate more fully later on."

Moslems of the Punjab have told me that the Mohammedans of that district and Afghanistan do not tattoo because it is contrary to the Koran. Even in Calcutta nearly all the women of the lower classes are tattooed, and professional tattooers are numerous. These frequently board foreign vessels and operate on the sailors. Some of this work I have examined and it is very well done. On one short street in Calcutta, thirty years ago, were thirteen rude bamboo houses much frequented by such sailors for amusement. Among the other inmates were always found, in every house, two or three of these tattoo-experts ready to imprint devices on the visiting seafarers. The Hindu words I have heard for tattoo are *godna*, *chap*, *pa'chni*, *da'ga*; the Afghan word *dag*, *da'ka*; the Persian, "*ghali* (*rali*), *khal*, *daga*, *dag*. The lexicons contain other words also. Shakespeare's *Hindustani Dictionary* gives "*chhapā*, sectarian marks representing a lotus, trident, etc., delineated on the body by the Vaishnavas, or worshippers of Vishnu"; "stamp, print."

This hasty general survey discloses some facts important to notice. First that there is an immense territory filled with hun-

dreds of millions of people most if not nearly all of whom are tattooed, viz, India, Persia, Mesopotamia, Syria, Egypt; and the custom reaches back to the highest antiquity. From this district it is traced step by step in contiguous countries, or those separated only by seas, over Farther India, all the South Seas, Australia, Cochin China, China, Japan, northeastern Asia, across Bering strait, the Aleutian islands, all over North and South America, the Antilles, and all over Africa and Europe.

Secondly, it is everywhere practically the same art. Details in designs and processes may differ. The different peoples simply use the most convenient tools for them—what each has, whether steel needles, bamboo needles, fish or bird bones, cactus spines, knives, etc. The dyes everywhere are about the same: Soot is the most common, charcoal, India ink, for black; cinnabar for red. Some word for striking, tapping, is the word for the mark and process very generally. There are many little details, as tying the needles together, sheets of patterns, methods of work, common in widely distant regions, and so with devices. The many similarities are so striking often as to prove a common origin. One fagot can be easily broken, but a bundle cannot.

Wuttke¹ makes the remark: "No one would be willing to assert that the custom of tattooing is something natural and evolved of itself, and on this ground it is general. . . . Its origin was in the earliest, oldest times of the human race, before the wide dispersion of man."

His masterly work considered all forms of expressing ideas by marks, knots, paint, pictographs, hieroglyphics, etc., except written alphabets, embracing the whole known world. The conclusions of such a sagacious, keen, learned scholar on such a subject has weight. His chapters on our subject are unsurpassed.

Any attempt to discuss adequately such points and any details is impossible in this paper. During my Oriental studies for years one thing has impressed me: the easy means by which musical instruments, games, tricks, etc., and particularly tattooing, can be and has been spread. I have found a very large number of instances of borrowing when at first sight this seemed impossible. But I

¹ *Die Entstehung der Schrift*, p. 96.

have never learned of a single case in which tattooing was clearly an independent invention.

V. — DEVICES

The religious devices in Jerusalem are varied, as St George on horseback with a long spear, the vanquished dragon on the ground before him ; Christ on the Cross ; a copy of the silver crucifix worn by Greek priests ; the Virgin Mary holding the infant Jesus ; Peter and the crowing cock ; Greek churches, candelabra, incense lamps, crosses ; the infant Jesus with angels gazing on him from the clouds, and a great variety of other Biblical subjects. The name or initials, and date of pilgrimage are added. Often both arms and hands are covered with several such patterns according to the wishes of the pilgrim, and the remuneration.

These religious devices are in imitation of a very ancient practice. It was forbidden in Lev. XIX, 28 : "Ye shall not make any cuttings in your flesh for the dead, nor print any marks upon you." Isaiah XLIX, 16 : "I have graven thee on the palms of my hands." Cutting the flesh was a common mode of expressing grief, or anger, just as it is in the South Seas and among our Indians today. It is mentioned as a custom in I Kings, XVIII, 28. The priests of Baal cut themselves "with knives and lancets until the blood gushed out upon them." So Jeremiah, XVI, 6 ; XLI, 5 ; XLVII, 5 ; XLVIII, 37 ; Lev. XXI, 5 ; Deut. XIV, 1. St Paul wrote (Gal. VI, 17) : "From henceforth let no man trouble me, for I bear on my body the marks of the Lord Jesus." Rev. XIII, 16, 17 : " . . . a mark on their right hand, or on their foreheads."

The Phenician worshippers of the Moon goddess had consecration marks imprinted on their necks and wrists. The early Christians followed the practice, some claiming miraculous devices. The early Nestorian missionaries carried the custom with them to China. In 725 A. D. the Arabs compelled every Copt monk to wear on his right hand the mark of a lion, or it was cut off. Soon every Copt bore this device. The Emperor Theophilus tattooed the foreheads of two Christian martyrs with ribald verses.

The tattooing at Loreto is probably a relic of this old religious custom. The pilgrims devote themselves to the Santa Donna,

hence the word for their devices, *devozione*. The myth as told me is that the sacred image was transported with the *Santa Casa* (chapel) through the air from Egypt (some said Syria) by an army of angels to Loreto (from *Laureta*) near Ancona. These images are sold everywhere in Italy and always with a black face like the Madonna. Thousands make the pilgrimage from all parts of the country every year, especially in September, when the railroads reduce fares to one third. Many go on foot, and barefooted, as more devotional. All are tattooed there with pious symbols and by old women who are found in booths or little shops. Many miraculous cures are believed to be wrought at this shrine.

The word "cross" is applied to the sacred tattooing in Bosnia. Here also is a famous shrine, which by tradition was carried by angels over the river to escape the Turks, and back again when they retired. All the Catholic girls in parts of Bosnia and Herzegovina are elaborately tattooed on Sundays in the churchyard with religious symbols elegantly done, and by a Gypsy-like class of women.

All these simple pilgrims and people seem to feel as St Paul did, that they bear on their bodies the "marks of Christ." They regard them with reverence and comfort, and some as a protection.

The ordinary patterns in the Western Orient are trees, flowers, leaves, wreaths, swords, simitars, daggers (often piercing a heart and drops of blood as seen on the walls of Pompeii), knives, crescents, stars, dots, all kinds of animals, fishes, one figure a fish with mouth open ready to catch a worm-bait, arrows, wreaths, garlands, bracelets, geometrical figures, lines, crosses, circles, etc.

Moslem women often have forehead, temples, cheeks, chin, lips, breasts, abdomen, arms, legs, and back much tattooed: lines on the lips and chin, a star on each breast, in the center a date-palm tree, emblem of fertility. Several Syrian ladies of Tripoli informed me that all the Moslem women there of the lower classes had these vertical lines on the chin, one at each corner of the mouth and one in the center. Wuttke calls attention to these same three lines on the chins of Egyptian women and Eskimo women.

A few years ago many negro slave women in Syria and Turkey bore three huge gashes on each cheek, their only marks.

Persian women have marks on forehead, star on temple, devices on back of hands, and on arms, breasts, calves, such as birds, garlands of flowers, violet wreaths around navel, etc.

The wives of Luri Kurdish chiefs are tattooed with fronds on the throat, three stars on the chin, one in the center of the forehead, and other devices on hands, arms, and body.

Mrs Bishop,¹ speaking of the Bagdad district, remarks: "All Bedouin women are tattooed. There are artists here who live by tattooing. Flowers on the bosom linked by a blue chain, palm fronds on throat, stars on brow and chin, bands around the wrists and ankles." These artists are Gypsies, who are also the people's doctors in Bagdad. They are seen at regular seasons in the market places with their herbs and remedies spread out before them, or peddling these about the streets. The people there have great faith in these Gypsy healers and wait for their arrival. Often they treat certain troubles by burning the skin with a hot nail, or an iron, which leaves a scar. So the Arab dancing-girl class burn their skin in various parts of the body with cigarettes. Hence many Arabs have scars. Often Syrians burn the top of the head for weak eyes, and so many show scars there an inch or more in diameter. Curiously these same scars are very common in the same spot among the tribes of Kafiristan, and made for the same reason. The trade sign of the Egyptian Gypsy dancing-girl is three round spots on the chin, forming a triangle. In Persia, in addition to those already mentioned, the sun, sunbeams, lions, are favorite devices.

Most Gypsy tattooing is artistic and well done, some of it beautifully.

The religious devices at Loreto, Italy, and in Bosnia also show fine work. Those in Bosnia are probably made by Gypsies. With these exceptions all European designs are seen at a glance to be inferior to those of the Oriental Gypsy. Much of it is extremely coarse and unattractive. The most elegant work is done in Japan and Burmah. Next come the Marquesas, Samoa, New Zealand, and other South Sea islands. That of the Haida Indians of Queen Charlotte islands is elaborate, and finely wrought, by far the best of any in the Americas. There are certain peculiarities and char-

¹ *Persia*, vol. 1, p. 34.

acteristics in different districts, not only in pattern but in other particulars — the parts of the body marked, and the general appearance and impression of the whole work, which are noticeable.

The tattooing of the Western Orient that is done by Gypsies all is similar and has the same general character. It is distinctly different from the work elsewhere in the Far East as well as in Europe and America, although all may and do have some simple figures the same, and in the same spot on the body, as a round spot on the forehead, three vertical lines on the chin, etc.

The work of Burmah, Siam, Hainan, and Formosa, suggests that of Japan. That in most of the South Sea islands has many peculiarities in designs as well as otherwise which make a common origin certain. Haida tattooing suggests in figures and character that of some of the Polynesian islands, — the broad lines, split fishes, reptiles, birds, etc., — and also reminds of the old Mexican art. It is by no means sure that a careful, patient study of the subject — work, details, process, figures, myths, meaning of devices, parts of body, etc., would not shed light on interesting and puzzling questions.

VI. — MEANING

It has often been said in regard to the tattooing of the South Seas that every mark, every device has a name and a meaning. This is undoubtedly true, and also as to their body painting. Some of these names and meanings are known, but to learn and understand them all or many of them is here, as everywhere, a difficult task requiring time, opportunity, equipment, and long patient study. The significance of many handed down for centuries, or borrowed, has been lost, but there is enough left to repay careful scrutiny.

These primitive savages have retained such meanings to an extent that a consideration of them here may present suggestions elsewhere.

Certain patterns indicate rank, title, position, slaves, subjects, tribe, societies, clubs, name signature (as *moko*), warlike deeds, number of enemies or whales killed, maturity of girls and boys, occupation — as whaler, house-builder, dancer, tattooer, priest — dance-place building, household work, warrior, adopted brotherhood, married women, a social feast, husband's achievements, children, signs of mourning, marks for the dead, brand of disgrace or crime,

charms against evil spirits, serpents, animals, reptiles, insects — to make invisible to an enemy, render him powerless, or terrify him — moustaches, beards, the sun (concentric circles); to captivate the other sex, not subject to "tabu," a magical or supernatural power, etc.

The same devices are often seen in house and other posts, canoes, weapons, utensils, etc.

There are small, often minute, devices of various kinds which are employed to outline and fill up larger compound designs. The simple marks are straight lines, stripes varying in width; curved, wavy, zigzag, winding lines; spirals, volutes, triangles, hooks, bands, circles, semicircles, horseshoes, T's, Y's, feather edges, saw-teeth edges, minute stars, dots, two or three parallel lines, etc.

The compound figures are fishes, reptiles, fabulous birds, dragons, demons, men, plants, foliage, trees, tortoises, animals, insects, feathers, leaves, teeth, magic knots, geometrical figures, flowers, rings, bracelets, anklets, necklaces, moustaches, beards, horns, nets, ladders, grates, crosses, round spots, concentric circles often with cross lines, parallel lines, stars of various styles, diamonds, squares, rectangles, checker-boards, rosettes, breast-plates, etc.

Sometimes on islands where everybody is elaborately covered, some, as the priests, have only one small rectangle over the right eye. The most minute mark therefore should always be noted.

A few examples must suffice here. Some of the best illustrations of meaning are found in a recent work, *Dreissig Jahre in der Südsee*, by R. Parkinson, edited by Dr. B. Ankerman, 1907. Painting of the body is a widespread custom, by many thought to be the forerunner of tattooing, which is merely the pricking in of color to make it permanent. The natives of the Gazelle peninsula, Neu-Pommern, often paint the face with soot mixed with oil. This soot is the same and made from the same nut as that used in tattooing. The whole subject of body paint is intimately connected with the latter and deserves an article by itself.

A certain stripe on the right breast, shoulder, and arm is called *meme*, "lightning." It gives the warrior's arm a surer aim. The whole lower face black is *pap*, "hound," and causes the pursued enemy to stumble in fright and to fall when he hears the pursuer

breathing loud like a hunting dog. A black ring round the right eye and a red one round the left is *kokot*, "crow." One pattern is called *minigulai*, "hawk," and both are believed to give certain powers to the wearers. Their painting is elaborate, and "every stripe and spot has a name and signification." Tattooing does not show well on their dark brown skin, and plays a small rôle. So the artistic warrior wig, called *wardodo*, or *ka ai wai*, enables the warrior to approach his victims unseen.

The faces and parts of the bodies of an assemblage of dancers who take part in many festivities in India and Farther India are often painted in an extraordinary manner.

In Persia the ladies "paint and fix themselves up in all the seven colors of the rainbow," as they express it. The practice has by no means disappeared in the civilized world, where rouge and blanc and a tiny black patch are by no means rare. The black patch would seem to be the same as that of the Persian belles, who call it a "mole." The Persian word *khat* (mole) is a common name for tattoo mark.

The tattooing, feather head-dresses, body painting, dances, elegantly made and engraved round shell gorgets, the shell money and basketry of some Pacific islands, are a fascinating study for one interested in the North American Indians. The first superficial reading of Parkinson and other works often surprises by similarities in all these subjects. A connection between the two seems impossible, but all are worthy of careful study. The resemblances are more striking and greater than in the same things in Africa.

Almost everything among these islanders seems to be a charm, have magic power, or be intimately bound up with mysticism and the supernatural.

Joest, Kubary, Parkinson, and others are inclined to the view that tattooing is not religious but simply esthetic, ornament, to please the other sex. They would seem to be right as to the *punialo* ("pond to catch fish") on the abdomen of the Samoan women, and the *fa'a'upega*, "fish net" on the same place on men. Both are large elaborate figures.

Joest (Kubary), p. 86, describes the operation on Nukahiva girls at maturity. Groups of five or ten girls pass three months in

temples before it is done. On the appointed day the operator, on the beach before the whole village people, quickly makes the triangle on her person. The priest who superintends covers the parts with three stones, and her breasts with a triangular tortoise-shell covering. After three days the drawing heals and she can leave the temple. Then follow races, wrestling, festivities, etc.

All this can hardly be denominated mere ornament, and the larger part of the Pacific designs seem to confirm the opinion of Wuttke and others that they are much more than esthetic.

The triangle is an exceedingly common figure, both in small and large designs. The Radak islanders have a triangle, point at navel, then across the breast, and the other two points at the shoulders, etc.

The Sandwich islands and Tahiti both had the same large basket pattern design. The tattoo implements of Tahiti and Samoa, thirteen hundred miles apart, are exactly the same. The peculiar appearance given the Papuan girls by a certain use of a small line is duplicated in the Neu-Pommern districts. Scarification, found among the Maori and Marquesas, is in the rest of Polynesia occupied by the ornamental moxa scars. A part of the dried rib of a coconut leaf, a quarter of an inch long, is inserted into the skin. The free end is lighted and blown out just as the flame reaches the skin. The remnant is consumed as a glowing ember and leaves a scar. These are arranged in various ornamental lines.

A design consisting of two rows of saw-teeth on long lines, one superimposed on the other, is common in Samoa, and also is found on the spears in New Hannover; it probably means "whale-diver."

Pelau is distant from Samoa forty-four hundred miles, yet a large number of the small marks, particularly those which make up the larger drawings, are the same, and they are too numerous to be accidental. Inspection at once shows this.

CONCLUSION

In order to study the subject carefully, to make comparisons and draw correct inferences, certain details are important: (a) The percentage of people tattooed, and of each sex. (b) Many or few devices

on each person. (c) On what parts of the body. (d) General descriptions of the marks, simple and compound. (e) The meaning of each and whether religious, ceremonial, tribal, sacrificial; showing marriage, puberty, rank, warlike or other achievement, servitude, disgrace, a charm against disease, evil spirits, wounds, etc., a trade mark, or to fascinate the other sex, to insure a good husband, children, ornament, etc. (f) The native words for tattoo, and the various marks and their significance. (g) Antiquity of the practice; if borrowed, when and whence. (h) Traditions and myths about the origin, meaning, use. (i) Description of the process, and ceremonies, if any. (j) Are the same devices found on pottery, skins, canoes, implements, weapons, trees, posts, houses, rocks, etc. (k) Time, patience, the confidence of natives, and inquiries of *many* willing to talk are needed.

It is impossible to treat the questions here except in a general way and to make suggestions. The subject is a large one which will repay thorough study and careful thought. The most impressive point, perhaps, is that the art is spread over nearly the whole of the known world and is similar everywhere. As Wuttke (p. 96) so well expresses it, "In the execution and devices noticeable agreements occur which, as well as the variations, might be accidental. The amazing sameness in the essential part (*Hauptsache*) remains."

ALLSTON (BOSTON),
MASSACHUSETTS.

VENTILATORS IN CEREMONIAL ROOMS OF PRE HISTORIC CLIFF-DWELLINGS

By J. WALTER FEWKES

The object of this article is to show that the inhabitants of the prehistoric cliff-dwellings of the Mesa Verde, in Colorado, invented and used ventilators to supply pure air at the floor level in certain of their subterranean rooms.

The special chamber set apart by Pueblo Indians for ceremonial purposes was called by the early Spanish discoverers an *estufa*, or stove, a name no doubt suggested by the great heat of the room when occupied. An *estufa* is commonly designated by the Hopi Indians a *kiva*,¹ which term is rapidly replacing the older name. It is found that prehistoric ruins as well as modern pueblos have kivas and that specialized rooms of this kind likewise exist in cliff-dwellings.

The kiva is the most important and generally the best constructed room in a pueblo, ancient or modern. In certain pueblos of the Southwest the kiva is the oldest room, and, from the very fact that it is devoted to religious practices, it preserves archaic features of construction, being less affected than secular dwellings by sociological changes. It is found in examining kivas of both modern and ancient pueblos that they differ in structure, form, size, and numerous minor peculiarities. It also appears that certain geographical areas have similar kivas and that other forms when found in these areas are intrusive. An examination of architectural variations and their distribution is important as bearing on the special subject of this paper.

Exceptional advantages were presented to the author to study the construction of kivas while in charge of excavation and repair work at "Spruce-tree House," one of the large cliff-dwellings of

¹ It is instructive to note that the Hopi word *kiva* has the same elements in composition as *wa-k'i*, the Pima designation of a ceremonial building like Casa Grande. In both, *k'i* means "house"; the significance of *wa* is not apparent.

the Mesa Verde National Park.¹ This locality was particularly favorable for this study, as nowhere else in the Southwest are cliff-dwellers' kivas better preserved or more instructive in their teachings.

The type of kiva at Spruce-tree House is identical with that of other Mesa Verde ruins, and has a wide geographical distribution. It follows San Juan river and its tributaries as far west as the cliffs of the Cañon de Tseyi, or Chelly, and as far south as the great Chaco ruins in New Mexico. The kivas of the McElmo² and lesser cañons of the San Juan are morphologically the same as those of Spruce-tree House. Although aberrant examples of this type can be recognized a considerable distance from the Mesa Verde, the type reached its highest development on this tableland. Certain inhabited pueblos still retain the form of ceremonial rooms found in the Mesa Verde, but circular rooms of this kind do not occur in the western part of the Pueblo area or in the vast region extending from the Hopi villages to the northern boundary of Mexico.

There are two types of pueblo and cliff-house kivas: one circular, the other quadrilateral. The kivas of Spruce-tree House belong to the former group, and architecturally are among the highest in development of all these ceremonial rooms. In order to consider intelligently the kiva structure of which this article treats, the author has given below a brief sketch of the construction of the circular type.

The eight kivas of Spruce-tree House — except possibly Kiva A — are subterranean and constructed on the same general plan. In no instance are they built inside quadrilateral buildings, as is said to be the case with circular kivas elsewhere. The top of the roof is level, and continuous with the floor of the adjacent plaza; the main entrance being through a hatchway, descent into the room was by means of a ladder. Their walls are made of dressed stone, with plastered surfaces of mud and sand of different colors.

¹ The excavation and repair work at Spruce-tree House was done under direction of the Secretary of the Interior.

² Mr S. G. Morley writes me that he has found similar kivas in the Cannonball ruin on the McElmo, not far from Holly's ranch. The recurrence of kivas of the same kind in rim-rock ruins and cliff-houses shows a homogeneity in the culture of the inhabitants.

We may describe the walls forming the enclosure as double, or as consisting of an outer wall (figs. 93, 94, B) and an inner wall (A), the latter ending a short distance from the floor. Between the top of the inner and the base of the outer wall there are six recesses separated by the same number of buttresses (C) which project from the outer wall into the kiva, so that the surface of the buttress facing the center of the kiva is flush with that of the inner wall. The horizontal portions of the recesses are banquettes that are generally paved with flat stones but are sometimes smoothly plastered.

The inner wall of each kiva has a rectangular opening (D), capped

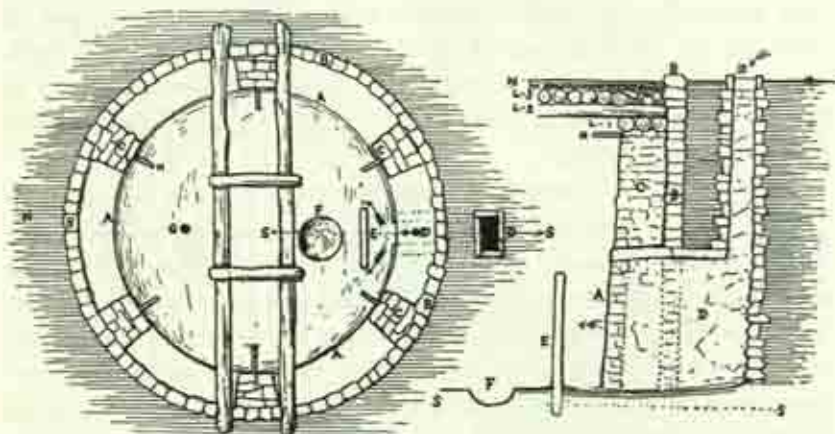


FIG. 93.—Plan of kiva in Spruce-tree House. A, inner wall; B, outer wall; C, pillar; D, air shaft; E, deflector; F, fireplace; G, sipapu; H, pegs; L1, first set of logs; L2, second set of logs; L3, logs covering top; L4, logs covering ends; M, bark and sticks; N, adobe.

on the upper side by one or more flat stones forming part of the banquette. This opening is spacious enough to admit a man's body, the smoothly plastered inner surface showing no signs of smoke or fire. Its cavity narrows, as it recedes from the room, into a passage,¹ which, after extending horizontally a few feet, turns upward, opening externally at the level of the plaza. Here as a rule its walls are now broken, although in some instances evidences still remain that it did not formerly end at the level of the plaza. The ver-

¹ Strangely enough, in each of three of the Spruce-tree House kivas a human skull and some other bones were found in the passage.

tical shaft probably turned again in a horizontal direction and opened externally through the wall which forms the front of the whole village, enclosing the plaza on the western side. This tunnel, which we may anticipate by calling a ventilator, is the subject of this paper and will be considered more at length later.

In addition to this opening in the side of the room, several kivas have also other lateral passageways situated between their floors and banquettes. These communicate with other rooms situated some distance away, or in some cases open exteriorly in the middle of the adjoining plaza. Through these subterranean tunnels one may with difficulty crawl from an outside room into a kiva, and at least one of these tunnels (Kiva G) is furnished with steps to facilitate the passage of one entering the room.¹ While a majority of the kivas are destitute of these tunnels, none lacks the vertical openings called ventilators.

The masonry buttresses (c) separating the recesses and the banquettes above mentioned, are square, or nearly so, in horizontal section, invariably provided with short pointed pegs (h) attached to their tops,² upon which the priests formerly hung the ceremonial paraphernalia. As in all sacred rooms, small niches, or cubby-holes, were constructed in the walls at convenient intervals. Meal or paint was formerly kept in these recesses, and in one kiva a small-necked bowl of coarse ware, set into the banquette, evidently served a similar purpose. As a rule, however, no niches of this kind exist in the upper walls or the sides of the buttresses.

The floor of a Spruce-tree House kiva is generally plastered, but in one instance is formed by the smooth surface of rock in place. When Kiva G was built, the rock surface projected unevenly, and, not being low enough for the kiva floor, was cut down six or eight inches on one side, presenting one of the most remarkable examples of rock cutting *en massé* the author has seen.

The circular fireplaces (f), situated a little to one side of the middle of the floor, were found to be packed solid with wood ashes. These fireplaces are merely deep cavities in the floor and appar-

¹ These passages were probably used by the chief priest, and not by others who entered the kiva. The regular entrance was through the roof.

² Ceremonial offerings, if any, are found on the top of these buttresses at the end of these pegs.

ently are lined with cement, not, as is usually the case, rimmed with slabs of stone set on edge, or with a raised border of adobe.

A flat upright stone (E), often replaced by a low wall about two feet high, projects from the floor between the fireplace and the kiva wall. This may be designated an "air deflector." The passageway to the ventilator (D), by which fresh air enters the kiva, is situated back of the deflector, in the lower or inner wall of the kiva.

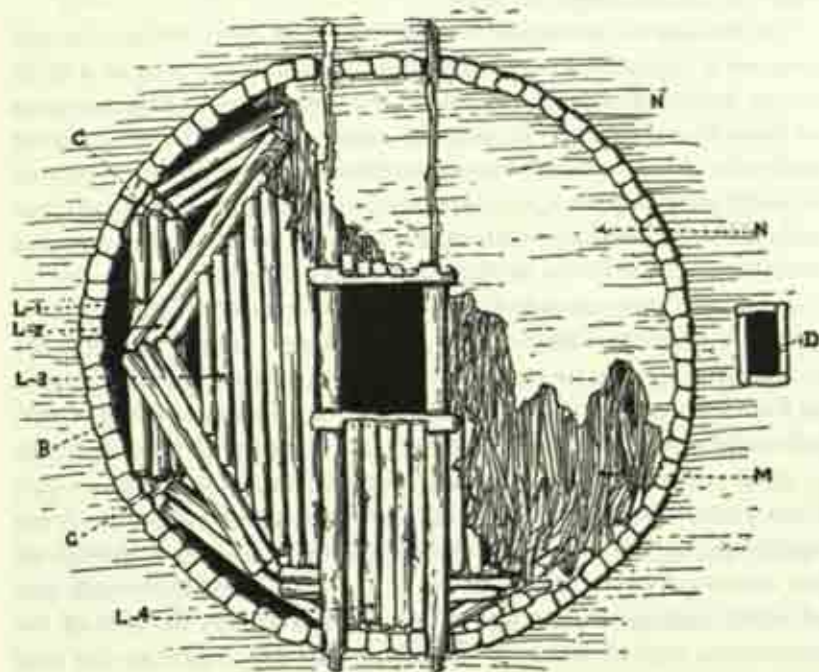


FIG. 94.—Plan of kiva roof at Spruce-tree House. (Compare fig. 93.)

There is a small circular opening (G) in the floor representing symbolically the entrance to the underworld, called by the Hopi the *sipapû*,¹ between the fireplace and the wall of the kiva directly opposite the deflector. This hole is only a few inches deep, and its sides are lined with the neck of a vase, the body of which is sometimes buried beneath the floor. The *sipapû* is the most revered place in the kiva, and about it are performed some of the most sacred rites.

¹This is the first recognition in print of a *sipapû* in a circular kiva.

The most complicated structure in a modern pueblo house is the roof, and the roof of a circular kiva was the most ambitious attempt at building undertaken by the prehistoric inhabitants of cliff-dwellings. All eight kivas of Spruce-tree House were roofed in the same way (fig. 94), but none of them had more than a few beams of the original roofing still in position. In clearing out the kivas, however, several well-preserved roof-beams of considerable size were brought to light.

Although Nordenskiöld¹ claims to have seen in the Navaho country a *hogan* with roof constructed in the same way as a Mesa Verde kiva roof, it is believed that he was mistaken. The coverings of these kivas have no likeness in construction to Navaho *hogans* as figured by Mindeleff² or as observed by the author. The roof of a cliff-dwelling kiva does not resemble that of any known form of habitation of non-agricultural people, and it was devised to meet architectural conditions foreign to nomadic culture.

The roof rests upon buttresses (c), which apparently were represented in some ancient kivas by upright logs. These supports, six in number, are placed equidistant³ around the room. They serve as foundations for eighteen cedar logs (L¹) which are arranged peripherally and horizontally in threes, each triplet so placed on its supports as to span an interval between adjacent buttresses. Upon these rests another set (L²) of eighteen logs, also arranged in threes spanning the sextants including the buttresses. On this second set are numerous other logs (L³). It is to be noticed that, as each row of cedar logs is added crosswise on the row below, the size of the uncovered part of the kiva diminishes and the height of the roof is increased.

Two stout rafters extend diametrically across the kiva, with their ends resting on the outer wall. They are equidistant from and generally parallel with the last set (L³) of peripheral logs, or those supported by the buttresses. These large logs serve as the main supports of the roof, especially its middle, where the strain is the greatest. Between them, midway in their length, lies the hatch-

¹ *Cliff Dwellers of the Mesa Verde*, 1893.

² *Seventeenth Annual Report of the Bureau of American Ethnology*, pt. 2, 1897.

³ The recess under which the ventilator passes is generally deeper and broader than the other.

way¹ through which one enters the kiva. The intervals between these logs and the last layer of crosswise peripheral logs arranged in threes are filled with sticks, the space between the two large beams being occupied by smaller poles resting on split beams. The last-mentioned beams form opposite sides of the kiva hatchway, and support the ladder.

Inserted in the crevices and openings between the logs above mentioned there are small sticks, split logs, and brush, and over the whole is spread a layer of shredded cedar bark (M). This covering supports a thick deposit of mud (N) filling all spaces above the supports and raising the roof level to that of the top of the outer wall of the kiva.² Nothing is visible on the roof of the kiva but a level floor broken by a hatchway in the center of a circle of stones marking the outer wall. This floor is continuous with that of the neighboring plaza when such exists.

The roofs of two of the kivas of Spruce-tree House were restored, following as a model those in the Square-tower House (Peabody House), where there is a considerable section of a kiva roof still fairly well preserved.³ A kiva with covering constructed in the way described is somewhat more capacious than one with a flat roof resting on parallel rafters, although the height of the walls is the same. The inner surface of the roof is vaulted and its height considerably increased by the manner in which the logs are placed one above the other.

Kiva A⁴ in Spruce-tree House presents the remarkable feature of a partially double-walled chamber, or of a circular room built inside an oval one. A section of the walls of the two is duplicated,

¹ No Mesa Verde kiva has yet been found with hatchway or ladder in place, but there is every probability that the entrance was in the roof. It is, however, extraordinary that no signs of the stumps of ladders or holes for the same were found in any of the eight kivas of Spruce-tree House.

² Nordenskiöld's schematic drawing of the roof of a kiva in Square-tower House does not tally with the author's observations. The roof logs in reality are arranged in threes, and not one above another as Nordenskiöld represents.

³ In the restoration of the roof of one of the Spruce-tree House kivas the author was aided by Mr A. V. Kidder, who has given much attention to the structure of cliff-dwellings whose great help made this work possible.

⁴ For convenience in reference the rooms of Spruce-tree House are numbered and the kivas lettered, the figures and letters being painted in black on the walls themselves.

the remainder being fused into a single wall. This kiva has an exceptional site, having been originally constructed close to the rear wall of the cave, while others are situated on top of the talus in front of the dwellings. Its floor is at a relatively higher level than the others, and rooms formerly stood in front of its outer walls.

It is probable that some time may have elapsed between the period of construction of the two parts of the double wall, and the larger is believed to be the older. The only explanation that has suggested itself to the author to account for the double wall of Kiva A is the following: It may have been that after the larger kiva was finished and roofed the ventilation was found to be insufficient or such that the smoke and vitiated air were not properly carried off. The smaller kiva was built within the other and nearer the ventilator, to obviate this defect.¹

The construction of the different parts of the kiva and their significance have been considered by several investigators, among whom may be mentioned Mindeleff and Nordenskiöld, the latter the most prominent student of the Mesa Verde ruins. It should be pointed out that Mindeleff's studies of circular kivas were made in Cañon de Chelly, while those of Nordenskiöld were conducted at the Mesa Verde. It is possible that there is some difference in the construction of ceremonial rooms in these two areas, notwithstanding the kivas in them belong to the same general type.

The plan of the principal kiva in Mummy-cave ruin, in the Cañon de Chelly region, as given by Mindeleff,² shows a style of architecture morphologically identical with that of the kivas of Spruce-tree House. A ventilator and a deflector are present, but the fireplace and *sipapú* are absent.³ These kivas appear to have had only a few buttresses, and not many banquettes and lateral recesses. Their present form would indicate that Cañon de Chelly lies on the outskirts or periphery of that cultural area in which the circular type of kiva reached its maximum development.⁴

¹ The shaft partially excavated several years ago by Mr W. K. Moorehead at Aztec, New Mexico, may later be found to be the ventilator of some adjacent room. See *American Anthropologist*, N. S., X, April-June, 1908.

² *Op. cit.*, p. 186, fig. 82.

³ These will probably be found through excavation by experienced archeologists in this interesting locality.

⁴ Kiva B of Spruce-tree House is the closest approximation of all to the Cañon de Chelly kivas.

Nordenskiöld has given a fairly good general sketch of a typical kiva of the Mesa Verde ruins, from which the following quotation is made :

"Between the fireplace and the outer wall stands a narrow curved wall eight-tenths of a meter high. Between this wall in the same plane as the floor a rectangular opening one meter high and six-tenths of a meter broad has been constructed in the outer wall. This opening forms the mouth of a narrow passage or tunnel of rectangular shape which runs 1.8 meters in a horizontal direction and then goes straight upward on into the open air. The tunnel lies under one of the six niches which is somewhat deeper than the others. The walls are built of carefully hewn blocks of sandstone, the inner surface being perfectly smooth and lined with a thin yellowish plaster. On closer examination of this plaster it is found to consist of several thin layers each of which was black with soot. It is difficult to say for what purpose this tunnel has been constructed and the slab of stone or the wall erected in front of it. As I have mentioned above this arrangement is found in all the estufas."¹

Each kiva of the cliff-dwellings of Cañon de Chelly, according to Mindeleff, was erected inside a rectangular room, and in a "few instances the space between the outer rectangular wall and the inner circular wall was filled solid and perhaps was so constructed, but usually the walls are separated and distinct." Although an outer quadrilateral wall enclosing the circular kiva does not exist in Spruce-tree House, it is not unknown in Mesa Verde ruins. This feature was probably a necessity in Cañon de Chelly, where the rooms were built above ground on account of the exigencies of the rocky site. In no better way could the ancient inhabitants fit buildings of circular form into angular spaces than by enclosing them in quadrilateral rooms.

No structural difference between circular and quadrilateral kivas is more radical than in the mode of building the roofs. According to Mindeleff, in the Cañon de Chelly "the roof of the kiva was the roof of the chamber that inclosed it." However this may be in the roofing of the circular kivas referred to, it does not apply to

¹Although, as Mindeleff points out, an inspection of Nordenskiöld's ground-plan shows more kivas without this feature than with it, the statement in the text of the above quotation is correct, the ground-plans being faulty in this particular.

those of the Mesa Verde. The author predicts that when the method of roofing circular kivas in Cañon de Chelly is determined by scientific excavation, it will be found to be the same as in the Mesa Verde.¹ According to Nordenskiöld: "The simplest way of roofing an estufa, an example of which was observed in another estufa at Square-tower House [Peabody House], is to lay poles horizontally across the room — poles of sufficient length may easily be procured of piñon or cedar. This form of roof is also the general one in all quadrilateral rooms." The author believes that the roofs of both the Peabody House kivas were constructed in a style not unlike that which has been restored in Kiva C of Spruce-tree House, the details of which are shown in the accompanying illustration (fig. 94). In studying roof construction Nordenskiöld overlooked the two main rafters of one kiva of Peabody House, and supposed that the beams spanning the opening of another indicated a difference in the manner of building the roofs. It is believed that there was no radical difference in the construction of these two roofs, but that both were built in the same general way.

Four theories have been presented to account for certain lateral openings, or "chimney-like structures," in the circular kivas: (1) that they are chimneys; (2) that they are passageways or entrances; (3) that they served some ceremonial purpose; (4) that they are ventilators. The theory that they were chimneys seems to have been dismissed by all authors, for they exhibit no sign of smoke. The expression "chimney-like" structure may however persist as a good, although misleading, term by which to designate them. The third theory is too vaguely stated to be discussed.

In considering the second theory, or that these lateral passageways are entrances to the rooms, it must be borne in mind that in some of the kivas of Spruce-tree House, and probably in others of the same culture area, the kivas sometimes have underground lateral openings of two kinds, some of which are entrances. The size and structure of the former, or that by which one enters a kiva from a neighboring room or plaza, and that of the latter — the problematical structures — are quite different, although their openings into the

¹ As is known to students of the Mesa Verde ruins, there are several circular rooms that are not kivas.

kivas closely resemble each other. When seen from a subterranean chamber they might readily be mistaken one for the other, and without excavation the observer would be at loss to know how to distinguish them. One of these doubtful passageways was described by Professor Holmes¹ many years ago, in a ruin not far from those under discussion. Mindeleff, in considering his description, refers the structure designated as a "covered passageway" to the same category as the "chimney-like" structures of the Cañon de Chelly, but points out that "the tunnel is much larger than usual and the vertical shaft, if there were one, has been so much broken down that it is no longer distinguishable." The tunnel in the ruin described by Holmes might be either an entrance to the kiva or a ventilator, but as no sign of the more constant structure called a ventilator is seen in his ground-plan, it is possibly the latter.

The strongest and probably a fatal objection to the second theory of vertical passageways in the Spruce-tree House kivas is that they are too small to allow the passage of even a child, much less an adult. The fourth theory is supported by all the known facts, and the objection to it turns out to be of a most specious nature when analyzed.

Nordenskiöld finds the entrance and chimney hypotheses unsatisfactory. He is not satisfied with the ventilator theory, but does not state his objections. Mindeleff regards all three theories untenable, and thus writes regarding the ventilator: "Ventilators according to this method [the introduction of fresh air on a floor level, striking on a deflector and being thus distributed in the room²] is a development in house architecture reached by our own civilization within the last few decades." He adds, however, the following paragraph which shows that he is not wholly opposed to the third theory: "There can be little doubt that the chimney-like structures were not chimneys and no doubt at all that they did provide an efficient means of ventilation no matter what the intention of the builders may have been."

In quadrilateral kivas thus far described, except possibly the kiva of Wukoki, a ruin at Black Falls on the Little Colorado, men-

¹ *Tenth Ann. Rep. U. S. Geol. and Geog. Survey*, Washington, 1878, p. 395.

² The Tobin system introduces fresh air above the level of entrance.

tioned by the author,¹ no air flues have yet been found. Modern Hopi kivas, which like those of Spruce-tree House are subterranean, but unlike them in being quadrilateral, have no air vent except the kiva hatchway. As a rule quadrilateral kivas are much larger and their roofs higher than those of circular kivas, so that the ventilation, which is also facilitated by a more capacious hatchway, is not a matter of great concern. The suggestion—it could hardly be regarded as more—that the discovery of the principle of supplying fresh air to a room at the level of the floor was too advanced for a people whose knowledge of architectural principles is said to have been so limited as that of the ancient cliff-dwellers, is contrary to observation, which shows that the cliff-dwellers had discovered this principle and applied it in their kivas. They were compelled to discover it, for otherwise it would have been impossible for one person, much less for several, to remain in a subterranean chamber so small as these, even with a moderate fire burning. Without adequate ventilation, smoke would have driven them out.

BUREAU OF AMERICAN ETHNOLOGY,
WASHINGTON, D. C.

¹ *Twenty-second Annual Report of the Bureau of American Ethnology*, p. 49.



1a



1b



2a



2b



3a



3b



4a



4b

CATAWBA TYPES

1, Billy Harris. 2, Sarah Harris. 3, Sarah Harris. 4, Fanny Harris.

CATAWBA POTTERS AND THEIR WORK

By M. R. HARRINGTON

Among the stony hills near the river that bears their name in York county, South Carolina, a remnant of the once numerous Catawba tribe of Indians may still be found. In this region hunting and fishing as a means of livelihood are things of the past, and the rocky soil of the little reservation can hardly support the population; while the labor markets round about are glutted with negroes who will work for almost nothing. These and other factors, notably the excellence of the ware itself, may help to explain the remarkable survival of the potters' craft among the Catawba, an industry which to-day forms the chief support of the tribe and the main occupation of nearly every household.

Using implements and methods that from their simplicity seem to have changed but little since prehistoric times, these Indians manufacture vessels and pipes which, on account of their beauty and oddity, find a ready sale at Rockhill and other neighboring towns. Alone among eastern Indians the Catawba have made their ceramic art an industry which has survived the years and the competition of machine-made wares.

It is my purpose in this article to describe the process of pottery-making as practised by the Catawba, but before doing so it might be well to say a few words about the people themselves as I found them. When I visited the reservation in June, 1908, while collecting ethnological specimens for George G. Heye, Esq., of New York City, I was informed that there are now nineteen houses occupied by the Catawba, fourteen of which are on the reservation, the others scattered about within a few miles. Living in these houses are ninety-eight Indians who might be called Catawba, and besides these one or two Cherokee. There are also several Catawba living with the Eastern Cherokee in North Carolina, and others, it is claimed, — isolated individuals and families — scattered in Utah, Colorado, Oklahoma, Texas, and Mexico.

Mooney, in his *Siouan Tribes of the East*, states that from time to time survivors of other eastern Siouan peoples have been absorbed by the Catawba; hence it is probable that the amalgamated blood of many tribes flows in the veins of the modern remnant. Certain it is that within recent years there has been some intermarriage with the Cherokee. There is also a considerable infusion of white blood noticeable in the tribe, but Indian color and features still predominate (pl. xviii). No cases of negro admixture were observed, nor did inquiry elicit the information that such had ever taken place. The Catawba language is on the verge of becoming lost, for although remembered by the older Indians and many of those in middle life, it is rarely spoken, English being the language of daily use.

The majority of the Catawba belong to the Mormon Church, and have abandoned the old dances and ceremonies, which linger only in the memories of some of the older people. It is probable that descriptions of these may still be obtained, and texts of myths recorded; for I heard several myths in English from John Brown, at whose house I stayed. He had heard them in the Catawba language from his mother, Margaret Wiley, who is still living. The following myth—the only one I had the opportunity to record—may be considered typical:

"An old woman was gathering persimmons under [a tree in a valley, but was not satisfied with what she found. A Deer came along and inquired what she was doing. 'Gathering persimmons,' she replied. 'How do you get them?' asked the Deer. 'I run and butt my head against the tree,' was the reply; 'if you will do it for me I shall give you some.' The Deer went off and came running, striking his head against the tree. Only a few persimmons fell. 'You must do it harder,' said the woman. So the Deer went up the hill and ran down again, striking the tree so hard that his neck was broken and he fell dead.

"Then the woman wanted to skin and cut up the Deer. She made a cutting motion with one forefinger across the other.

"'*Demittesasa*,' she repeated over and over, implying 'I have no knife.' A Wolf came along and heard her words. 'I will tear up the deer for you,' he said, 'if you will give me half.' 'All

right,' said the woman, and the Wolf went to work. When the deer was all nicely divided, the woman said, 'Suppose something should come along making a noise like thunder — *trrrrr*!' 'Don't say that,' cried the wolf, 'you frighten me!' Just then a flock of partridges flew up with a roaring sound — *trrrrr*! which so frightened the Wolf that he ran away and left the woman with all the meat."

No Indian clothing, ornaments, or ceremonial paraphernalia could be found on the reservation, and the old industries, with the notable exception of pottery making, are practically extinct. Even old baskets were difficult to find. There is, so far as I could learn, only one basket maker — a man — among the Catawba to-day, and he rarely works at the trade. Basket fish-traps (*yūwasap*) are still sometimes made and used however. One flat basket of cane (*wa'sāwasap*), an old specimen said to have been a food dish, was obtained, of a type familiar among the Cherokee and other southeastern tribes, together with a few old splint baskets for general use, rectangular in form, made smaller at the top than at the bottom. Two bows (*ttckā*) were also found, one about four feet long and the other a toy, both of the straight flat style almost universal among eastern Indians. The arrows (*wa'*) were made of cane. As no old blowgun (*wa'sābo'he'*) could be found, I had a new one made by a Catawba who remembered how the work was done. The tube he made of cane, about five feet long, rasping out the septa at the joints with a wooden rod tipped with tin; while the darts (*yēhwa'*) were made of wood wrapped with cotton at one end to make them fit snugly, the whole contrivance being in every respect similar to blowguns collected from the Mississippi Choctaw and the Koasati (Creeks) of Louisiana. Wooden ware was represented only by an oblong shallow tray (*ttuskuspamutobā*) with projections to serve as handles on each end. No wooden mortars or pestles for crushing corn were seen.

That the Catawba now use but little of their own pottery became clear when I inquired for old vessels that had seen actual service. A few such, and a few only, were obtained, comprising cooking pots (*tūsyamūšē*) with and without legs, bowls (*tūsul'*), and jars (*tūskt*) for keeping milk and other liquids, all more or less of old

types, but differing from most prehistoric forms in having flat instead of rounded bottoms. Some of these are shown in plate XXIII. One pitcher ("pitcū") of the modern trade form, but which had been in use, was collected. The trade ware consists mainly of vases, pitchers, flower-pots, and fancy pieces of different shapes, sometimes decorated with incised geometric designs or life forms modeled in relief or in the round, but usually relying for effect upon their graceful form. Most of the vessels made to sell exhibit very little Indian character in form or design, ancestral patterns having been sacrificed to the demands of the trade.

Pipes (*wmtisū*) are an important product of the Catawba potter. For home use a simple pipe with a little incised decoration is preferred—sometimes of old Indian type, sometimes made in imitation of the clay and briar pipes bought at the stores. For trade, a popular pattern is the so-called "peace pipe," a tiny decorated pot provided with four or more stem holes, while another trade form is called the "chicken comb." This may be descended from an old type. A very popular commercial design takes the form of a conventional Indian head crowned with feathers.

The Catawba use the following implements, which I consider of native origin, in manufacturing pottery: a wooden pestle (*yēbr^{to}*) about 2½ feet long, shown in use in pl. XIX, *b*; mussel (*Unio* sp.) shells (*nulcr^ē*); modelers (*wade*) cut out of gourd in circular or oval form, others of wood (*yēbtūstkawā*); combined cutting and piercing implements of cane (*wasā'*); a wooden tool (*simpa*) for boring pipe-stems; very smooth fine-grained waterworn pebbles for rubbing stones (*tuthrā'*), and polished bone implements resembling blunt awls (*nusap*), while of doubtful origin are pipe molds (*wmtisūmpadē'a*). (See pl. XXIII.) Modern tools used are a hoe for digging the clay, various bits of board used in rolling and as bases for modeling, iron knives, and wire and coins for decorating.

Two kinds of clay are used—a fine-grained stiff variety called "pipe clay" (*wmtisū^{to}*), and a coarse, lighter, crumbly kind known as "pan clay" (*t^{to}tūtis*). Three mines of pan clay are known on and near the reservation, and five of pipe clay. In mining clay the Indians merely dig down through the surface soil a few inches or feet into the underlying stratum of clay, work this hole for a time



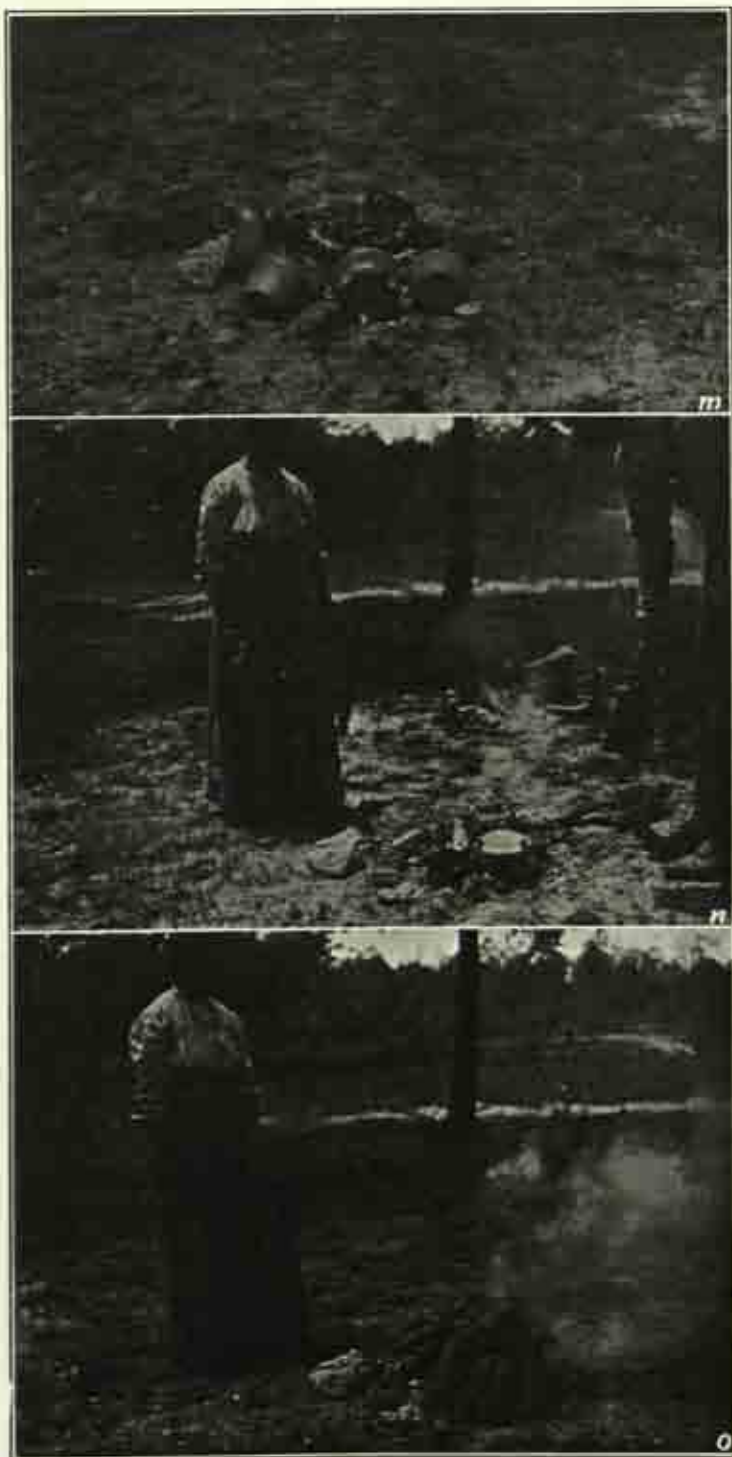
CATAWBA POTTERY MAKING

a, Digging the Clay. *b*, Pounding the Clay. *c*, Rolling the Coils. *d*, Applying the First Coil. *e*, A Later Stage in Coiling. *f*, Blending the Coils, Outside.



CATAWBA POTTERY MAKING

g, Blending the Coils, Inside. *a*, Shaping the Rim. *j*, Scraping. *j*, Rubbing with Pebble. *k*, Rubbing with Bone Implement. *l*, Decorating.



CATAWBA POTTERY MAKING

m, Preliminary Heating of Vessels. *n*, Vessels Inverted upon the Embers. *o*, Firing Vessels.

until it becomes troublesome to keep free of water, then abandon it and begin another one near by. The appearance of these abandoned clay pits reminds me of similar excavations I have seen over clay deposits near the sites of ancient Iroquois villages.

The modern Catawba dig the clay from the pits with a common hoe (pl. XIX, *a*), pick it over to remove foreign substances, and carry it home in sacks.

The following account of pottery-making is merely the description of what I saw and heard while staying in the reservation at the home of John Brown, a Catawba, and the photographs (pl. XIX-XXII) show him, his wife, and their eldest daughter at their accustomed tasks.

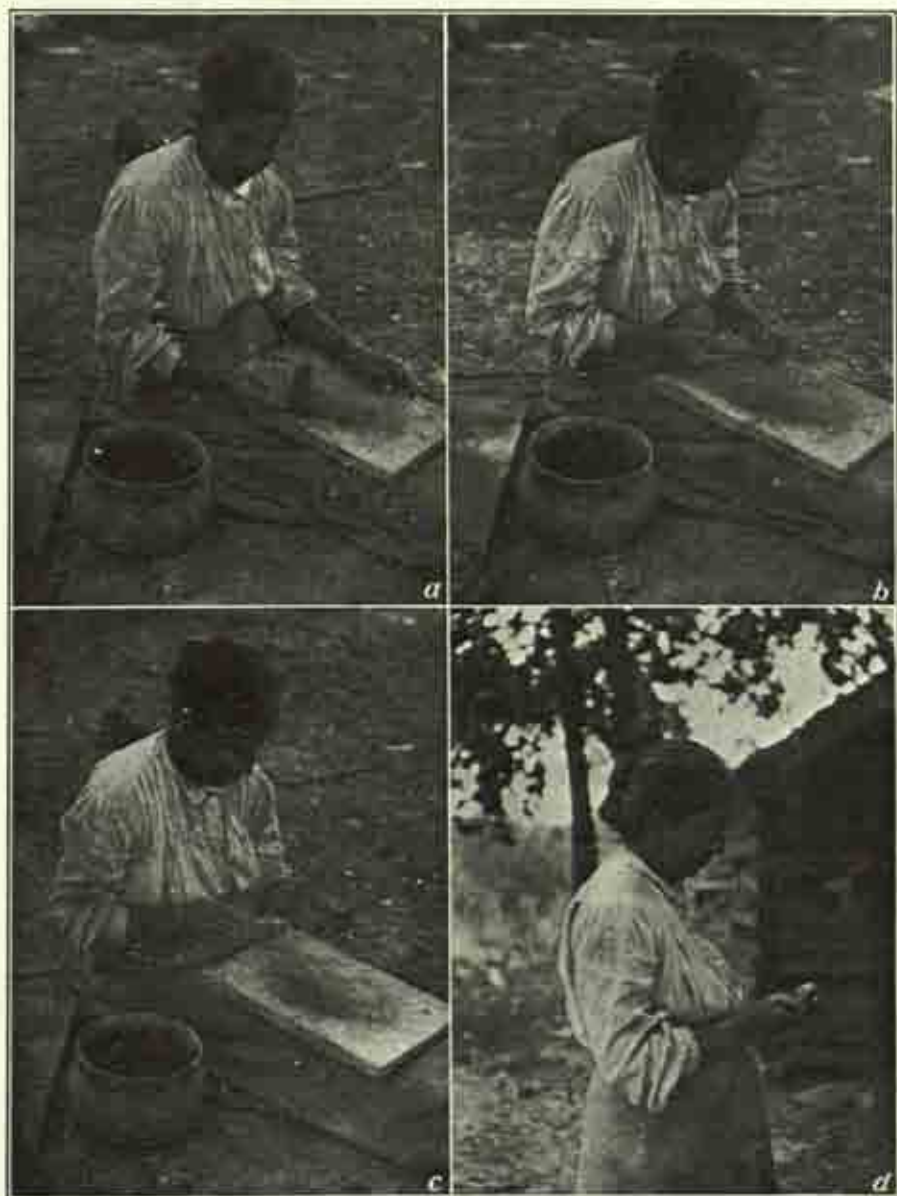
When the material had been brought in, John placed some of the moist pipe clay upon a little platform of boards, and began to pound it with his pestle, as shown in pl. XIX, *b*. As the clay flattened and spread under this vigorous treatment his wife turned it back toward the center of the board, deftly picking out bits of stick and stone the while. As the pounding continued, dry pan clay and water were added until the proper proportions—about two parts of pan clay to one of pipe clay—were reached, and the mass had attained the proper consistency. No tempering material was used. This done, the clay was divided into little wads, which Mrs Brown laid upon a plank and rolled out into long cylinders with her hand, as shown in pl. XIX, *c*. Then deftly shaping a little disk of clay to serve as the bottom of the future vessel, she laid it upon another piece of board and coiled upon it one of her clay rolls (*d*), which she pinched fast with wet fingers. Another and another roll followed, each one pinched fast to the last until a rude pot form was made (*e*). Moistening her musselshell, the potter began to blend the coils on the outside, always smoothing the clay upward. As shown in *f*, while smoothing any part of the wall of the embryo jar she supported it on the inside with her other hand. Still using the shell, and from time to time a bit of gourd, both kept wet in a vessel of water standing near, she then blended and smoothed the inside of the vessel in similar fashion (pl. XX, *g*). During these processes the jar was seen to increase gradually in size as its walls became thinner, until at last, the smoothing finished, it had attained

the desired dimensions. Then Mrs Brown leveled off the rim and bent it to suit her fancy (*k*), when the vessel was set away in an airy place to dry. If handles or legs are desired, holes are bored at the proper places with the cane knife when the vessel is dry enough to be firm, through which fresh clay rolls are thrust. When these have been clinched and smoothed on the inside, the protruding portions are modeled into neat handles, or legs, as the case may be. One or two days, depending upon the weather, are required to dry the ware before submitting it to the next process.

When a batch of vessels was dry, John Brown again took a hand in the work and scraped the surface of each one very carefully with iron and cane knives (pl. xx, *i*), reducing all irregularities and making the walls thinner. Much of the symmetry and attractiveness of the finished product depends upon the care with which this work is done. Frequently musselshells are used for scraping. When he had finished a vessel, John handed it to his daughter, who moistened it with a damp rag and rubbed it carefully all over with the waterworn pebble kept for that purpose, removing all trace of scraping (*j*). A fine polished surface may be produced, they told me, by patient use of this primitive tool. For rubbing around handles (*k*), legs, and other difficult places, she used a polished bone smoother, resembling closely the blunt awl-like bone implements sometimes found in archeological excavation on the sites of ancient Indian villages.

After the rubbing, and while the surface of the vessel was still damp, she decorated it with a simple geometric pattern, the lines of which were produced by drawing the edge of the cane knife firmly across the clay (pl. xx, *l*). The point of the cane was rarely used. In modern work a milled coin rolled along the clay takes the place of the old "roulette," or toothed wheel, and twisted wire is the up-to-date substitute for bark twine in making cord patterns.

Burning of pottery is now generally done in the house on the hearth of the large open fireplace, to avoid drafts; but some years ago the firing took place out of doors in a gully, or hollow, a still night being usually selected. The Browns arranged an old style out-door burning for my benefit, with the warning that, as a stiff breeze was blowing, some of the pieces might crack.



CATAWBA PIPE MAKING

a, The First Stage—a Clay Cylinder. *b*, Bending into Form. *c*, Perforating the Stem. *d*, Decorating.

The first step was to prop the vessels up around the fire, their mouths toward the blaze, as shown in pl. XXI, *m*. Here they remained for two or three hours, a peculiar black color spreading over them as they grew hotter and hotter. When this color had become uniform—a sign that they were hot enough—John raked the blazing brands out of the fire and inverted the vessels upon the coals and hot ashes (*n*) which were then pushed up around them and the whole covered thickly with pieces of dry bark pulled from old pine stumps, as shown in pl. XXI, *o*. When the bark had burned away, the red-hot vessels were pulled out and allowed to cool slowly around the fire. One had cracked, as predicted, and all the pieces were more or less mottled by drafts. The black color of the first heating, however, had given place to the typical reddish yellow of Catawba pottery. I was informed that when uniform shiny black color is desired, the ware, after the preliminary heating, is imbedded in bits of bark in a larger vessel of clay or iron, which is then inverted upon the glowing coals and covered with bark. After one or two hours the firing is complete and the vessels have acquired a brilliant black color which seems to penetrate their very substance.

In making pipes, a thick roll, usually of pure pipe clay, is produced (pl. XXII, *a*); this is bent roughly into form (*b*) and the stem hole perforated with the slender end of the cane knife (*c*). It is then laid away, and when partly dry is trimmed and the bowl gouged out with an iron knife or an implement of cane. When perfectly dry it is moistened on the outside with a damp rag, polished with the rubbing stone, and decorated (*d*) with the cane knife or a bit of wire. Sometimes pipes, particularly the "Indian-head" style, are formed by pressing a roll of clay between the halves of a double pipe mold, greased or sprinkled with ashes to prevent sticking. Then the process goes on as before. Pipes are stacked up between two fires to receive their preliminary heating; but after this the burning takes place as with pottery, and the black color, which is more popular for pipes than for pottery, is produced in the same way, the pipes, after the preliminary heating, being packed into the containing vessel between layers of bark chips.

For making pipe molds an original model is shaped by hand,

and after being burned in the usual way is greased and forced down into a flattened cake of fresh clay until half imbedded; then the surface of the cake is also greased to prevent sticking, and another cake laid over and pressed down, forming a complete mold of the original pipe. When dry these half molds are removed from the model and burned; then they are ready for use (pl. XXIII, *o*, *p*).

Survivals of native ceramic art among the tribes east of the Mississippi are now very rare. It has been long abandoned by the Iroquois, and the northern tribes generally, although a few of the mixed-bloods on Martha's Vineyard, Massachusetts, make a so-called "Indian pottery" for the tourist trade, from the gaudy-colored clays of Gay Head; but this is manufactured on a potter's wheel and can hardly be called a survival of the old native art. Moreover, I was informed, much of the ware sold as "Gay Head Indian pottery" is made by white men. The Pamunkey Indians of Virginia—a mixed-blood tribal remnant—still make a few earthen pipes, some of which are of old form, and all of which, I understand, are made by old-time methods to a great degree. The few vessels manufactured now by the Pamunkey for curio hunters are plainly crude attempts to resuscitate the art practised by the grandmothers of the present generation, who made and sold large quantities of ware for domestic use to their white and negro neighbors. This older pottery, judging from the single specimen I collected for Mr Heye, and others which I have seen, was tempered and shaped by native methods, but the forms are evidently of mixed or European origin.

The Seminole of Florida remember pottery, but I found no specimens among them. "Old pot, Indian got 'um long time ago, no good too much. Fall littly bit, break 'um." Such was old Crop-ear Charley's explanation, when I inquired why pottery was no longer made. No pottery was found among the Chitimacha of Louisiana, the last piece having been broken within ten or fifteen years; but among the Koasati, also in Louisiana, I found two excellent pieces of old types, although the art is no longer practised by them. The Choctaw of Mississippi have made no pottery for many years, and, as near as I could discover, the last piece kept by the Indians has been broken. The Eastern band of Cherokee in North Carolina still boasts a few old potters, but owing to the lack



CATAWBA POTTER'S TOOLS

a, b, Mussel (*Unio*) Shells. c, d, e, Gourd Implements. f, Wooden Implement. g, Iron Knife. h, i, Implements of Cane. j, Wooden Perforator. k, l, m, Smoothing Stones. n, o, p, Pipe Molds. q, r, Bone Implements.

CATAWBA POTTERY

a, d, e, f, Cooking Vessels. b, Jar for Water or Milk. c, Tripod Cooking Vessel. (George G. Heye Collection)

of demand for their product, the art has been practically abandoned. Cherokee vessels are, or were, made in rather crude and archaic forms, but like Catawba pottery usually differ from most prehistoric vessels in having flat instead of rounded bottoms. Like the prehistoric pottery of the southeastern states the recent Cherokee ware shows decoration applied with a carved paddle.

But, as I say, the ceramic art of the Cherokee is dying, while the other Eastern tribes retain little more than vestiges and memories. The Catawba alone possess the distinction of preserving, alive and vigorous, the potter's craft of their ancestors.

NEW YORK CITY.

VESTIGES OF MATERIAL CULTURE AMONG THE CANADIAN DELAWARES

By M. R. HARRINGTON

During the summer of 1907 I found the opportunity to visit the three bands of Delaware Indians, or as they call themselves, Lenápe, now residing in Canada, for the purpose of searching for specimens which might cast light on their old material culture. The quest met with unexpected success, a large collection being procured, the bulk of which has now been added to the private collection of Erastus T. Tefft, Esq., of New York City, with whose permission the accompanying photographs are reproduced. The remainder of the material was divided among the collections of George G. Heye, Esq., the New York State Museum, the American Museum of Natural History, and the collection of Mr Alanson B. Skinner of New York.

The Lenape bands visited were the Delawares of Grand River, said to number 164, situated on the Six Nations reserve near Hagersville, Ontario; the Munceys of the Thames, numbering about 118 on the Muncey reserve near Middlemiss, Ontario; and the Delawares of Moraviantown, 332 strong on the Moravian reservation near Bothwell, Ontario. Although retaining Indian physical characteristics to a large degree (pl. xxiv), all these bands are rapidly losing what little remains of their old culture. Even the Delaware language is passing out of use at Grand River, and to a less degree at Muncey. Only at Moraviantown is it retained in daily use by the majority of the tribe. Organized ceremonial observances persisted at Grand River until within the last decade, but so far as I could learn nothing of the kind has been seen among the other two bands for many years. The old manufactures are also practically extinct, the only survivals being the making of a few wooden spoons, bowls, mortars, and bows and arrows, mainly at Moraviantown, the preparation of corn foods in Indian style, the weaving of the splint sieves and other baskets used in this process in all the reserves,



(a) FAMILY OF CANADIAN DELAWARES

(b) DELAWARE INDIAN WITH "MUNCY TREATY" WAMPUM BELT

and, at Moraviantown only, the manufacture of a little beadwork and a few corn-husk mats.

There are still to be found however, or were until I made my house-to-house canvass, a considerable number of old specimens saved by the Indians as mementos or on account of their intrinsic usefulness.

Among domestic utensils of Indian style the wooden spoon or ladle (*χησέμwhanēs*) is perhaps the most abundant. Like the Iroquois spoon, it consists of an almost circular bowl attached to a comparatively short handle sloping upward and outward from one edge. Unlike the spoon of the Iroquois, the decoration of the Lenape type is confined to geometric designs carved upon the handle, life forms being wanting. One very large ladle (*w'at!ēmwhanēs*) with a long handle was used for dishing corn soup at feasts. Bowls, called *χασίνjo*, or *alakānts*, generally carved from black ash burls, occur in two forms, hemispherical and oval, the former having an approximately horizontal rim, the latter a rim rising in graceful points at both ends, sometimes perforated to serve as handles. Some of these bowls, which vary considerably in size, are beautiful specimens; the curly grain of the wood, the rich color and polish of age and use, and the graceful form, all adding to the effect. Stirring paddles of wood (*ēwaχi'gun*), sometimes elaborately carved and resembling those of the Iroquois, were also found, together with a few large needles (*wat'ēskwāmbilamē'kwan*) of hickory wood for sewing together the coils of corn-husk mats. Two cradle boards (*ambisūn*) are about two and one half feet long, tapering from head to foot, and provided with an elaborately carved bow to protect the child's head; the wooden braces holding the bow in position are also carved. Like the cradles of the Iroquois, these Delaware specimens differ from the eastern Chippewa form in having a permanent instead of a movable foot-board. One of the most unusual objects, found at Moraviantown, is a low seat, roughly carved to represent a dog (*mwākanēs a'papōn*). Wooden mortars (*takwahagūn*) used in crushing corn may still be seen — sections of tree trunks about two feet high hollowed at the top to receive the grain. Smaller mortars were used in preparing herbs. The pestles (*skwahigūn*) are of wood, the middle third being shaved down to form a

handle after the style common among the Iroquois; but in former years, before the Lenape left their old home near the Atlantic seaboard, it is possible that long stone pestles were employed, such as are still used by the Mohegan in Connecticut and until recently by the remnants of Algonquian tribes lingering in Massachusetts and on Long Island.

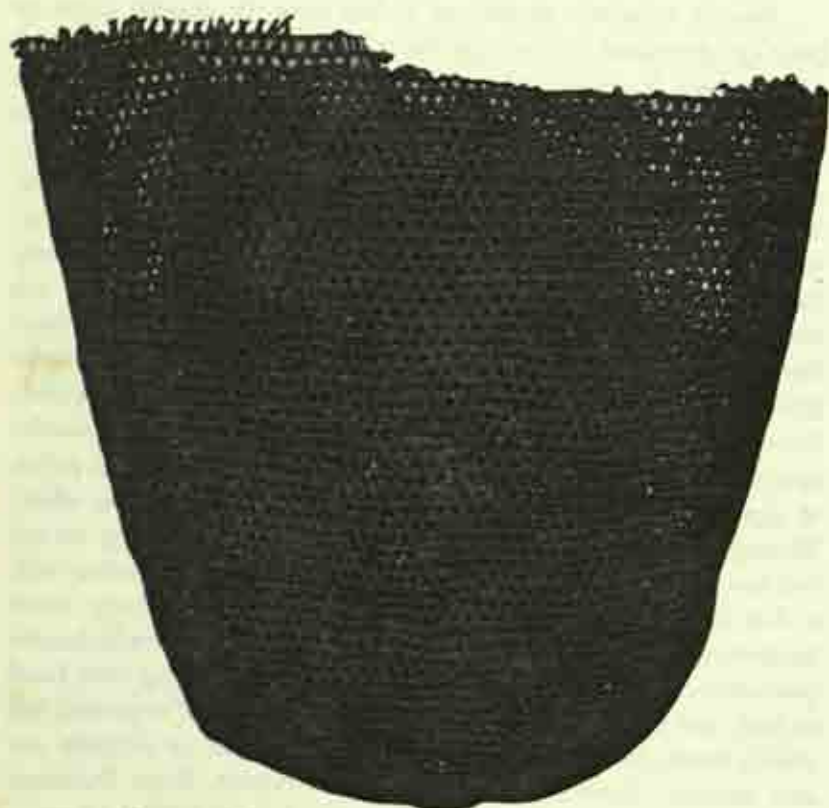


FIG. 95. — Delaware Indian corn sieve of twisted root fibers.

The most interesting basket I ever found among the Delawares, or, indeed, among any eastern Indians, is the one illustrated in fig. 95. It is a bag-shaped corn sieve made of twisted root fibers beautifully wrought, the weave being a fine open-work consisting of two sets of intersecting diagonal strands fastened together at the intersections with horizontal twined strands. Combining a similar

form and weave are the much coarser bag-like baskets of basswood bark used by several bands of Mohawk for hulling corn, but in these the horizontal strands are not twined. The weave in its entirety, but on a much coarser scale, was observed in one sieve basket collected from the Mohawk of Bay of Quinte reserve, Ontario, but in this case the material is splints. The Delaware name for the basket is *pawūnigān*, meaning simply a sieve. The specimen is very old, and was bought from Betsy Pheasant of Moraviantown. To me it was a distinct surprise, for I had never ventured to hope that any of the fine baskets, evidently twined, mentioned in early accounts as being used by eastern Indians, might survive to the present day.

One coiled grass basket (*wāngēmusk^mm^kkwīnotai^r*) was collected, a style which was probably once widespread among the eastern Algonquian tribes. I found two somewhat similar baskets of beach-grass among the mixed-blood Indian remnant on Marthas Vineyard, Mass., and the same style is manufactured of sweetgrass today by the Chippewa of Ontario. The Martha's Vineyard mixed-bloods told me that within the memory of some of the older people the coiled beach-grass baskets were made for many purposes to the exclusion of splint baskets, and even pack-baskets were of similar weave. Twilled splint corn sieves (*pawūnigān*) and hulling baskets (*kē tchitigān*) were numerous and differed but little from those of the Iroquois. The nearest approach to aboriginal fabrics is seen in the pack-strap (*ā'pīs*) of which a number were procured. For carrying burdens in baskets or otherwise these were very useful, being passed across the forehead or chest of the user. They were made of the fibers of Indian hemp, the milkweed, or the inner bark of the slippery elm, boiled soft and rolled or twisted into cord with the hand on the bare thigh. The cords were then tightly woven into a strap two to three inches wide and a little more than two feet long, provided with a hole, or eye, at the ends, through each of which a long cord of Indian hemp or other material was fastened. Decoration was effected by the introduction of materials differing in color from the groundwork of the strap, and by embroidery with red yarn. It is said that, as with Iroquois, colored hair and porcupine quills were used formerly in this

embroidery. Twine of the sort used for pack-straps was often employed for other purposes, and a specimen of basswood bark rope (*wikpiamün*) was found. Coiled mats (*ge^l ka^s ste^l ħin^s*) of varying size are still made of corn-husk braids sewed together with basswood bark by the aid of the wooden needle before mentioned. Formerly these were made large enough to sleep on, but I could locate only one specimen of this size.

Very few old specimens of costume showing any Indian character could be found—merely a few pairs of women's leggings (*kakōnāl*), a beaded shoulder bag or two (*etwandi^l gān*), and one pair of infant's moccasins (*ma^s ksūn*). The leggings were of blue or black broadcloth worn with seam in front. Both this seam and the lower edge of the leggings were decorated with beadwork, sometimes fine examples of the delicate lace-like geometrical patterns such as are seen in the old beadwork of the Iroquois. One pair elaborately ornamented with ribbon-work was found. The pouches resembled the few I have seen among the eastern Chippewa, but the beadwork upon them was of a somewhat different character, difficult to describe. The infant's moccasins were puckered to a single seam down the front, and sparsely decorated with very small beads. Two small clean-cut holes in their soles, evidently made with a purpose, suggest an old Iroquois practice, but I could get no Delaware confirmation of this. The Iroquois invariably, in former years, and still to a certain extent, perforated the soles of the baby's moccasins to prevent the ghosts from coaxing away its soul; for the child can refuse to listen to their pleadings on the ground that he has holes in the soles of his moccasins and so cannot travel the spirit trail.

A skirt of broadcloth (*ma^s zhapikotai*) beaded along the hem and part-way up one of the vertical seams; a pair of man's leggings (*kakōnāl*) with the seam, decorated with ribbons, worn at the side; a man's shirt of cambric (*hambut*); a woman's calico overdress; a pair of beaded moccasins (*ma^s ksūn*) puckered in front to a tongue like those of the eastern Chippewa and Mohawk—all of comparatively recent make—were secured. Two beaded head-dresses (*agū^s kwēpi*) of the "feather-crown" type complete the list of clothing. This form of head-dress I at first considered a recent

adaptation of the familiar war-bonnet of the Plains tribes, but the fact of its distribution among the eastern Chippewa and Delawares, and all the Iroquois tribes, leads me to suspect that it may be an old form.

Ornaments of silver were made formerly by the Delawares, comprising brooches, mainly of circular form (*anil'xaman*), ear-rings (*saxkaxaihonil*), hair bands (*unsekwapesun*), finger-rings, and crosses (*oclaheken*), both double and single; for all of which coin silver was generally used. The processes of manufacture — hammering, cutting, embossing, and engraving — seem to have been similar to those used by the Iroquois silversmiths; but many of the Iroquois forms are absent or rare among the Delawares. One variety of brooch, however, of which several were collected at Moraviantown, is exceedingly rare among the Iroquois. Two examples of this hemispherical form, which is perfectly plain, with small central opening, may be seen on the left breast of the little "Nahneetis" figure (pl. xxvi, *b*).

A necklace (*tekwalaletak*) was purchased at Grand River, which I think represents an ancient style. It is composed of the long spiral shells of what appear to be several species of fresh-water gastropods, each one punched through near the lip to receive the suspending cord of Indian hemp. This type has been long in use among the Iroquois, as archeological evidence shows, but I have no data upon which to base a similar statement for the Delawares. A number of strings of wampum were obtained, some for ceremonial use, some for ornament, and one belt of white wampum twenty-nine inches long and seven rows (about two inches) wide, with longitudinal strands of deerskin and transverse strands of Indian hemp. This has the letters G. T. (Georgius Tertius?) in blue wampum on both ends, and is said to commemorate a treaty between the Canadian authorities and the Muncey band of Delawares. The belt and its former owner, Jacob Dolson, may be seen in plate xxiv, *b*. Wampum is called *kakwuk* by the modern Delawares, and the word *oxkwásun* was given me as the name for the belt. Glass beads of many kinds were much used formerly.

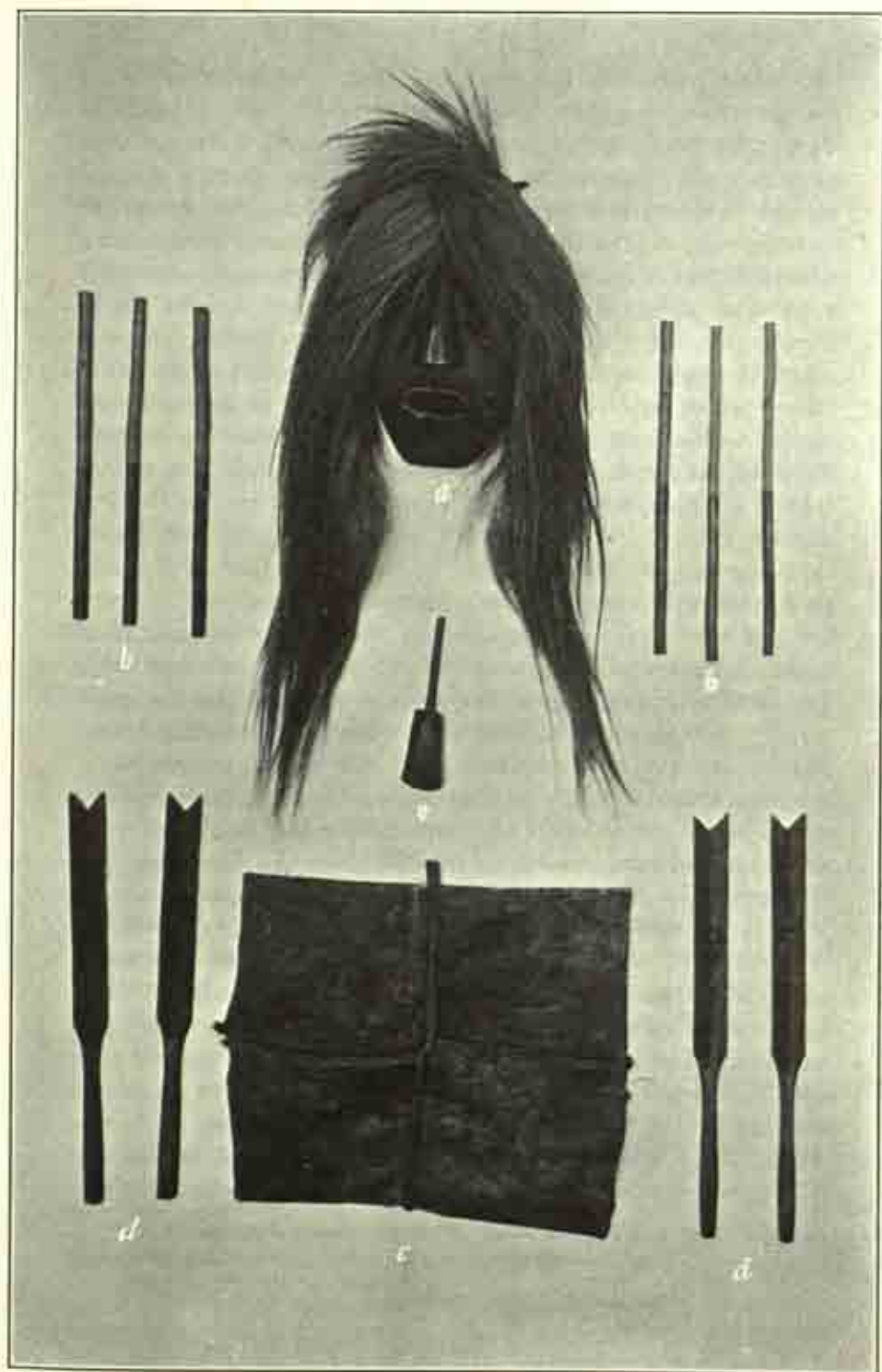
Several typical stone gorgets with two perforations were obtained from the Muncey band, who gave them the name *tapiim-*

blawān and volunteered the information that such objects were tied upon braids of hair; but whether they were merely to hold the braids together in the back, or as an ornament, or as a support for a feather, was not made clear. In the National Museum collection at Washington there is a similar stone gorget, supposedly from the Chippewa, upon which has been tied, perpendicular to the surface of the stone, a bone tube, evidently intended for supporting a feather.

The bows (*matā!*) collected from the Delawares average about four feet long, and represent the simple straight type common among the Eastern tribes; while the arrows ("*alō's*") are of two types: blunt, for stunning small game; and sharp, for piercing; the latter being simply brought to a point and hardened by fire, without a separate head of any sort. Now and then a war-club (*pw'aw'ās*) may be found, generally of quite recent manufacture and consisting of a heavy ball attached to a short handle, all carved from one piece of hard maple or other suitable wood. A few old pipe-tomahawks are still treasured by the people as mementos of their ancestors.

In the old religious ceremonies of the Delawares at Grand River a very peculiar drum was used, a dry skin folded in rectangular form and beaten with four sticks, each bearing a tiny human head carved in relief. I secured the set of four original sticks from Michael Anthony (*Na'nkūmāōya*), and employed him to make me a reproduction of the drum, as the original had been destroyed. This he did, and in addition made six painted sticks also used in the ceremony. The description of how these articles were used, pieced together from several Indian accounts, may prove of interest here.

It appears that the Delawares of Six Nations Reserve formerly held what was known as a "General Thanksgiving" ceremony called in Lenāpe *Gitclākan*, twice a year, once in the spring and again in the fall. At these times it was customary to meet in the Cayuga long-house, borrowed for the occasion. At a certain point in the proceedings (I will not attempt a consecutive description from hearsay testimony) a man stood up and recited, in a rythmical sing-song tone, his dream—the vision of power seen by him in his youth. *Na'nkūmāōya* remembered how one old man was accus-



OBJECTS FROM THE DELAWARE INDIANS

a, Mask. b, Painted Striking Sticks. c, Drum. d, Drumsticks. e, Cow-horn Rattle.

tomed to tell about a duck, half black and half white, which had appeared to him. Between the verses of the dream four musicians kneeling at the drum (*pw'awahe'gān*) began a plaintive song, beating time with the carved sticks (*pw'awahe'gānūk*). As they sang the reciter swayed his body to and fro while a group of dancers gathered on the floor behind him danced with a sidewise step. Before the ceremony, poles were laid lengthwise along both sides of the council house, and against these, at intervals, three on a side, the painted sticks, called *mkāāh'gān*, were laid. If anyone in the crowd felt "especially happy" he was privileged to strike with one of these sticks upon one of the poles in time to the music.¹ The carved heads on the drum-sticks meant that human beings were giving thanks; the lengthwise painting of the sticks, half black and half red, implied that men and women were together in thanks-giving, the black representing the warriors, the red the women. The fork at the striking end of the sticks was to give a sharper sound. The dyes for producing the colors were made by boiling bark, the black being soft maple (*seχ'kimtusi*), and the red, red alder bark (*witō'pi*). The drum was encircled by a cord of Indian hemp, as may be seen in plate xxv, which illustrates drum (*c*), carved drumsticks (*d*), and painted striking sticks (*b*).

In another part of the same ceremony wampum was used in the form of strings and bunches, both of which were represented in my collection from the Delawares. At least thirteen of the strings were used, each one made different by different combinations of the white and purple beads. These thirteen, it is said, represented respectively (1) Earth; (2) Plants; (3) Streams and Waters; (4) Corn, Beans, and Vegetables; (5) Wild Birds and Beasts; (6) Wind; (7) Sun; (8) Moon; (9) Sky; (10) Stars; (11) Thunder and Rain; (12) Spirits; and (13) Great Spirit. At the ceremony these strings were laid upon a bench before a speaker, who picked them up one by one as he made his address, each string reminding him of one part of his speech. He began, my informant told me, by explaining that the Great Spirit had made all things—the earth, plants, streams, and waters—everything. Having thus enumerated all

¹ This is seemingly a survival of a custom, similar to that among the Plains tribes, of recounting honors gained in battle when coups were struck.

the things represented by the wampum, he proceeded to speak to each one directly, holding the appropriate string in his hand. Thus he gave thanks to the Earth for the benefits it gives to man, and prayed that its blessings might continue; then thanked in the same way the Plants, the Streams and Waters; the Corn, Beans, and Vegetables—each one in turn. As he finished each string he handed it to an attendant, who laid it aside. When his long speech or prayer was finished, he announced, "We will now enjoy ourselves," and selected a man to distribute little bunches of wampum, three beads in each, which served as invitations to join in the dancing that followed. These bunches were delivered only to a certain number of those known to be "sober and honest" among the crowd in the long-house. If any person wishing to dance failed to get invitation wampum it was his privilege to ask for one of the branches, which was given him if he was considered qualified. The first man receiving wampum arose first; then the others, until the dancers were all on the floor. It is said that this dance, which sometimes lasted all night, did not circle around like most of the Iroquois dances, but each performer remained in about the same spot.

I was told that in this dance a small rattle without a handle and made of turtle-shell was used, probably like the box-turtle rattle still used in the annual Planting Dance by the Seneca and Cayuga. No specimens of this were seen, however, among the Delaware; the only rattle (*côwânhegûn*) found, which was used in the Mask dance, being made of cow-horn (pl. xxv, e).

But one mask (*mîzînk*) was obtained. It differed from those of the Iroquois chiefly in being cruder, and also in decoration, the lines being burnt into the wood as shown in plate xxv, a, instead of being painted or carved. The original use of the mask had to do, in part at least, with healing the sick, but Isaac Montour (*Kap-yû hûm*), from whom I bought it, failed to make himself clear as to the details. Similar masks are, or were until recently, used by the Delawares now in Oklahoma, according to the Census Report for 1890.¹ The same account also mentions the use of a dried skin as a drum.

¹ Report on Indians Taxed and Not Taxed, U. S. Census, 1890, p. 299.



a

"PABOOKOWAH, THE GOD THAT BREAKS DOWN DISEASES"



b

"NAHNEETIS, THE GUARDIAN OF HEALTH"

For comparison I introduce here the very old Missisauga (eastern Chippewa) mask shown in plate xxvi, *a*. This was bought from Dr Peter E. Jones, of New Credit reserve, whose father, Reverend Peter Jones, the noted half-blood Missisauga missionary, collected the specimen. Dr Jones identifies the mask with the one called *Pabookowaih* illustrated on page 85 of his father's book, *History of the Ojebway Indians*, and says he remembers when it still bore its crown of feathers and deer-hair, and its fringe of rattling deer-hoofs. The differences between the mask and the picture he attributes to inaccuracy of drawing.

The eyes of the mask are made of brass, probably cut from an old kettle, and to its back is tied an ancient turtle-shell rattle, the handle of which projects downward like a handle to the mask. I was informed by old eastern Chippewa that such masks were rarely worn, but were carried by the handle in curing the sick. Peter Jones called the mask "the god that breaks down diseases." Such masks were kept by certain shamans, it is said, hanging in little bark houses built especially for the purpose, and were sometimes used in divination. They represent, it is claimed, a race of mythical beings known as *Pabookowaih*, or, as I recorded the name, *Pabokowát*.

Also connected with shamanism were two "medicine-bags," one a mink-skin, the other a weasel-skin taken off whole, the only opening being at the throat. The edges of this opening were bound with cloth in each case, and ribbons and, if I remember correctly, bells were attached to the legs. The contents were a few bits of root in each, and a bundle of tiny sticks in one of the bags. These medicine-bags were sent to me from Moraviantown after I had returned home, and I was consequently unable to get satisfactory explanations, but I was told in a letter that the mink-skin was used in a dance before going hunting. No explanation of the contents of the bags was received.

Perhaps the most interesting Delaware specimen of all is the little wooden image, about eight inches high, bought of Dr Jones, which his father, Reverend Peter Jones, described and illustrated in his book under the name "Nahneetis, the Guardian of Health." He says :

I have in my possession two family gods. One is called *Pabookowaih*—the god that crushes or breaks down diseases. The other is a goddess named *Nahneetis*, the guardian of health. This goddess was delivered up to me by Eunice Hank, a Muncey Indian woman, who with her friends used to worship it in their sacred dances, making a feast to it every year, when a fat doe was sacrificed as an offering, and many presents were given by the friends assembled. She told me she was now restored to worship the Christian's God, and therefore had no further use for it.¹

There can be no doubt in this case concerning the identity of this specimen with the one illustrated in the book quoted. It will be noticed however by those who are familiar with Peter Jones' illustration that *Nahneetis*, like many humans, has lost her hair in her old age (pl. xxvi, *b*). An interesting feature of the specimen is the primitive skirt, which is made apparently by belting a blanket-like bit of cloth, bound at the edges, around *Nahneetis*' waist. A vestige of this method of making a skirt survives, I think, in the form of the beaded strip running up one of the vertical seams of the more modern Indian skirt, among both the Delawares and the Iroquois.

This concludes my notes on the Canadian Delawares, but I hope soon to visit the Lenape living in what is now Oklahoma, where additional material will, I hope, be obtained.

NEW YORK CITY.

¹ *History of the Ojebway Indians*, p. 87, 1861.

THE SYMBOLIC MEANING OF THE DOG IN ANCIENT MEXICO

By HERMAN BEYER

As I have shown in my paper on "The Dragon of the Mexicans"¹ the last of the thirteen constellations of the old Mexican zodiac was regarded as the image of a dog's head and therefore called *itscuintli*, "dog." This constellation, as the last of the series, was naturally connected with ideas like end, death, underworld.

Thus we understand why, with the Mexicans, the dog became the animal of the dead. When the ancient inhabitants of Anahuac burned a corpse they killed a red dog and laid it beside the dead body. They thought that four years after death this dog had to carry the soul over Chicunauhapan, the "nine-fold stream" that flows around the innermost hell, the final abode of the dead.² A small artificial blue dog, the *xolocoscaltl*, was a part of the ceremonial dress which the effigy of the dead warrior wore.³ Mictlantecutli,



FIG. 96.



FIG. 97.



FIG. 98.

the "lord of the realm of the dead," appears as patron of the day-sign *itscuintli*. The Mayan hieroglyphic of the dog consists mainly of the thorax of a skeleton.

Figure 96, which closely resembles the signs of the Maya day *oc* (figs. 97 and 98), the equivalent of the Mexican *itscuintli*, "dog," signifies, according to the late Professor E. Förstemann, "end."⁴ In

¹ *Globus*, vol. 93, p. 158.

² Bernardino de Sahagun, *Historia de las Cosas de la Nueva España*, 3 app., chap. 1.

³ *Codex Magliabecchiano*, XIII, 3, fol. 72.

⁴ Die Mayahieroglyphen, *Globus*, vol. 66, p. 78.

both cases the sore cropped ears of the dog, which were a characteristic of that domestic animal in primitive Mexico, are rendered prominent. A similar head with another suffix was the hieroglyphic of the Maya month Xul, and *xul* likewise means "end."

The lord of the 17th day sign *olin*, and of the 16th division of the tonalamatl *xolotl*, is, as we learn from the picture writings, the god who carries the sun through the underworld. The interpreter of the Codex Telleriano-Remensis (fol. 20) says that the sun goes to shine to the dead. The peculiar disc of dark feathers which Xolotl is represented as having on his back on page 76 of the Codex Nuttall we may thus take for a likeness of the night sun, the sun of the underworld. *Nani olin*, "four movement," is used as a hieroglyphic of the sun. By *olin* was primarily meant the

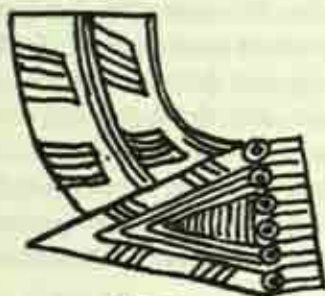


FIG. 99.



FIG. 100.



FIG. 101.

movement of the fire-drill, as the word stands for the constellation *mamal-huatzli*, i. e. "fire-sticks." This elucidates the relation between the sun and movement. Now this mythical personage Xolotl is generally represented with a dog's head, sometimes even as an entire dog.¹ The Mexicans had a certain species of dogs called *xolo-itzcuintli*; the Zapotecs named them *péco-xolo*. All this shows that Xolotl, who carries the sun, has been conceived as a parallel to the guide and carrier of the human soul, the dog.

Of Xolotl it is said that he was the brother of Quetzalcoatl,² and he nearly always wears ornaments and paint of the latter. Quetzalcoatl represents the Mexican zodiac, but the last sign of it had also an independent existence; it was personified by Xolotl.

¹ *Codex Vaticanus* No. 3773, fol. 29 and 93.

² *Codex Magliabecchiano*, XIII, 3, fol. 33 verso.

Thus the pictures of Quetzalcoatl in the form of a serpent do not have the peculiar end part of the Xiuhcoatl, the "serpent of the year" (figs. 99-101) which symbolized the entire belt of the zodiac. Xolotl is the twin-brother of Quetzalcoatl, and vice versa. Therefore Xolotl became the god of the twins,¹ and Quetzalcoatl's name can be translated not only as "plumed serpent" but also as "precious twin."

That the tail of Xiuhcoatl (figs. 99-101) which I take to be a conventionalized form of the outlines of the constellation "dog" (fig. 102) was used as a symbolic ornament of Xolotl, is, from the foregoing, easy to understand. But the same emblem is also worn by Tepeyollotli, Chantico, and the mummy of the warrior, and is a

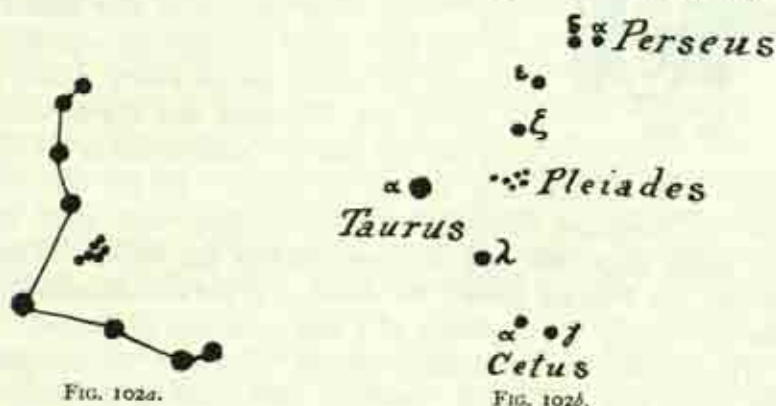


FIG. 102a.

FIG. 102b.

part of the hieroglyphic of Motecuhzoma. Now, Tepeyollotli is a god of the underworld, his name meaning "heart, interior of the mountains," and he appears in the form of a tiger, the animal of darkness. Chantico, the Fire Goddess of Xochimilco, signifies, as her various names and myths indicate, the "sun in the underworld." Of her it is expressly stated that she was transformed into a dog, and one of her names was Quaxolotl. But Xolotl is not only the guide or carrier of the sun, but also, in his form of Nanauatzin, the sun itself. This identification of Xolotl-Nanauatzin we owe to Professor Seler.² The warrior's mummy was adorned also with the

¹ "Xolotle . . . dicen quera señor de los emillicos y de todas las cosas que nascian juntas."—*Codex Telleriano-Remensis*, fol. 19 verso.

² *Kommentar zum Codex Borgia*, II, Berlin, 1906, p. 97.

blue dog, and its relations to the abode of the dead are evident. Motecuhzoma's hieroglyphic consists of two parts, the symbols of the first and of the last constellation,¹ this being with the Aztecs the sign of Xiuhtecutli, the Fire God, whose earthly representative the Mexican king was.

That another variation of the end of the Xiuhcoatl, the "serpent of the year," is the conventional sign for year (fig. 103), needs, I think, no further explanation.

According to Dr Brinton² the Pleiades bore in the Maya language the same name as the rattles of the rattlesnake, *tsab*. The Pleiades are the most conspicuous star cluster of the constellation "dog"; they form the eye of that animal's head (fig. 102, *a*) and are therefore well fitted to denote the whole group which, indeed, is the tail of the Xiuhcoatl and Quetzalcoatl.

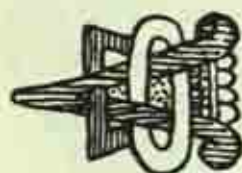


Fig. 103.

Thus the end part of Quetzalcoatl in his serpentine form consists of a number of rattles. At the end of a cycle the Mexicans watched the Pleiades: they were afraid the stars might stand still and darkness swallow the world. When, however, the Pleiades passed the zenith, i. e. the first constellation came to "reign," the beginning of a new cycle was celebrated.³

The first Mexican constellation *cipactli*, "crocodile," is connected with ideas like beginning, creation, birth, and is ascribed to the east, the region where the sun rises, is born. In the same way the final constellation is dedicated to the west, where the stars set, and therefore we find the Tlaloc of the West wearing for helmet-mask the head of Xolotl.⁴

Thus the rôle the dog played in Mexican mythology is wholly explained if we accept the theory that the dog primarily represented a constellation.

GIDDINGS, TEXAS.

¹ That the first figure of the hieroglyphic, the pointed crown *xiuhuitzelli*, really meant the initial constellation, *cipactli*, is proved by the fact that Patecatl, the God of Pulque, wears a similar diadem, and he is called also *Cipactonal*, "the day sign *cipactli*."

² *A Primer of Mayan Hieroglyphics*, Philadelphia, p. 58.

³ Sahagun, 4 app.

⁴ *Codex Borgia*, fol. 27; *Codex Vaticanus* 3773, fol. 69.

WOODEN BOWLS OF THE ALGONQUIAN INDIANS

By CHARLES C. WILLOUGHBY

The proficiency attained in the manufacture of certain household utensils by the Algonquian people is shown by the few bowls and ladles that are occasionally found in old collections or which have been preserved in Indian families. That they were comparatively common in early colonial times is evident from the following quotations. During the epidemic of smallpox in 1635 among the Indians living near the site of Hartford, Connecticut, being too ill to gather firewood they kept themselves from freezing by burning "ye woden trayes & dishes they ate their meals in."¹ Morton, writing of the New England Indians, says: "They have dainty wooden bowls amongst them; and these are disposed by bartering one with the other and are but in certain parts of the Country made, where the several trades are appropriated to the inhabitants of those parts only."² Gookin³ writes of dishes, spoons, and ladles made "very smooth and artificial, and of a sort of wood not subject to split. These they make of several sizes." Josselyn⁴ refers to "dishes, spoons, and trayes wrought very smooth and neatly out of the knots of wood." Loskiel⁵ referring to the Delawares and Iroquois, says: "They make their own spoons, and large round dishes of hard wood with great neatness." These they sometimes sold to the whites for food and clothes.

According to Heckewelder⁶ it was the duty of the young Delaware man about to marry, to provide dishes, bowls, and other necessary vessels for housekeeping, and it was also customary for some men in their leisure hours to make bowls and ladles which when finished were at their wives' disposal.

¹ Bradford, *History of Plymouth Plantation*, Boston, 1898, p. 389.

² Morton, *New English Canaan*, Prince Society, p. 159.

³ Gookin, *Historical Collections*, Mass. Hist. Coll. 1st s., repr. 1859, vol. 1, p. 151.

⁴ John Josselyn, *Two Voyages to New England*, Veazie repr., p. 111.

⁵ Loskiel, *History of the Mission of the United Brethren*, ed. 1794, pt. 1, p. 54.

⁶ John Heckewelder, *History of Indian Nations*, pp. 145, 148.

Strachey,¹ writing of the Virginia Indians, refers to "all their goodly furniture of matts and dishes, wooden pots and platters, for of this sort is all their goodly epitrapzia or vessels belonging to their use for the table or what ells." Marquette² tells us that the Illinois tribes "make all their utensils [*vaisselle*, table utensils] of wood, and their ladles out of the heads of cattle."

The above references while not exhaustive show conclusively that wooden dishes formed a considerable proportion of the household utensils throughout this section, and, taken in connection with old specimens collected more recently from central and western tribes, indicate that they were common to a large part of the Algon-
quian area.



FIG. 104. — Wooden spoons and ladles, Algonquian Indians.

In some sections of Canada, and especially in the eastern part, bark dishes seem to have been more common. Wooden dishes were used also by the Iroquois tribes. Bowls and ladles of Algonquian types occurred among the Winnebago, Omaha, Mandan, and probably other tribes of the Siouan stock. Some of the Siouan tribes probably obtained the more characteristic eastern forms from the western Algonquians by trade, or, like the Winnebago, may have learned from them the art of making these utensils.

Among Algonquians in general the art of the potter was applied almost wholly to the production of cooking pots, and while food was often served in the pot in which it was cooked, pottery vessels exclusively for serving food seem generally to have been unknown, vessels of wood and bark being used for this purpose. Clay dishes

¹ William Strachey, *Historie of Travaile into Virginia Britannia*, Hakluyt Society, p. 59.

² Marquette, *First Voyage*, Jesuit Relations, Thwaites ed., vol. LIX, p. 129.

of more or less conventionalized bird or quadruped form, as well as the typical pottery food basins from the southern section of the United States, were evidently represented in the north by little known utensils of wood having similar forms and functions.

Wooden utensils fall naturally into three classes—ladles or spoons, platters and bowls. The characteristic ladle or spoon, often of bird's-eye or curly maple, is still found among several Algonquian tribes, and the Iroquois, Winnebago, and Omaha. It ranges from the Nascapsee of Labrador to the Omaha of Nebraska, and in protohistoric times probably was common to a large part of the Algonquian area. In some sections, and especially in New England, the primitive type seems to have been modified in early historic times to a form closely approaching the European spoon. There seems to have been but little difference in shape between the native type of individual spoon and the larger ladle that accompanied the common cooking pot and was used especially at feasts for transferring food to individual bowls of wood or bark.

An interesting feature of many of the spoons and ladles is the recurved upper extremity of the handle which catches the edge of the bowl and prevents the immersion of the spoon in the food (fig. 104). In some instances the head of the bird or the full figure of a bird or quadruped is carved in relief at the top of the handle, the beak or tail of the effigy often serving as a hook. The human figure was also used by the Iroquois in decorating the handles of their ladles.

Very few plates or platters of primitive forms have been preserved. They appear to have been circular in outline and one to two feet in diameter.

Wooden plates about a foot in diameter are found occasionally among the Abnaki and Micmac. In recent years these have served as receptacles for dice in the well-known dice game. It is to this widely distributed game that we owe the preservation of good examples of both bowls and platters which were probably made originally for household purposes, their use as gaming accessories being secondary.

Although the bowls described in this paper are of primitive types, it is probable that one only was made with the assistance of stone implements, and in forming this specimen the steel tomahawk

and knife were evidently also employed. The other examples were probably worked out with the curved steel knife — a most efficient tool in the hands of an Indian.

Contrary to the opinion of certain eminent students of primitive American handicraft, the writer believes that the acquisition of steel tools by the American people did not result in an improvement of their art products in general.

The New England colonists early recognized the excellence of the material used by the Indians in making their wooden utensils, and serviceable bowls were wrought by them from bird's-eye maple. Examples may be seen in colonial museums. They have a clumsy

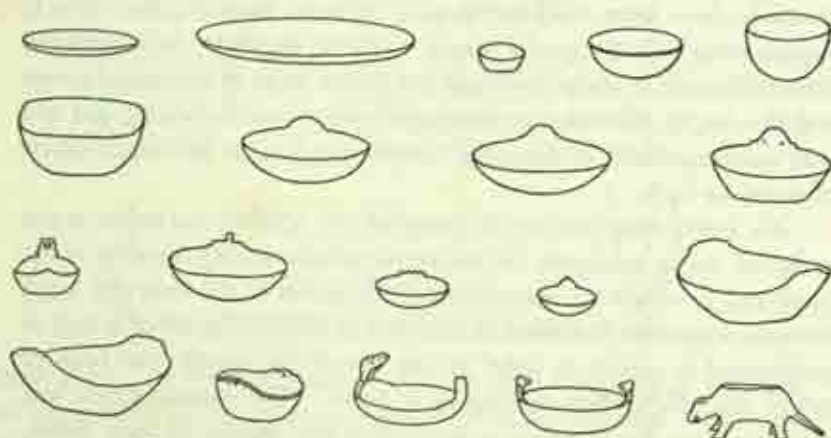


FIG. 105. — Wooden bowls and plates, Algonquian Indians.

appearance however, when compared with native work: their walls are proportionately thicker and they lack the pleasing outlines and variety of design shown by the better class of Indian bowls.

The majority of bowls illustrated are probably individual food vessels. The more elaborate animal forms may have been used for ceremonial purposes, but we have no evidence that they were so employed.

Maple wood was extensively used and highly valued for the manufacture of these utensils, the bird's-eye and curly portions being preferred. Elm was also widely employed. According to De Forest pepperage was used by the Mohegan. This wood is firm, close-grained, and very unwedgable on account of the oblique

direction and crossing of the fiber of the different layers. The knotty, expanded portion at the base of the trunk where the roots join seems to have been often selected.

It is probable that the older New England bowls figured date from the seventeenth century. The specimen shown on plate xxvii, *d*, was for many years in possession of a family near Plymouth, Massachusetts, situated in the territory formerly ruled by the noted Wampanoag sachem Massasoit. It measures fourteen and one-fourth inches in length and eleven and three-fourth inches in width, and is made of elm wood. The handle, or projection rising from the rim, seems to represent the conventionalized head of an animal, the small projections at either side indicating the ears. The two perforations probably served for the passage of a cord by which the vessel could be suspended. This specimen has been long known as "King Philip's samp bowl." Presented to the Massachusetts Historical Society late in 1803, it was used for many years in balloting with corn and beans for members. At the quarterly meeting of January, 1804, it was voted "That the committee of Publication . . . be requested to cause an inscription to be put on King Philip's Bowl and to procure an affidavit ascertaining its authenticity."¹ The following is the inscription appearing upon its inner side.

"A Trophy from the Wigwam of King
Philip when he was slain in 1676
by Richard. Presented by Elez' Richard
his Grandson."

The following memorandum seems to have been the only document relating to the authenticity of the specimen that the committee was able to procure :

"Plymouth, Sept. 14. 1803. Received of
Isaac Lothrop, eight dollars in full for
a wooden bowl formerly belonging to
that illustrious soldier known by the name
of King Philip, son of the celebrated Indian
Sachem, Massasoit, and was a portion of
the trophy assigned to Eleazer Richard
great grandfather of the subscriber who

¹ *Mass. Hist. Society Proceedings*, vol. 1, p. 163.

made one of the party that terminated
the existence of the once princely proprietor.

his
Eleazer X Richard
mark

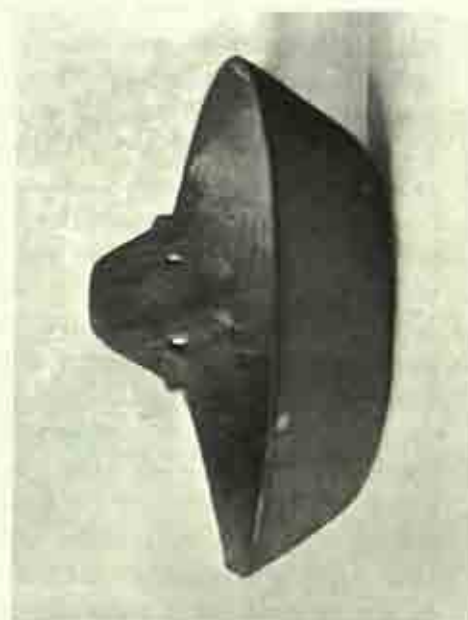
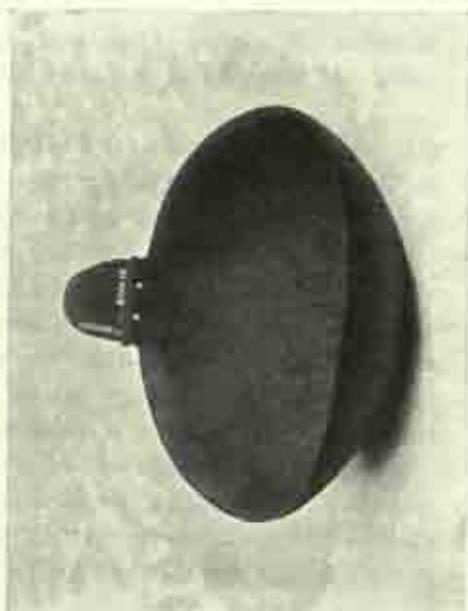
Isaac Lothrop was Register of Probate for the county of Plymouth and a member of the Massachusetts Historical Society. The bowl was evidently presented to the Society by him. In the list of donations prepared for the quarterly meeting of Oct. 3, 1804, appears the entry: "The bowl of Sachem Philip from a Friend."

In the Dexter edition of Church's *History of King Philip's War*¹ is the following note relating to this specimen: "Church's narrative furnishes no evidence, either way, in regard to the genuineness of this relic. I find, however, no trace, either in Savage's fertile pages, or the Colony Records of Plymouth, Massachusetts, or Rhode Island of any Eleazer Richard (or Richards or Richardson) as then living in New England, nor any evidence that any person of that surname served under Church in this campaign."

As every one familiar with the history of Church's campaign knows, Philip was slain by the deserting Wampanoag Indian who guided Church's party at night to the temporary camp of Philip, which was probably without household utensils of any kind. The bowl is probably of Wampanoag origin, and it may have been brought with other booty from Philip's village on a previous expedition, for it was the custom of the English to pillage upon such occasions. It is very doubtful however if it belonged to the household of that chief.

A similar bowl is shown on plate XXVII, c. It is the property of Mrs Emma Baker, a woman of Mohegan blood, and it descended to her from Lucy Tantaquidgeon, a sister of the noted Mohegan minister and missionary Samson Occom (1723-1792). The writer is indebted to William C. Gilman, Esq., for its history and the photograph. The bowl is nearly circular, about eleven inches in diameter and four inches deep. There are two cracks, one of which is closed by a metal clamp. The worn condition of the handle indicates long use. The notch and nearly vertical groove to the right

¹ Part I, p. 153.



WOODEN BOWLS, NEW ENGLAND INDIANS

a, b, c, Mohegan; *d*, Wampanoag. (About one fifth natural size.)

of the horizontal line of wampum formed an original feature of its decoration. This ornamental border may have extended higher on the handle and perhaps to the opposite side, as indications of the groove can still be seen. There was probably at least a corresponding groove and notch upon the opposite side, which has been broken or cut away, the outline of the handle now following the line of the groove. It will be noted that similar decorative features are present in the handle of the vessel shown in figure 107.

At a period perhaps much later than the time of its making the inner face of the handle was inlaid with two rows of white wampum joined at right angles. Six of these beads are missing. For some time this apparently incongruous design was a puzzle to the writer, till finally it evolved into the letter L, the initial of Lucy the sister of Occom and an early owner of the bowl. Lucy must have been about nine years of age when the young Mohegan applied for admission to the Reverend Mr Wheelock's school, and it does not seem improbable that the initial is the work of this older brother. The two perforations are also apparently of later date, but are in keeping with the original design of the bowl as will be seen by referring to plate xxvii, *d*.

There is a Pequot or Mohegan bowl in the hands of a collector in New London that has a zone of wampum inlay upon the outer side.

About the year 1850 John W. De Forest saw in possession of a woman living near the Mohegan cemetery at Norwich, Connecticut, two bowls carved from pepperage knots, each holding about three pints, and said to have once been the property of the great Uncas. One of these was circular, and had a handle like the head of an owl; the other was oblong and had two handles like the heads of dogs facing each other.¹ Correspondence resulted in locating two bowls answering the description of the second specimen described by De Forest, both being known as Uncas bowls. It is doubtful however if either is the specimen referred to by this author.

The first is illustrated on plate xxvii, *b*, and is the property of Miss Emily S. Gilman to whom it descended as a family heirloom. Her Coit ancestors from whom she received it had lived in

¹ De Forest, *History of the Indians of Connecticut*, p. 13.

the Pequot-Mohegan region since about 1650. Nothing further is known of its history. It is skilfully made from a knotty piece of hard wood; is ten and seven-eighths inches long, eight and one-fourth inches wide, and two and seven-eighths inches high at the rim, and has the appearance of great age. The cracks at the side have been repaired with wire clamps. The somewhat conventionalized heads rising from either end are well executed. The mouth is shown, but the eyes are not indicated.

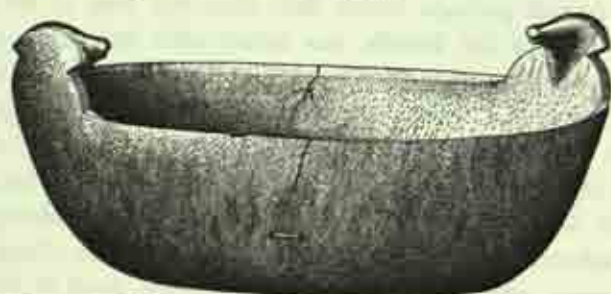
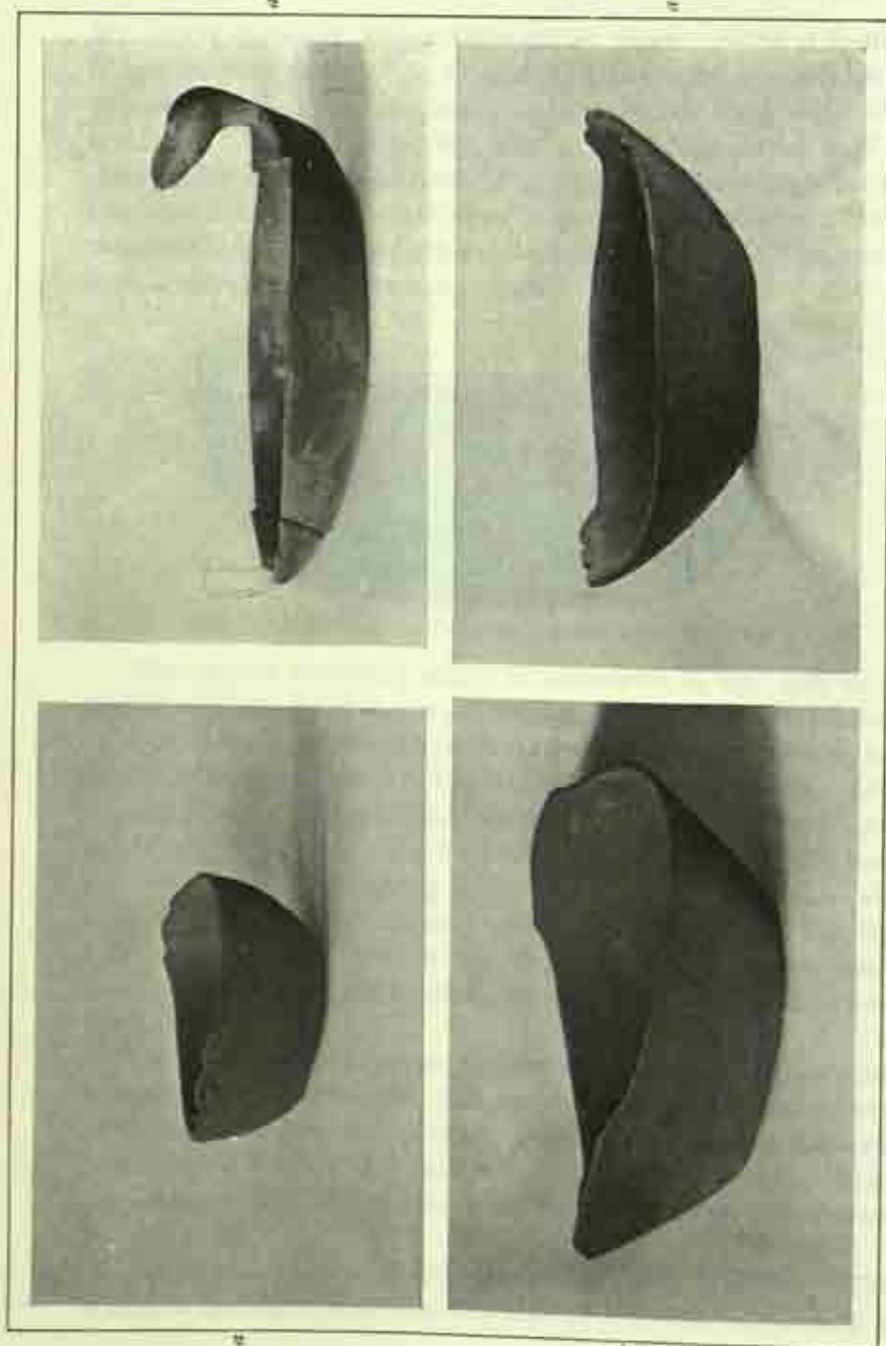


FIG. 106. — Mohegan bowl of wood. (One-fourth natural size.)

The second specimen, which is illustrated in fig. 106, is in the Slater Memorial Museum at Norwich, Connecticut. It is about an inch longer than the Gilman bowl and considerably deeper, but of about the same width. The heads forming the handles differ somewhat from those previously described. A crack appears upon either side as shown in the illustration, and at one point the bowl has been repaired by passing a cord through two perforations, and also strengthened a short distance above by a lead clamp. The history of this bowl is given on the label, but as the present writer has had no opportunity to verify its correctness it is omitted from this account.

Uncas, the noted Mohegan sachem and friend of the colonists of southeastern Connecticut, died about the year 1682, and several of his family are buried in the old Mohegan cemetery at Norwich. It is doubtful if either of the above bowls was owned by him. They are, however, very old, of native design, and were doubtless made by his people.

Another interesting old Mohegan bowl is shown in fig. 107. This is also in the Slater Memorial Museum at Norwich, and is said to



WOODEN BOWLS, ALCONQUIAN INDIANS

a, c, Chippewa; b, Blackfoot; d, Delaware. (About one-fifth natural size.)

have been taken from a grave near that city many years ago. It has a slightly weathered appearance which may have been caused by exposure out of doors for a few months. It is made from a burly piece of hard wood, probably of the same kind used in making the two bowls last described, and is accompanied by a metal spoon of a type common in the colonies during the seventeenth century. Upon the inner face of the handle is a well-executed carving of the head of an animal. The handle proper, exclusive of the head, is of the same general type as those shown on plate xxvii, *c*, *d*. Upon both sides of the handle of the former (*c*) similar ornamental grooves and side notches were probably originally present.

Another Mohegan bowl is illustrated in plate xxvii, *a*. This is in the cabinet of Mr George G. Heye, of New York, to whom the writer is indebted for the photograph. It is made of maple and is of a later date than the five New England bowls above described. This is said to have been fashioned by the grandfather of the Indian from whom it was recently purchased. The type is primitive. It is nearly circular, four inches high at the rim, and a little more than thirteen inches in diameter.

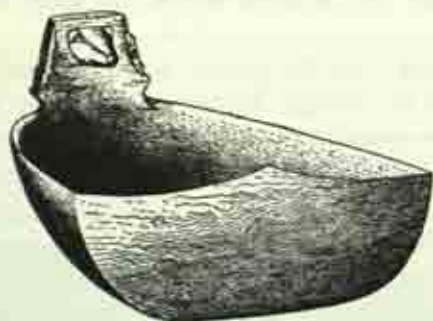


FIG. 107. — Mohegan bowl of wood. (One-fourth natural size.)

A beautiful old Delaware bowl of elm wood, also in Mr Heye's collection, is shown on plate xxviii, *d*. The extensions of the body of the vessel upon either side serve as handles. In some examples these are plain, in others scalloped.

A Chippewa bowl of elm wood, with side projections, is figured on plate xxviii, *c*. This is from near Sarnia, Ontario, and is an excellent example of native woodworking. The walls are thin and of uniform thickness, the outlines being unusually graceful.

Another eastern Chippewa bowl, also showing fine workmanship, is illustrated on plate XXVIII, *a*. It is wrought from a maple knot and has a well-executed border about three-eighths of an inch wide just below the rim. It was collected at Walpole island, Ontario. Both the above Chippewa bowls are in the Peabody Museum at Cambridge.

The maple wood raven bowl shown on plate XXVIII, *b*, was captured from an encampment of Blackfoot Indians in 1865 by Col. Sibley, U. S. A. It was presented to the Natural History Society of Worcester, Massachusetts, by John U. Alton and was later transferred to the museum of the Worcester Society of Antiquity. The bowl was an old one at the time of its capture. It measures fifteen inches in length, thirteen inches in width, and is three inches high at the rim. The tail has been broken off and lost. Judging from the adjoining portion it was two and one-half inches wide at the base and turned upward, balancing the head. That part of the bowl adjoining the tail has also been broken off, but was afterward joined to the body by an ingenious arrangement of lead clamps. The eyes are represented by brass-headed tacks. There was also a similar tack on the rim, at either side of the neck, one of which is missing.

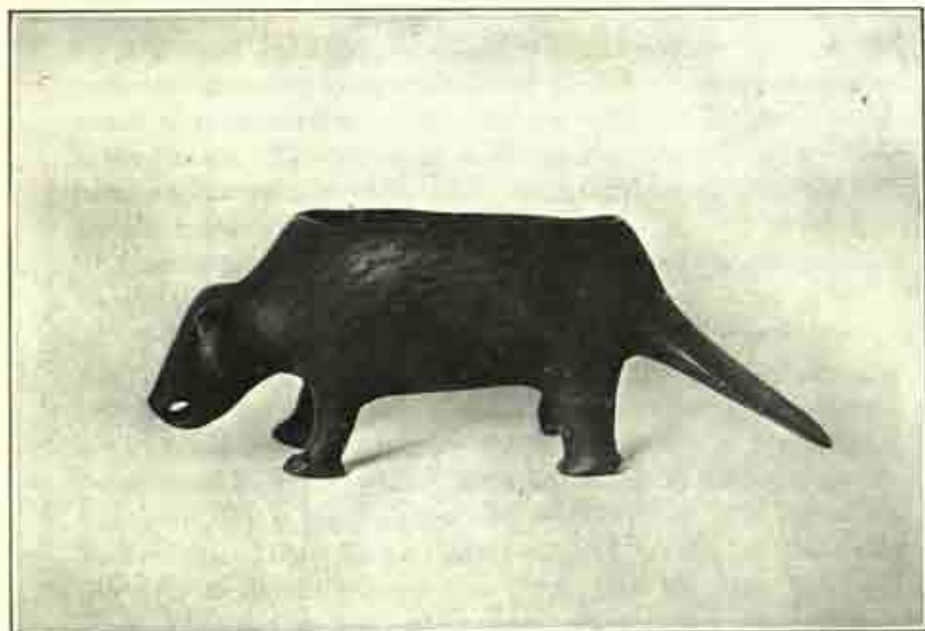
About the year 1795 the beaver bowls figured on plate XXIX were the property of George Turner, judge of the Western Territory. The lower specimen (*b*) is in the cabinet of the Academy of Natural Sciences of Philadelphia, where it was deposited in 1879 by the American Philosophical Society, of which Judge Turner was a member. The writer is indebted to Mr Clarence B. Moore, of Philadelphia, for the excellent photograph.

The following is a copy of the label written at the time the specimen was received by the Academy:

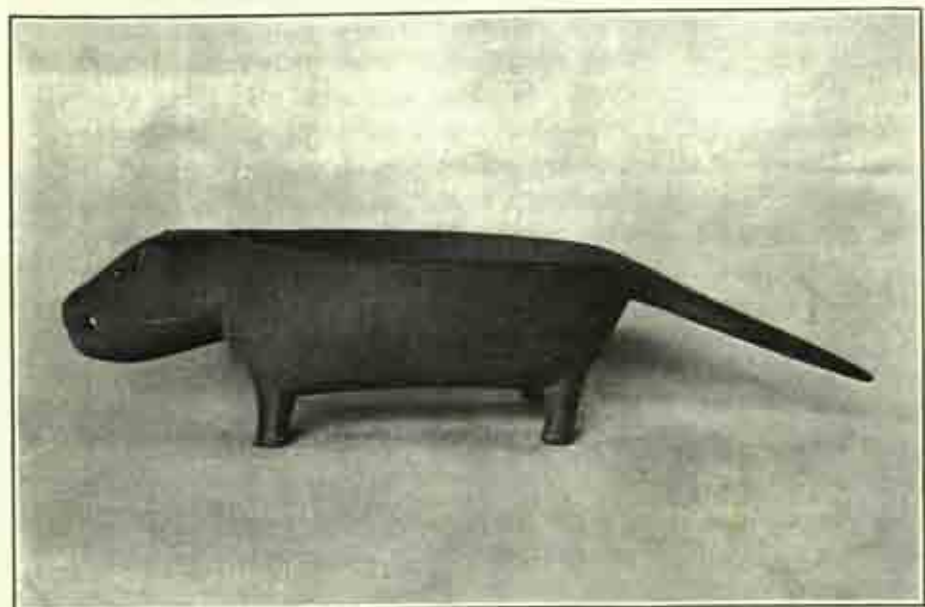
"Wooden vessel carved in imitation of a Beaver and used as a tureen by the Kaskaskian, Illinois. Judge Turner 1795, Am. Philos. Soc. dep. 1879."

On the bottom of the bowl is an inscription in ink, probably placed there when the carving was given to the Philosophical Society:

"Kaskaskian. Design representing a Beaver
March 10, '95 [1795]"



4



5

WOODEN EFFIGY BOWLS REPRESENTING THE BEAVER

4, Probably Illinois; 5, Kaskaskia, an Illinois tribe. (About one-fifth natural size.)

The bowl has a narrow groove surrounding the cavity in the back and extending along the edge of the tail, the upper portion of which is cross-hatched. The eyes are indicated by small brass-headed tacks. The modeling is stiff and formal, most of the lines being angular and inartistic. The contours show conclusively that the carving was executed with a steel knife.

The other beaver bowl shown on the same plate (*a*) has upon its side this inscription :

"Indian sculpture of a beaver, presented by Judge Turner."

This specimen was received by the Peabody Museum of Cambridge from the old Boston Museum, which undoubtedly acquired it with many other objects from the Peale Museum of Philadelphia (established in 1785), when, after a successful existence of nearly fifty years, it was discontinued and its collections sold. It seems evident that Judge Turner presented this carving to the Peale Museum at about the same time (1795) that the other bowl was donated to the Philosophical Society. It is also probable that it originated among the Kaskaskia, although it may have come from some other tribe of the Illinois confederacy.

The modeling of this bowl is excellent. There are no sharp angles, the outlines being well rounded and the curves graceful. A critical examination shows a few marks on the under side of the body which may have been made with a hatchet, probably an iron tomahawk, in roughly blocking out the work. The only evidences of the use of the steel knife are the perforation for the mouth, two grooves outlining the teeth, and a few small facets on the feet. Both the steel knife and the tomahawk were probably used, however, in giving a rough form to the carving, but there is evidence of the use of stone scrapers in the final stages of the work, as the surface shows various striæ undoubtedly caused by such tools.

It would be assuming too much to attribute the fine curves in the outlines of this effigy wholly to the imperfect cutting qualities of the stone implements. Nevertheless it is the writer's opinion that these qualities influenced to a considerable degree the lines of the carving. The tendency of a sharp knife is to produce straight lines and sharp angles, while the tendency of stone knives and scrapers would be to produce curved lines. Therefore, if a suf-

ficient number of wooden utensils made by the latter method could be brought together they would probably be superior artistically to the later work.

The tendency of the steel knife to produce straight lines and sharp angles was early recognized by native woodworkers. This disadvantage was but partially overcome by the general adoption of the curved knife.

The other specimens described in this paper were apparently made with the aid of steel knives; the process of charring may have been followed in some instances as an accessory. It does not seem probable that in the eastern section of the Algonquian area many wooden vessels were made with stone tools after the first third of the seventeenth century. In some sections, however, the primitive process was undoubtedly followed at a considerably later date.

PEABODY MUSEUM, HARVARD UNIVERSITY,
CAMBRIDGE, MASSACHUSETTS.

BOOK REVIEWS

The North American Indian. By EDWARD S. CURTIS. [New York: The Author, 1907] 4°. Vol. I, xvii, 161 p., 79 photogravure plates bound with text, and portfolio of 39 separate supplementary plates 20x24 in. Vol. II, xii, 142 p., 75 photogravure plates bound with the text, and portfolio of 35 separate supplementary plates 20x24 inches.

The first two volumes of this great work made their appearance during the closing days of 1907. The plan of the publication as announced calls for twenty volumes dealing with the Indians of the United States and Alaska, and, as the title page informs us, the entire work of preparing the text and making the illustrations as well as the labor of publication is undertaken by the author, Mr Edward S. Curtis, who as a photographer of Indian life has been well known to the scientific world as well as to the general public for a number of years. Mr Curtis's photographs have become familiar to all interested in the subject through the exhibitions of his work that have taken place from time to time and which have been universally admired and highly commended by artists, as well as by those whose interest in them is of a purely scientific character. Indeed, there has never been seen a series of pictures from brush or camera which so artistically and at the same time so accurately illustrates the life of the Indian tribes living within the United States, or which portrays so truthfully the physical types characteristic of these tribes. It is not to be supposed, however, that the work now offered to the public represents the Indian by means of a series of illustrations, for it is as an author that Mr Curtis now achieves distinction, recording in an easy and vigorous style the impressions of an acute observer. Each volume contains a complete description according to the most approved models of the peoples with which it deals, supplemented with well-chosen pictures by the author's camera. We are informed on the title page of the volumes under review, that the field research, by which is meant the making of the photographs and the collection of ethnological notes from which the text is prepared, has been conducted under the patronage of J. Pierpont Morgan, Esq. In mentioning this fact the reviewer has in mind the immense service which has been rendered to Anthropology as well as to American History by Mr Morgan, a service that can be properly appreciated only by those who understand the importance of the records left

by the American Indian in relation to the general uses of historical science and to the development of human culture. Mr Curtis's work is not to be classed with those that are written for the specialist. On the contrary, while its value to science cannot be over-estimated its appeal is rather to the general public, and the form in which it is cast makes it not only intelligible but vastly interesting even to those uninstructed in the methods of ethnology. This has been achieved without any sacrifice of scientific accuracy, and the work is entitled to the notable distinction of being the first general work dealing on a large scale with the habits and customs of the American Indian which presents a true picture of Indian life. The author tells us in his preface that the work had its inception in 1898, and since that time months of arduous labor have each year been devoted to accumulating data necessary to form a comprehensive and permanent record of the important tribes of the United States and Alaska. The value of the work, Mr Curtis informs us, "will lie in the breadth of its treatment, in its wealth of illustration, and in the fact that it represents the result of personal study of a people who are rapidly losing the traces of their aboriginal character and who are destined to become assimilated with the 'superior race.'"

The illustrations present vividly to the eye such facts of Indian life as can be accurately recorded by means of the camera. First are represented types of old and young, to which are added pictures of their habitations, industries, ceremonies, games, and everyday life, and, as the preface justly states, each photograph is an illustration of an Indian character or of some vital phase in his existence. Apart from their ethnological value they possess artistic merit of a very high degree, and reveal the fact that the photographer has an unusually keen eye for the artistic possibilities of the Indian and his surroundings. The homely phases of aboriginal life in the primitive hut are made to appeal to the imagination through their artistic treatment, and this result has been successfully achieved without the slightest loss of scientific accuracy. The landscape which constitutes the natural surroundings of the Indian and out of which his environment is made, is constantly before the mind's eye while one reads Mr Curtis's account of him, and thus the influence of environment is never lost to sight.

The first volume deals with three tribes—the Apache, the Jicarillas, and the Navaho. In dealing with the first of these the author gives us at the outset an historical sketch of the tribe and follows it with chapters on their homeland, life, mythology, and medicine-men, a selection of topics which is adhered to in a general way throughout the two vol-

umes under review. The author's style is vigorous and clear, and the narrative moves forward smoothly, carrying the reader irresistibly through a series of vivid pictures in which appear the naked landscape of the great Southwest, the background of the Navaho *hogán*, of the primitive Apache house, of all the picturesque details of Indian life. In dealing with mythology, the author has adopted a plan of presenting his readers with the typical myth of each tribe, and in this way he is able to record a series of myths heard by himself from the elders among the Indians, and representing the mythical conceptions current among the different tribes. In connection with these conceptions, and also with the functions of the medicine-man, we are made familiar with a number of rites and ceremonies that make up a large part of the religious life of the Indians, and represent their attitude toward the supernatural powers. This phase of Indian life is well expressed by Mr Curtis in the following characteristic paragraph.

"The Apache is inherently devoutly religious; his life is completely molded by his religious beliefs. From his morning prayer to the rising sun, through the hours, the days, and months—throughout life itself—every act has some religious significance. Animals, elements, every observable thing of the solar system, all natural phenomena, are deified and revered. Like all primitive people, not understanding the laws of nature, the Apache ascribe to the supernatural all things passing their understanding. The medicine-men consider disease evil, hence why try to treat evil with drugs? Disease is of divine origin, so to the beneficent and healing gods the Apache naturally make supplication for cure."

Formerly the territory over which the Apache ranged extended from western Texas to the Colorado river, while they carried their predatory raids southward to Sonora and northward to the country of the Navaho. At the present time they number not more than six thousand, and it is probable they have never exceeded ten thousand, yet for a long period of time this small band of nomads kept the other tribes of the great Southwest, as well as two white nations, in a constant state of dread. "His birthright was a craving for the warpath, with courage and endurance probably exceeded by no other people and with cunning beyond reckoning. Although his character is a strong mixture of courage and ferocity, the Apache is gentle and affectionate towards those of his own flesh and blood, particularly his children. Fear to him is unknown. Death he faces with stolid indifference; yet Apache men have been known to grieve so deeply from the loss of a friend as to end their troubles by self-destruction."

This appreciation of the Apache character reveals an intimate ac-

quaintance made possible only by a sympathetic attitude and an unbiased mind. The Apache like all other Indians is intensely conservative and places a barrier between himself and the white man which can be removed only by rare diplomacy. Mr Curtis has much to say that will be matter of surprise for many of his readers whose conception of Indian life and character has been formed under the influence of popular tradition or of writers who themselves have been perverted by ignorant prejudice or by misguided sentiment. To give a single example of the type of popular fallacy to which I refer, there is no belief more common among white people everywhere than that which ascribes to the Indian the gloomy disposition, a belief that has little foundation in fact. Referring to this popular error, Mr Curtis writes: "Surely he who says the Apache is morose, stolid, and devoid of humor, never knew him in the intimacy of his own home."

The Navaho, while speaking a language closely allied to that of the Apache, are contrasted with these in their manner of life, for while semi-nomadic, their chief activities are concerned with agricultural and pastoral pursuits, and their handicraft has become widely known through the Navaho blankets, the manufacture of which still constitutes one of the most important Indian industries on the continent. Mr Curtis is of the opinion that the art of blanket weaving has not been borrowed by the Navaho, as has been supposed, but developed by them independently. The Navaho, like all Indians, are intensely religious and even at the present time preserve more of the primitive rites than is usual with natives who have been so long under the influence of white teachers. The Night Chant, together with other important ceremonies, is dealt with by Mr Curtis in detail from the records of his own observations.

The second volume deals with the Pima, Papago, Qahatika, Mohave, Yuma, Maricopa, Walapai, Havasupai, and Apache-Mohave or Yavapai. These nine tribes belong to two linguistic families, the Piman and the Yuman, and they reside within the limits of Arizona, extending into the Mexican state of Sonora and into eastern California. The Yuma and the Mohave, dwelling on the banks of the Colorado, are physically among the most finely developed of all the American Indians. In the high altitudes live the Walapai, a hardy tribe of mountaineers, whose habitat, unfit for agriculture, renders the tribe one of the most wretched within the borders of the United States. The Maricopa occupy the valley of the Gila, and exhibit the same characteristics as the inhabitants of the Colorado, large of physique and slow of thought. These tribes, together with the Havasupai, belong to the Yuman linguistic family, the dialects of which are heard from the Grand Cañon to the Gulf of California. According to

tradition their place of origin was on the California side of the Colorado river, opposite Fort Mohave, and the Mohave represent the parent stock. They became well known to history in the days of the California gold rush, for they lived in their primitive way unmolested until 1849 when the emigrant trains and mule teams which crossed the Colorado river at Indian Ferry brought these tribes for the first time in contact with civilization. Pertaining to one linguistic stock, they differ widely in physique, culture, and temperament. The six tribes which live within Arizona and California are therefore divided by Mr Curtis into two groups, which he distinguishes as mountaineers and lowlanders, and which represent the usual characteristics that go with these physical conditions. Of all mountain dwellers none have a stranger habitat than the Havasupai, whose home is in Cataract Cañon, a tributary of the Grand Cañon of the Colorado. At a spot where the great gorge widens into an amphitheater they have made for themselves a garden between the rugged walls that tower for half a mile above them. A vivid picture of this dwelling-place is given by Mr Curtis. "To reach this little oasis there are but two trails, and he who selects one will wish he had taken the other; both follow routes chosen by prehistoric man. The sandalled feet of unknown generations toiled up and down these tortuous ways ages before there was need of making them accessible for beasts of burden. After hours of winding about sheer cliffs, down narrow gorges, patiently picking a way back and forth across crumbling rocky slopes, one reaches at last the home of the Havasupai. The floor is half a mile wide, scarcely two miles long, and contains an area of less than five hundred acres. The never-ending stream from which this small but picturesque tribe derives its name, and which makes life possible in the depths of the gorge, flows through the length of the little garden spot, then in a cataract leaps from the floor of the cañon to be caught in a pool below."

The Pima, Qahatika, and Papago constitute that part of the Piman family represented in the United States. According to their mythology the massive structures, now in ruins, that the traveler sees in the Salt and Gila valleys, of which the best known is Casa Grande, were built by their ancestors, who also were responsible for the extensive irrigation works of which the remains may still be seen. At an early period of the colonization of the Southwest the Pima came in touch with the Spanish missionaries, and they have always been noted for their friendly attitude toward white people. Like most of their brethren in the Southwest the Pima are an agricultural people, raising crops by the aid of irrigation, conveying water from the rivers in canals. The skill of their handiwork is perhaps

best exhibited at present in the art of basketry, of which they make a considerable variety, possessing strongly marked characteristics in both form and decoration. Although the Pima have never shown any inclination to resent the encroachments of the white man, they are the only desert tribe that withstood the attacks of their hereditary foes, the Apache. Although no better equipped for war than their congeners of the desert, they retaliated for the depredations committed upon them and supplied by cunning and strategy what they lacked in warlike qualities. When the emigrant trains first made their way across the desert they were accustomed to take refuge among the Pima from the marauding Apache.

We must not expect to find however in these pages much matter dealing with the relations between the Indians and the white man. Mr Curtis does not feel called upon to deal with these aspects of American history. His labors are almost purely ethnological, and the volumes before us give striking proof of an ethnological work of prime importance. I have not attempted to describe the contents of the two volumes, for that would be impossible in a review. To convey an adequate impression of the breadth of treatment presented in the recorded observations, not less than to do justice to the fine artistic feeling shown throughout, would be difficult for a reviewer. President Roosevelt, writing an appreciative Foreword to the first volume, attributes Mr Curtis's unusual power to the fact that he is an artist as well as a trained observer . . . whose work is far more than accurate, because it is truthful. In this statement, indeed, we find the keynote which is struck at the beginning and sustained throughout the two volumes; but Mr Curtis's power is due no less to his industry and hardihood, which have enabled him to overcome the physical difficulties of his task. My object in this review has been to indicate his method of treatment and to give one or two examples of his style.

As modern examples of bookmaking, the two volumes exhibit the highest degree of excellence. They are printed on the best handmade paper and the illustrations are finely engraved on materials that will not soon perish. It is fitting that a monumental record of the American Indian should be made on materials that will endure long after his race has passed away, and that, unlike most books of the day, stand a chance to survive even the civilization that has replaced him.

Each volume is provided with a carefully prepared appendix giving, in the most compact form possible, a description of each tribe assigned to that volume, together with a vocabulary and a comprehensive index. The appendix alone constitutes a valuable and convenient work of reference.

The editing of the entire series has fallen to Mr Frederick Webb Hodge, of the Bureau of American Ethnology, whose editorial experience and knowledge of the literature relating to the Indians make him eminently fitted for the work.

G. B. GORDON.

Exploraciones arqueológicas en la ciudad prehistórica de "La Paya" (Valle Calchaquí, Provincia de Salta), Campañas de 1906 y 1907. Por JUAN B. AMBROSETTI. Publicaciones de la Sección Antropológica de la Facultad de Filosofía y Letras, No. 3 (1ª Parte) en la Revista de la Universidad de Buenos Aires. Buenos Aires: 1907. 8°, 278 pp., 121 figs., map.

In this excellent treatise Dr Ambrosetti describes the results of the second and third expeditions conducted by him during 1906-1907. These two expeditions dealt with the archeology of one of the prehistoric sites in the Calchaquí valley in the Province of Salta, to which the name of "La Paya" has been given. The excavations were conducted on the right bank of the river La Paya, where the terrace is surmounted by a well-defined group of ruins consisting of a walled city covering an approximate area of six and a half hectares. Within this area are many ruined houses, rectangular in plan and measuring four to five meters wide by eight to ten meters long. These houses, built of stone, have in a very large measure disappeared beneath masses of debris, and time did not allow of their excavation. The character and arrangement of the houses are much the same as those encountered at the ruins of Quilmes described by Dr Ambrosetti in the *Boletín del Instituto Geográfico Argentino* in 1897, except that the circular constructions of Quilmes were not found in La Paya. The characteristic feature of the houses consists of the subterranean chambers, or cellars, in the construction of which the builders took advantage of the irregularities of the ground, digging chambers in the hillsides or in the slope of the terrace and lining these with stone, usually rough water-worn fragments from the river, but sometimes crudely shaped by hand. The superstructure supporting the roof was built of wood, of which the region furnishes an abundant supply. The principal edifice within the walls is a large rectangular enclosure of a special kind of stone found at a distance of two leagues, which cleaves naturally into square blocks. It is the remains of a building measuring thirty meters and ninety centimeters long by four meters and thirty centimeters wide. The walls, measuring three meters and forty centimeters high, were presumably surmounted by a thatched roof supported on poles. Though the function of this building, known as the *Casa Morada*, is not apparent, its prominence and superior construction suggest that it

may have been either a temple or the residence of a chief. The question is complicated by the finding within this structure of a number of burials, all of which had been dug up by treasure seekers before the expedition arrived at the ruins. Fortunately the objects recovered by the adventurers found their way into the National Museum in Buenos Aires, and are illustrated and described in these pages together with a large number of objects found in other burials by the expeditions. The presence of burials in Casa Morada, together with the finding of many others within the area of the walled city, suggests to Dr Ambrosetti that the whole place was abandoned in antiquity and converted into a vast cemetery.

The objects found within Casa Morada are of a better class than those found in other parts of the ruins. They consist of ornaments of gold and bronze, together with pottery vessels and wooden objects elaborately decorated. The shapes of the pottery as well as the decoration present such strong affinities to those peculiar to the coasts of Chile and Peru as to establish a strong probability that a large part of this pottery was brought from those regions. The character of the ornamentation consists of triangles, spirals, right lines, and ornithomorphic patterns, indistinguishable from those used by the ancient painters on the north coast of Chile. The local potters, however, did not hesitate to imitate this imported pottery both in shape and ornament, imparting to their fabric at the same time a quality that distinguishes it at once from the original types.

Within the city walls the expedition opened seventy-two tombs, representing about one hundred and fifty-six skeletons; for while the majority contained only one skeleton, some contained as many as nine. In form the tombs were circular pits lined with rounded stones and covered with flat stone slabs. The majority of the bodies had been buried in a sitting posture with the face toward the east. It is supposed that the earth which covered the bodies was not placed there at the time of burial, but fell in afterward.

The much destroyed wall surrounding the city was built of rounded stones from the river, with occasional sharp fragments to serve as wedges; it is nowhere more than a meter in height, with a thickness about equal to the height, and in case of an attack upon the city might have enabled the defenders to intrench themselves.

Outside the city wall, on higher ground, is situated the necropolis, where numerous burials were exhumed by the second expedition, revealing methods of sepulture and associated objects identical with those inside the city proper.

Something more than half the book is devoted to a detailed inventory

of the finds connected with the two expeditions. Ample illustrations are given in the text, and the whole is a valuable contribution to the archeology of South America.

G. B. GORDON.

Führer durch das Rautenstrauch-Joest-Museum (Museum für Völkerkunde) der Stadt Cöln. Von Dr W. Foy. 2. Auflage. Cöln: 1908. 18°, 259 pp., ill. (Preis 50 Pfennig.)

Pages 1-12 of this well-printed guide to the City Ethnological Museum of Cologne from the competent hand of Dr Foy give a brief history of the Museum, and pages 13-42 are devoted to very good brief introductory essays on ethnology, the general evolution of human civilization, primitive and civilized peoples, races and peoples. The rest of the book is descriptive of the collections in the Museum, each grand division and its subdivisions: Australia, the South Sea (New Guinea, Eastern Melanesia, Bismarck Archipelago, Micronesia, and Polynesia), America (South, Central, North), Africa, Asia (Asia Minor, India, Indonesia, Siberia, Central Asia, East Asia), having a brief general discussion of its culture-phenomena, etc., as a sort of introduction. The illustrations consist of characteristic specimens, those in the section on America (pp. 144-170), e. g., are: a feather hip-ornament of the Chiamacoco, a primitive Bororó human figure, an ancient Peruvian anthropomorphic vase, an ancient stone vessel from Costa Rica, tomahawks of the Prairie Indians (of the three figures on page 166 one is of the type given by Holmes on p. 271 of the *American Anthropologist*, N. S., 1908, x, another approximately of the type on p. 265, while the third is of the stone club variety), a basket of the Yakima, a raven-mask from western Vancouver island, and an Eskimo kaiak. A useful feature of the book is the small maps of each continental and important area. The American collections in the Museum represent the Fuegians, Araucanians, and Patagonians; Indians of the Gran Chaco; Forest Indians of Paraguay; Forest Indians of Brazil and westward; Guiana Indians; Peruvian antiquities; Central American and Mexican antiquities; North American Forest and Prairie Indians; Indians of the Northwest Coast; Aleuts and Eskimo. The library of the Museum now contains 1740 works in 2900 volumes. There are also about 960 lantern-slides for use in lectures, etc. The organ of the Museum, "Ethnologica," will begin publication this year. The citizens of Cologne owe this excellent Museum to the generosity of Mr and Mrs Rautenstrauch, to whom had been left a large part of the collections of Prof. Wilhelm Joest.

ALEXANDER F. CHAMBERLAIN.

Die Verkehrs-Sprachen der Erde. Von Dr FRANZ WINTERSTEIN. Zweite vermehrte Auflage. Berlin: 1908. 52 pp.

This interesting little book treats briefly of the present status of all languages of importance for human intercourse, particularly those that have been, more or less, or hoped to be, world-languages. Practically all living tongues of any great influence, from Abyssinian to Zapotec, are considered or at least mentioned. In the introductory pages the question of a "world-language" is touched upon, the author inclining to the view that some *living* language must ultimately become such, possibly English. The number of people speaking the chief languages of the world is estimated as follows: English somewhat fewer than 200,000,000; Russian, 100,000,000; German (counting those speaking it in America, etc.) 87,000,000; Dutch 9,000,000; Spanish 45,000,000; Portuguese 22,000,000; Italian 38,000,000; French 47,000,000; Greek 3,000,000; Chinese 400,000,000; Japanese 46,000,000; Arabic 55,000,000; Malay 25,000,000; Turkish 25,000,000; Hindustani 100,000,000, etc. Among the "mixed languages" and jargons referred to are the Papiamentu of Curaçao, Negro-English of Guiana and Guinea, "pigeon German" of Kiau-Chau, "pigeon English" of the East Indies, "pigeon French" of Farther India, "pigeon Russian" of the Kiachta region on the Siberian border, the "Dschue tongo" (Jewish language) of Dutch Guiana—in America the "Chinook Jargon" seems to have been missed. The section relating to America (pp. 34-41), indeed, needs revision and the elimination of such statements as that on page 34 that the natives of Alaska "speak the Slove-dialect, a mixture of Russian, Indian, and Eskimo." Also the one on pages 37-38, to the effect that Aztec "is divided into many dialects, particularly Tarascan, Otomi, and Zapotec; in Yucatan it is called Maya or Quiché, in Central America Cakchiquel." There are some misprints also; e. g., Ayamara, Guayakum, etc. Dr Winterstein is a patriotic German, and urges his countrymen to keep their own speech and spread it abroad over the whole earth. English, he thinks, has perhaps reached its highest level, and German has nothing to fear from other competitors—so *Hie gut Deutsch allewege!*

ALEXANDER F. CHAMBERLAIN.

Mata-Hari oder Wanderungen eines indonesischen Sprachforschers durch die drei Reiche der Natur. Von Prof. Dr RENWARD BRANDSTETTER. Luzern: E. Haag, 1908. 55 p.

This monograph, whose title, *Mata-hari*, "The eye of day," is the Malay name for the sun, forms the fifth in the author's series of "Malayo-Polynesian Researches" and is an etymological-psychological study of ap-

pellations of animals, plants, and inanimate objects, natural phenomena, etc., their distribution, and religious, euphemistic and poetical periphrases in use for many of them. Many words have one chief type with some subordinate ones; others have no generally prevalent type, but (e. g. "gold") as many as six different types, besides, occasionally, borrowings from Sanskrit. "Sun" has two principal types, represented by Tagal *arau* and Toba *ari*, and six subordinate types seen in Bimanes *lirō*, Magindanao *esnan*, Old Buginese *tikaq* and *eyo*, Batak *sidumadan*, Buginese *isso*. The ideas at the root of the names of the sun in Malayo-Polynesian languages are "bright," "flame," "fire," etc. The same word is often used for "day." In the Ibanag language of the Philippines the word cognate with *wəsi*, the widespread name for "iron," signifies "iron axe." Among the terms for which no single widespread dominant type appears are those for "gold," "valley," "cloud," "milk," "bat," "bee," "honey"; those having notably widespread and dominant types are, among others, "wood" (tree), "crocodile." Cognate words signify in one language "wind," in another "storm," and "the meanings *dew*, *rain*, *mist*, *cloud*, interchange in great variety." The words for "sea" and "salt," *tasik* and *asin*, may be related; "blood" and "sap" are likewise often represented by cognate words. Some of the words for "dog" are peculiar in seeming to be cognate with certain terms for "fowl." The "cat" is named onomatopoeically *pusa* in Dayak, *meyōn* in Toba, or with a calling-term, as in Malay *kutjin*. The terms for "wind," "breath," etc., lie at the basis of expressions for "life," "soul," and the like. In Macassar love-songs, or *kelongs*, *anin*, "wind," is used for "love." In Dayak *rantan danum huan-e* (his soul rejoices) signifies literally, "the water within him rejoices." Of religious, euphemistic, and poetic periphrases the following may serve as examples: Malay *mata ayer*, "eye of water," for "spring"; Menangkabau *buno anin*, "flower of wind," for "breeze"; Buginese *welon-palodjan*, "flower of water," for "foam"; Malay *sĕgara hidjau*, "green sea," for "meadow"; Toba *naga sumambit*, "hanging snake," for "liana"; Macassar *tu ri kayu*, "the man on the tree," for "monkey." In Buginese poetry occur figures such as *rawĕmpam-puna le tikaq-e*, "the sun is a flower that opens," for "the sun rises." In Buru the areca-nut is called *fifin meha*, or "red lips," because it makes the lips red. The terms for "wind," "storm," "cloud," "rain," "water," "dew," etc., on pages 12-17, 41-44, furnish some material in addition to that in Churchill's monograph on "Weather Words of Polynesia" (*Mem. Amer. Anthropol. Assoc.*, 1907, II, 1-98).

ALEXANDER F. CHAMBERLAIN.

The Negro Races: A Sociological Study. By JEROME DOWD. New York: The Macmillan Co., 1907. 8°, xxiii, 493 pp.

"The author submits to the public this volume as one of a series which he proposes to publish consisting of a sociological study of mankind from the standpoint of race." This passage, from Mr Dowd's preface, indicates that the author plans a great synthetic work, somewhat on the Spencerian order, in which shall be brought together a vast mass of material drawn from all sources. This mass of material, after being digested and rearranged, presumably will be presented in definite form, with the purpose of deducing therefrom some clear and exact conclusions. The first volume here at hand is an octavo of nearly five hundred pages, but it is only one of three necessary for the discussion of what the author is pleased to call "The Negro Races," by which he seems to mean the dark peoples of Africa and their descendants in America. "Other volumes will deal with the American Indians, the Mongolians, Japanese, Chinese, Semites, and Aryans." A work in which a competent anthropologist, or a competent sociologist, should do what Mr Dowd proposes, i. e. to bring "together the general principles derived by specialists in their respective fields" — would surely have value, but its preparation would be a difficult task. We fail to see that Mr Dowd, either in his preface or in his text, has demonstrated his fitness for the task.

The work is preceded by a preface, an introduction, and a table of contents. Between the introduction and the table of contents an entire page is devoted to the italicized quotation "The Lord looketh from heaven: he beholdeth all the sons of men. From the place of his habitation he looketh upon all the inhabitants of the earth. He fashioneth their hearts alike: he considereth all their works." What does this indicate? What kind of a book is here presented to us? Are we to expect a rigid scientific discussion of the significance of race in sociology, or are we to find a sermon? Is the author a student, an investigator, a scholar — or is he an itinerant preacher? That his attitude is really that of the latter is shown by his frequent lapses into religious archaic forms of speech. Thus — Why are the Bushmen confined to the desert? "Alas, these regions" (adapted to agriculture) "are occupied by more powerful tribes who will not permit the Bushmen to come among them except as slaves." So, of the Pygmies — "there are great quantities of banana and plantain trees, but alas, these favored places are occupied by the larger and more powerful Negro races . . ." Again, we learn that — "Yea the influence of grandparents is necessary" in handing down moral precepts and wisdom. Nor is it only the lapsing into such religious archa-

isms in speech that betrays the author's attitude. His matter is constantly vitiated by the application to it of his own personal moral and religious bias. We do not in the least question an author's right to occupy any point of view or to use his material in his own way. We simply endeavor to locate his work. There may be *raison d'être* for a work from that point of view, warped and tinged by that attitude and personality. But such a work is not scientific; it is neither anthropology nor true sociology. What place has the following passage in any scientific discussion? "Fear is the transcendent element in all equatorial religions. . . . It makes people cowardly and closes the door of their minds to God's deepest truths and therefore to His highest revelations."

The author not only uses archaic religious expressions; his English is frequently bad. Take such examples as "the custom officer" (p. 180); "the drop in the level of culture is precipitous" (p. 115), and "with a meal of victuals and a cruise of water" (p. 55). Of course, typographical errors may occur in any work, but no book should go out from Macmillan's with such errors as the following: "a cloth of woven grass worn like a hilt" (p. 335), "koross" (so printed several times), "boabab" (p. 68), "aquiline" (p. 84), "oriferous" (p. 95), "John Rawlands" (p. 477). There are many others equally bad. If these were technical or scientific terms rarely used, the printers' errors might be excused, but such errors in ordinary English terms occur throughout the book. If Mr Dowd was unable to detect them, the publishers' proof-reader cannot be excused for missing them. He might take to drink to "droun his brief" (p. 145).

In his use of authorities Dowd is careless and uncritical. All is fish that comes to his net. We can forgive Miss Kingsley for her constant humor, although at times it is hard to do so. She, however, actually wrote for the general public; Mr Dowd is not so writing. *She* might be allowed to remark that the atmosphere of West Africa consists of ninety percent of solid matter in the way of mosquitoes, but it is unfortunate for Dowd to so quote her. He soberly tells us that "snakes are plentiful in number and immense in size. The boa, a hundred feet long, is sometimes seen with half its body encircling a tree and the other half folded around a lion, leopard, bear or human being" (p. 73). It would be well for Mr Dowd, when he has time, to revise his ideas of snakes; also to locate the African home of the bear; perhaps it is "along the coast" (where) "tigers sometimes prowl about the villages at night and steal the fish, which the natives have left outside their huts" (p. 73). Once and again, however, our author turns upon his authority. Thus, after quoting Bur-

rows regarding a pygmy who ate sixty bananas at a meal, he hastens to reassure us by saying, "Geil, however, denies that Pygmies eat sixty bananas at a sitting."

What does Dowd mean by the statements "Stanford believes . . .," "But Stanford overlooks the fact . . ." *Stanford's Compendium* is useful and well known, but does a man of science make such careless and misleading references to authorities? It is as doubtful that Stanford believes or overlooks as that Macmillan mentions hundred-foot boas.

Dowd himself indulges not infrequently in dry humor; in fact he has a true ministerial delight in his own quips and fancies. Such pleasantries as the following occasionally enlighten the gloom of his discussion: "When ready for a change of camp, it is only necessary to gather up the babies and whistle for the dogs. The entire household and kitchen furniture of a Pygmy family could have been lost in Lady Wouter Van Twiller's skirt pocket."

We have gone thus fully into a notice of Mr Dowd's work for two reasons: First, the magnitude of the work planned demands a serious questioning of its actual value; second, the fact that it emanates from the Macmillan house raises a presumption in its favor. We have tried to present a fair judgment. There may be some to whom the work will appeal; the anthropologist will be profoundly disappointed in it.

FREDERICK STARR.

Le Plateau Central Nigérien. Par LOUIS DESPLAGNES. Paris: 1907. 8°, 504 pp. (12 francs.)

This volume is the result of an archeological and ethnographic mission to the French Soudan by Lieutenant Louis Desplagnes of the Colonial Infantry. The book has received the recognition of the French government, and actually forms a serious and valuable contribution to our knowledge of the region to which it relates. It is illustrated by two hundred and thirty-six cuts reproduced from original photographs, and by an excellent map.

The area, in so far as its human population is concerned, has been one of extraordinary movement, displacement, and mixture. In disentangling the difficult problem it presents to the student, Desplagnes recognizes four ethnic elements: I. Toward the end of the Quaternary, the Saharan and Soudan region was occupied by a people of an advanced neolithic culture, related to if not identical with that of the Ethiopic population, which at that time, according to Blanckenhorn, populated Egypt. Desplagnes believes this population was Hamitic-Lybian from Arabia, entering Africa in the north. It used flint and jasper implements, stone

vessels, and pottery; it did not know how to make brick or tile. Its people were nomad-hunters; their dead chiefs were cremated, common people were buried. II. Traces of this ancient neolithic population are still to be found in traditions, customs, habits, and industries. Castes and families, or even whole tribes, are found here and there throughout the entire area, which are plainly descended from them. Physical type, language, mode of life, still connect these survivors with the ancient past. While the most of their totemic system has disappeared under the influence of repeated invasions, there persists in names the suggestion of a fish clan, indicated in names containing the syllable *ma*. These people are hunters and fishermen, they conduct a rude agriculture, crush grain in stone mills, and make a decorated pottery. Men wear a stone armband. Their worship involves libation and sacrifice to local spirits and to fire, to the sun (as female), to the moon (as male), and to outside, inclusive, all-powerful, creative force called Amma. This trinity (male, female, inclusive creative force) is interesting: still more is its division of tribes into male and female according to which deity they worship. This duality and trinity is betrayed in the naming of families, the decorations of monuments, and the form of altars. Thus the trinity is worshipped upon an altar of three points. Men are circumcised, sex relations are free, and polygamy is common. The dead are stowed away, in a flexed position, in fissures among rocks and in burial vases. Chiefs formerly were buried in chambers under tumuli, in the earth mass of which the common people were interred. III. "Red" people from the north descended upon these neolithic primitives. Their totems were birds and their descendants are still traceable through their names. Of the movements of these we have both historic and traditional information. They, at first, consisted of a triad of tribes — *Oua Kore* white birds, *Oua-Gara* red birds, and *Oua-Bibi* black birds. Their first great capital was Ganna, and they subjugated the old fish-peoples, whom they encountered. Their arrival was long ago, though the date cannot be stated. They brought with them knowledge of iron, of constructing houses of earth, brick, and stone. Their area is archeologically traceable by tombs with funnels and tumuli of the age of iron with a central chimney-like tube. These and ruins of buildings occur over a vast district. These buildings are characterized by a special ornamentation. The red people wove wool with decorative patterns in the texture, made filigree, and cast metal by the *cire perdue* process. They used nets in fishing, and turned pottery on the wheel. They introduced the cow, horse, goat, and sheep. They dug excellent wells. Their religious ideas were notably unlike those of their

predecessors and included ancestor-worship (offerings made on both graves and altars). The dead were buried, extended at full length, in rock chambers or under tumuli; the bodies were oriented according to sex and occupation. The sepulchral chamber was always connected with the exterior by some sort of tube. These people appear to have introduced human sacrifice, burying young girls alive on founding towns. The females were respected, enjoyed great freedom, and might partake in political affairs. Marriage was by mutual agreement, although the fiction of capture occurred and prohibitions relative to parents-in-law existed. Polygamy was not common and was chiefly practised by chiefs. Villages combined into confederacies, which were directed by the council of elders. These and some other customs are clearly akin to those of Berbers. Examination of language and customs shows these red invaders to represent two groups. One, the older, came early, mingled profoundly with the primitive inhabitants, and seem to have brought in Phenician-Egyptian and Lybian-Berber ideas. The other group was of pastoral peoples, who filtered in slowly; they were the non-progressive, conservative, poorer part of the "reds." Though far from ethnically pure, they best preserve the types and language. They are represented in the Foulbes of today. This whole immigration is sometimes called "red Ethiopians," and in addition to the cultural elements already mentioned it brought in some Semitic or Babylonian influences. IV. This mixed culture was next subjected to a series of invasions of barbaric and destroying peoples coming from the east and south. They were nomad-shepherds and forest dwellers, forming the clan of the serpent. Their first invasion was that of the Soussous, who founded the empire of the Mossis, overturning that of the Oua Kore by destroying its capital Ganna about 1230. They have carried on their conquests until they have reached the Atlantic coast. Their culture was notably inferior to that which preceded them. They did not work iron, make pottery, or weave stuffs. Their vessels were made chiefly from calabashes; they did not use brick or stone in construction, nor grind grains. They occupied cylindrical earthen houses with conical thatched roofs. Polygamy prevailed, and women, regarded as inferiors, were bought and sold. The body was scarified and teeth were chipped. Government was feudal and centralized. War was constant, for the getting of slaves and workers. The people were superstitious, and their religion was coarse and fetichistic; magic was practised. Boys were circumcised and excision was performed upon girls. Such, in briefest possible outline, are the conclusions to which our author is led from a study of his whole evidence,

diligently gathered from many and differing fields. It is impossible to discuss here his conclusions or evidence for lack of space.

We may however mention two points of special interest in connection with his treatment. To a considerable degree the author makes use of the analysis of tribal and confederation names as a clue in tracing intermixtures and unions. Thus *ma* as an element in such names suggests the fish-peoples, the original prehistoric population; *oua* suggests the bird-peoples, the civilizing "reds"; *so* suggests the late-coming snake-peoples, with their degenerating influences. While other writers have made use of similar analysis of tribal names in northern Africa, it is perhaps safe to say that no one has applied the method so widely and with better apparent result. Again the author presents at full length a series of curious tribal traditions, *Les legendes de Farang, roi de Gao*. In many respects these resemble tribal hero-tales in general. Here, however, they are assumed to have historical suggestiveness and are considered to portray in figurative expression actual conflicts between the victorious invading and the defeated resident populations. Admitting the validity of the above-mentioned detail of method, the results of thus considering these legends are startling. These two points in Desplagnes' method are deserving of careful consideration and weighing.

Much in the author's material well deserves mention, but space compels us to refer only to the significant and large contribution which he makes to archeology. Soudanese archeology has been a little-worked field. It proves to be quite rich and interesting. Desplagnes says: "The principal prehistoric monuments and archeological documents discovered in the western Soudan are:

- "1. Camp-sites and workshops of the Stone Age.
- "2. Neolithic instruments, arms, and tools.
- "3. Lithic monuments; raised stones and anthropoid menhirs.
- "4. Ancient sepulchres — tombs, funerary chambers, tumuli.
- "5. Defensive walls, megalithic enclosures, sites of old historic towns.
- "6. Cliff designs, Berber (Tafinagh) inscriptions, Arabic inscriptions, and relatively recent manuscripts."

FREDERICK STARR.

Mayan Nomenclature. By CHARLES P. BOWDITCH. Cambridge, Mass.: The University Press, 1906. 8°, 12 pp. Privately printed.

The object of this paper is to show that there is no excuse for the errors of nomenclature in relation to the terms of the Maya Calendar to which several writers of the first rank have committed themselves and to which they have persisted in adhering. It is first shown that in the sys-

tem of numeration applied to time, the terms are different from those used for counting everything except days, and since this system counts forward from a fixed day it is correctly called a calendar. The rest of the paper is taken up with a defense of Dr Seler's designations for these time periods or calendar terms, namely the *katun* = 20×360 days, the *tun* = 360 days, and the *uinal* = 20 days. This defense is based on the oldest available authorities: Bishop Landa and the books of Chilán Balam. The latter, which hand down to us very old records and which must be considered authoritative on matters of this kind, contain the clearest evidence that the period of 20 times 360 days was called a *katun* and that the period of 360 days was called a *tun*. Moreover, no such period as an *ahaukatun* is mentioned in the books of Chilán Balam, and no justification can be found anywhere for applying this name to the period of 20×360 days.

Brinton's translation of the books of Chilán Balam is responsible for giving life to the errors referred to. The *katuns* were distinguished in these chronicles as *katun 9 Ahau*, *katun 7 Ahau*, *katun 5 Ahau*, *katun 3 Ahau*, and so on according to the day Ahau with which the *katun* began; but the chroniclers were in the habit of using a kind of ellipsis, and for the sake of brevity wrote 9 Ahau, 7 Ahau, 5 Ahau, 3 Ahau, and so on, suppressing the word *katun* in each instance. Brinton's translation renders the expression as 9th Ahau, 7th Ahau, 5th Ahau, and so on, as though the period itself were called an Ahau. Ahau is the name of one of the twenty days, and is never used as the name of a period of time. Again, Brinton repeatedly translated such an expression as *hun pistun oxlahun ahau* as "the first year of the thirteenth Ahau," whereas it should read "tun 1 of [katun] 13 Ahau," the word *katun* being omitted as explained above. It was the same peculiarity of the text, which however is by no means obscure, that led Brinton to use the term "Ahau katun," although in reality no such term occurs in the book which he was translating.

The paper is one which ought to be read by all students who intend reading modern writings concerning the Mayas, in order to save themselves confusion in terminology. While treating of this subject one feels inclined to enter a protest against another usage which seems to have become general among Maya students. I refer to the practice of calling 4 Ahau 8 Cumhu "the normal date." There is no justification in English for this use of the word *normal*, which thus applied is used with an entirely new meaning. A word so perverted from its true meaning becomes impoverished and does but poor service at best. In

scientific discourse it is the practice to use words of exact meaning, and to restrict the use of each term. This habit on the part of the most eminent scientific writers in English gives to the scientific literature of the last half of the nineteenth century a dignity and charm that is not possessed by any other class of literature of the same period.

On page 2 of his pamphlet on the Temples of the Cross, etc., Mr Bowditch uses the word *normal* four times. At line 4 and at line 7 he uses the word correctly, since he follows regular English usage; but at line 12 and line 27, following a practice introduced by others, he uses it in a connection for which I can find no sanction either in scientific or in popular usage. Dr Seler, writing in his native German, is equally at fault. For English writers at least the word *prime* would seem to meet the demands of the case perfectly. We have *prime vertical*, *prime meridian*, *prime of the day* (meaning beginning of the day), *prime of the moon* (meaning the first appearance of the new moon), and many similar expressions, and if we were to apply the name "prime date" to 4 Ahau 8 Cumhu no violence would be done and we would have the sanction of correct scientific usage. Moreover the term would express the idea which we have in mind. Although it has not given rise to so many misunderstandings as the practices which Mr Bowditch justly condemns, this use of the word *normal* seems to be unfortunate, and it may be worth suggesting that the word *prime* be used instead.

The difficulty of avoiding errors in Mayan nomenclature might be illustrated by a curious instance in the paper under review. On page 4, third paragraph, line 6, we find the expression "Ahau 8," the word Ahau being used as though it were a time period, and the figure 8 as if it stood for a numerical count. At page 8 again we find the expression *hun piztun oxlahun ahau* translated "Tun 1 of Ahau 13," the 1 after Tun standing for a numerical count, while the 13 after Ahau stands for something quite different. Of course it is not what the author means, since he makes his meaning quite clear elsewhere; but this method of writing a date makes use of the word Ahau as if it were a period of time like Tun, a usage against which Mr Bowditch himself protests. The same mistake is repeated twice on page 10, where the phrase *uucpiztun uaxac ahau u kat-unil* is rendered "the Ahau 8, its katun." *Oxlahun Ahau* is 13 Ahau, and *uaxac Ahau* is 8 Ahau, and if we preserve the form of the original text in our English translation it will serve to indicate exactly what it stands for: a day name with its number attached.

G. B. GORDON.

The Temples of the Cross, of the Foliated Cross and of the Sun at Palenque.

By CHARLES P. BOWDITCH. Cambridge, Mass.: University Press, 1906. 8°, 18 pp. Privately printed.

The inscriptions on the three temples mentioned in the title have received more attention on the part of students of Central American archeology probably than any other monumental inscriptions of the Mayas. The length of the texts, their excellent preservation, the beauty of the sculpture both in the hieroglyphics and the figures that accompany them, and the conspicuous care, one might say reverence, with which they were guarded by the ancient Mayas, each in a separate sanctuary, are all calculated to rouse a large measure of curiosity concerning them. This interest cannot fail to be increased when one comes to examine the texts carefully, and yet though the ablest students of Maya literature have been at great pains over them they have proved unusually baffling. In the first place the initial series in two cases is written not in the normal glyphs but entirely in the much more difficult face glyphs, and in the third case the numbers attached to the period glyphs (and this is where the real difficulty comes in) are written in face glyphs. Another curious circumstance is that the dates on all three seem to be much more remote than most other dates recorded on the Maya monuments. Not only this, but it has been shown that the three dates are only a few days apart and that moreover the three inscriptions present a very close parallel throughout.

In the latest contribution to this interesting subject Mr Bowditch begins by accepting the interpretation of the initial series given by Goodman in all three cases, supporting this interpretation by three independent methods: first, by comparison of the face glyphs with others of known value; second, by process of elimination, and, third, by computation of the counts running through the inscriptions. Taking the three dates as thus established, the author then asks what meaning shall be given them. Are they mythical? Are they historical?

"I was at one time inclined to assign a mythical meaning to them, as such a length of time had passed from these dates to Cycle 9, in which most of the Initial and other dates are recorded. For instance, from the Initial date of the Temple of the Foliated Cross to the very early date of Stela C (west) of Quirigua, or the still earlier date of Stela 21 of Yaxchilan, there is a lapse of over 2800 years. I do not now think that this lapse of time necessarily carries this date back to a mythical period, though I do not believe that these early dates can be regarded as strictly historical."

After setting forth in detail the very close relation between the three inscriptions, a relation which warrants us in assuming actual identity for the same dates in the three inscriptions, Bowditch decides against their historical character on the ground that the same historical facts would probably not be repeated in this way. We are then asked to consider whether the three inscriptions may not have reference to the calendar in relation to the seasons, and the rest of the paper is concerned with an investigation along this line.

The date on the Temple of the Cross is

1.18.5.3.2 — 9 Ik 15 Ceh ;

that on the Temple of the Sun,

1.18.5.3.6 — 13 Cimi 19 Ceh ;

and on the Temple of the Foliated Cross,

1.18.5.4.0 — 1 Ahau 13 Mac.

Mr Bowditch is responsible for the statement that these dates correspond to March 8, March 12, and March 26 respectively, and that they therefore cluster round the vernal equinox. This of course would be true if we accept Landa's statement that the year began invariably on July 16, but although Landa is perfectly clear on this point it is difficult to see how this could have been, since the intercalary days were not included in the 52 year count and could not be adjusted to the long count. All the dates are within a few days of 1.18.5.4.0 — 1 Ahau 13 Mac, and the reason why that particular date was selected is explained in the following way: it was the vernal equinox according to the calendar, which however had got in advance of the season by reason of the omitted intercalary days. If, now, the Mayas reckoned 25 intercalary days to every period of 104 years (a very accurate reckoning), the number of intercalary days accruing at this date from the beginning of the Great Cycle in which the date falls would be 182.5 days, or exactly half a year, and therefore it was a convenient time to make the calendar correspond to the season, which was the autumnal equinox instead of the vernal equinox. In the Temple of the Sun are found two glyphs which have the appearance of relating to the division of the seasons.

The most striking evidence offered in favor of the idea that these inscriptions deal with the count of intercalary days is that adduced from the Temple of the Foliated Cross where the distance number 1.14.14.0, found in the text of the inscription, is the exact number of intercalary days, according to the method already explained, that would be required for the period 10.2.0.0.0.0 — that is to say, Cycle 2 of Great Cycle 10. The date 2 Ahau 3 Uayeb is declared in the same text to be Cycle 2,

and the number 1.14.14.0 is the distance from the initial date, 1 Ahau 13 Mac, to 2 Ahau 3 Uayeb. If therefore the Mayas reckoned 10 Great Cycles from the beginning of time, and had passed 2 Cycles besides, to 2 Ahau 3 Uayeb, without correcting the calendar for intercalary days, they would have to go back 1.14.14.0 days to 1 Ahau 13 Mac and count the intervening days in the calendar over again in order to bring the seasons and the calendar into accord.

The conclusions to which the matter presented in Mr Bowditch's paper would seem to lead and to which the author stands committed are as follows:

1. That the three inscriptions have reference to the calendar in its relation to the seasons.
2. That the Mayas calculated 25 intercalary days for each 104 years.
3. That they reckoned ten Great Cycles of 13 Cycles each from the beginning of time, and time began (in as far as they were concerned with it in their calendar) on 4 Ahau 8 Xul, and not on 4 Ahau 13 Yax as supposed by Goodman.

After a careful examination of all the evidence presented it seems difficult to escape the first of these conclusions; and if we accept the first we are bound to accept the other two, for the first is reached chiefly through these.

The objections which present themselves are, first in regard to the difficulty in reconciling the statement that the year began July 16 with the form and structure of the calendar. If the beginning of the year was not fixed, but shifting, as it would be if the intercalary days were not counted (and we know that they were not, either in the 52 year period or in the long count), then the reason offered for the choice of the date 1.18.5.4.0 loses its force. Moreover it would seem as if the Maya priests were sufficiently skilful in their calculations to fix the equinoctial dates correctly. If these three dates that fall so closely together represent the observations of three separate priests regarding the date on which the days and nights became equal, they would seem to have been less successful in this than in other matters relating to the movements of the heavenly bodies. Again if the Mayas who built these temples were living in Cycle 9, as appears to have been the case, why should they want to correct the calendar for Cycle 2? It has not been shown that there is anything in these inscriptions indicating that they brought the intercalary reckoning down to their own time. Still the evidence presented remains for the greater part unaffected by these objections, and when we return to the main conclusions they seem well supported.

G. B. GORDON.

Primitive Secret Societies. A Study in Early Politics and Religion. By HUTTON WEBSTER, Ph.D. New York: The Macmillan Company, 1908. 8°, 227 pp.

This is probably the best general work on the subject that has yet appeared, at least in English. It is not, of course, exhaustive, being intended apparently rather as a text book for the beginner in Anthropology, or a convenient summary of our present knowledge of this subject, than as a treatise for the research student. Viewed in this way it fills a need which instructors in anthropology must feel at the present time, and fills it well. This might have been anticipated, since, as we are informed, it has "enjoyed the advantage of a preliminary examination by Professor W. Z. Ripley and Professor T. N. Carver," of Harvard University, where in its original form it was presented as a thesis for the doctorate in Political Science, while the manuscript has been read by Professors Toy and Moore. It bears witness to a great deal of painstaking research and compilation on the part of its author, as is well attested by the abundant footnotes. The material is grouped into eleven chapters treating of The Men's House, The Puberty Institution, The Secret Rites, The Training of the Novice, The Power of the Elders, Development of Tribal Societies, Functions of Tribal Societies, Decline of Tribal Societies, The Clan Ceremonies, Magical Fraternities, and Diffusion of Initiation Ceremonies.

In his preface Dr Webster states that he started with no preconceived notions on the subject, but "endeavored to shape his theories in accordance with his facts, and in many instances by abstaining from generalization, to let his facts carry their own significance to the reader's mind." This is, of course, the correct scientific position, and there is every evidence of Dr Webster's perfect sincerity in making the statement.

While Dr Webster may himself have been free from preconceptions, however, it is to be regretted, though it was perhaps inevitable, that he has not escaped those in the minds of many of his authorities. The following remarks should, therefore, not be understood as applying to the work before us so much as to those authorities from which the "preconceptions" just referred to have been drawn. I have just spoken of "preconceptions," but I should rather have said preconception. It is a preconception which at the present day affects not only students of anthropological literature, but even a number of field workers, dominates their thought, governs their theories, and tends to bias even records of plain facts. To distinguish it from the legitimate hypothesis of evolution with which it has grown up I would suggest the term "evolutionism." Ostensibly it stands for an honest endeavor to reconstruct the past history of

man, man's institutions, customs, organization, and religion, but practically it is governed by a vicious principle destructive of all results truly scientific. That modern civilization has evolved or developed from a simpler or "more primitive" condition is true enough, and it is also true that this primitive condition is to a degree reflected in the present state of savage and semi-savage races. The vicious principle is involved in this, that students insist on their ability to pick out from these primitive races and their customs those which are more and those which are less "primitive," to state that certain tribes are at the very bottom, that certain others have passed through just that state and are now slightly beyond it, that certain others having passed through those two states are slightly beyond the second, and so on; in short, contemporary tribes are made to do duty as representatives of so many successive states of the whole human race. Even this we might condone, however, were the selection of tribes and customs made after a careful survey of the entire field and a more thorough attempt to eliminate what is special and transitory in any one area. Unfortunately this has not been done in the great majority of cases. Instead of selecting characteristics as primitive which are general, being common to all or to a large proportion of the savage tribes, customs which are most peculiar and individual are selected, resemblances are found in other sections, and those resemblances are dubbed "survivals," the primitive condition supposedly being represented by the tribes which preserve this custom in fullest vigor. The selection of primitive customs is also apt to be governed by an assumption that those which are strangest and most repulsive to white races are *per se* the most primitive, while all others are later, and where we do not find them they have died out. Thus in certain parts of the world tribes are found to consist of divisions each known by the name of some species of animal or plant to which it considers itself to bear peculiar relations, other tribes show something similar but not so pronounced, while civilized races do not possess such an institution; *ergo* all primitive men consisted of such divisions, and the tribes which show this form of organization in its perfection are the most primitive, while those containing customs at all resembling it present "survivals" of this "primitive" condition. In the same way there have been attempts to show that cannibalism, incest, promiscuity, marriage by capture, the wearing of labrets, head deformation, etc., were characteristic of "primitive" man, and where each of these is best developed we have "primitive" conditions, where it is poorly developed "survivals," and where it is wanting it has died out. To a votary of evolutionism it seems impossible to suggest that the poorly developed custom may be in

its infancy and the well-developed one peculiar to a few peoples and limited both as to time and area, or to suggest that both may be sporadic and that the poorly developed may never, even if uninfluenced by civilization, pass beyond its present status.

A thread of this preconception may be found running from chapter to chapter through the work before us. As an instance of the kind may be mentioned a statement on page 147 to the effect that "among the Indian tribes of the Northwest the clan organization, while still retained, is in process of decay," and farther on "the northern [coast] tribes continue to reckon descent on the maternal side; the southern tribes have now established paternal descent." It is hard to understand why these should be made in face of the exactly contrary conclusion to which nearly all students intimately acquainted with the north Pacific coast tribes have arrived, and which appear to be contradicted by what Dr Webster himself says on the page following. On page 147 we also read that "among the tribes of the Southwest . . . the totemic clans have entirely broken down, and in their place have arisen the numerous fraternities found, for example, among the Zuni and Hopi Indians." Now the truth of the matter is that except for the influence of white men the Pueblo clans were never stronger. What has taken place is the diffusion of the old clan rituals among other clans than those which originally had exclusive control over them. These are minor defects in Dr Webster's work, however, due to the influences which I have just inveighed against, and at the present time it is hardly more probable for a young student to avoid them than for the average child to escape the measles. A few years of field work will change his views along this line quite materially.

JOHN R. SWANTON.

The Mother of California. Being an Historical Sketch of the Little Known Land of Baja California from the Days of Cortez to the Present Time, Depicting the Ancient Missions Therein Established, the Mines There Found, and the Physical, Social and Political Aspects of the Country; Together with an Extensive Bibliography Relative to the same. By ARTHUR WALBRIDGE NORTH. With an Introduction by Cyrus C. Adams, of the American Geographical Society. San Francisco and New York: Paul Elder & Co. [1908]. 12°, xi, 169 pp., 32 pl., map. (\$2.00.)

The author of this interesting book is not unknown to the readers of this journal, for he has already given them the results of some of the observations made during his protracted stay in the little-known land of Lower California.

Although lying at our very doors, it is safe to say that before the ap-

pearance of Mr North's book not an American in a hundred had the vaguest knowledge of the romantic history, the inhabitants, and the resources of that vast territory happily designated "The Mother of California." Visited by Spaniards within half a century of the discovery of the New World, Lower California, until then shrouded in the mystery of Aztec legend, became an island and a peninsula, and again an island and a peninsula in turn, so indefinite was the knowledge of the geography of the Pacific main during a period of about two centuries; and it was long ere the wilds of the peninsula were penetrated by Spanish missionaries, who established stately churches in the midst of a native people probably ruder in culture than any other American Indians. Pushing northward to more fruitful fields, they founded the first missions in our California, but with the same result to the Indians in the north as to those of the peninsula, who were ill prepared to withstand intimate contact with civilization. The author reviews the history of the entire period, shedding new light on the establishment and the situation of the missions, as well as on the people in whose behalf the good fathers wasted their lives. Mr North falls into error respecting some of the early Spaniards in adjacent parts of New Spain, but as these do not bear directly on his special subject, less harm is done than if the case were otherwise. For example, the companion of Alvar Nufiez Cabeza de Vaca was not a mulatto named Sebastian, but a Barbary negro named Estevanico, or Estévan; and his successor in the exploration of the north was Fray Marcos de Niza, or Marc of Nice, not "Noza." Furthermore, neither Cabeza de Vaca nor his negro companion ever heard of Tatarrax, an Indian of the Great Plains met by Coronado years afterward in Kansas; nor did that individual have a "long beard, bejeweled robes and wondrous palaces," or worship "before a golden cross," or render "obeisance to the image of the Queen of Heaven." No Indians were ever guilty of such extravagances. We call attention to these points not as an indication of the general trend of the book by any means, but to draw strong contrast between them and the excellent results that Mr North has achieved in his researches and observations respecting the immediate field. That he is familiar with the literature of his subject is shown by the excellent bibliography (pages 163-169), in which might have been included, however, Dr H. F. C. ten Kate's *Reizen en Onderzoekingen in Noord-Amerika* (Leiden, 1885), Dr Charles Rau's partial translation of the valuable *Nachrichten* of Father Jacob Baegert, published in the *Smithsonian Report* for 1863, and McGee's *Seri Indians*, with the section bearing on Yuman linguistics by Mr J. N. B. Hewitt. Nor should we fail to note that,

versatile genius though he be, Dr ten Kate is not the author of the *Lettres Edifiantes et Curieuses*, which an evident printer's slip in the bibliography would have us believe. But all this is perhaps hypercritical, for the excellent map, compiled to a large extent from the author's personal observations, alone more than compensates for any sins of omission or commission. The fact remains that we have here the most useful and illuminating work on Lower California that has appeared, and the only one well worthy of the name since the days of the Spanish missionaries.

The publishers have done their full share toward making the book attractive, both in letterpress and in illustrations. The latter are from Mr North's photographs and comprise a number of views of importance not only to the general student but to the ethnologist and the historian as well.

F. W. HODGE.

The Principles of Anthropology and Sociology in Their Relations to Criminal Procedure. By MAURICE PARMELEE, M.A. New York: The Macmillan Co., 1908. 12°, 410 pp.

This brief treatise on criminology concerns itself with criminal procedure as an application of the scientific principles of criminology so far discovered. Naturally, the main thesis is introduced by a detailed statement of what has so far resulted from criminological investigation. The author states that the development of what may be called the science of criminology began with the intense interest in social problems aroused by the eighteenth century philosophers (Montesquieu, Voltaire, Rousseau, the Encyclopedists, etc.), in response to which a critical examination was made of the naïve criminal procedure in vogue at that time, leading to the formulation of principles, chiefly deductive, based on the assumptions of a free will, absolute moral responsibility, and the theory of social contract. Later, about 1876, the formal inauguration of inductive criminological research may be said to have taken place under the leadership of Lombroso. Thus there are two schools of criminology: the deductive, or classical, and the inductive, or positive school. The author makes it clear, however, that this is not to be taken as a distinction between a subjective and an objective point of view, since the positive school seeks data "both inside and outside of the wrong-doer." Thus the later school employs the methods of psychology and sociology, as well as those of the more objective sciences. As its name implies, its primary concern is the accumulation of facts with which theories of practical procedure may be constructed.

The second chapter of the book reviews the results of the positive

school under the caption *Criminal Anthropology and Sociology*. Lombroso, Garofalo, and Ferri are considered the founders of this school — all Italians, — hence the name, Italian school of criminology, often found in current literature. Of these, Lombroso may be considered the anthropologist, or better the morphologist; Garofalo the sociologist, and Ferri the jurist; that is, each starts from a different point of view, but all reach the same problem and use essentially the same method. It appears that, to this school, crime is a natural phenomenon and not an artificial thing created by the law. The author gives an abstract of the works of these leaders, though without very satisfactory critical estimates of their conclusions. He calls special attention to Lombroso's later views, that atavism, both psychological and morphological, is but one factor in the production of crime; and that pathological conditions, or the "sick-man" view, must be given large representation. He summarizes the present situation as follows:

"This variety of theories shows the complexity of the problem of criminality. It indicates the large number of forces which cause the criminal. To the study of these causes must be brought the aid of many sciences, among them biology, anthropology, the medical sciences, psychiatry, etc. It is evident that no unilateral theory can answer this problem, but that a very broad and synthetic theory alone can serve this purpose."

The author reviews, rather too briefly, the question of a criminal type. He recounts some of the objections raised against Lombroso's anatomical and anthropometric data, from which it appears that, after all, the existence of a homogeneous group of individuals given to crime has not been proven. On the other hand, it must be admitted that the Italian school has given a strong presumption that those who commit crime are most frequently marked by unusual organic and psychological variations. While the author is doubtless correct in dismissing the question of a criminal type as a matter of definition, it will not do to ignore the problem of the existence, or non-existence, of more frequent variations among those who commit crime. Since the Italian school claims to have a basis in fact for its principles of procedure, it is not clear just how criminal anthropology can be relegated to a secondary place.

The greater part of the book is given to the definition of crime, theories of punishment, criminal law and procedure, the police agency, and a critical review of the methods employed in criminal courts. As a matter of interest it may be noted that the indeterminate sentence and probational parole originated in America; that the present system of trial is

little more than the old method by combat, with the judge or jury as umpire; and that the present criminal law takes no account of scientific data. The chapter on evidence is especially suggestive and reviews at length the recent work of Münsterberg on the psychological problems involved in securing testimony. Throughout the entire work the author is ever conscious of the great complexity of causes and conditions involved in criminal phenomena, and has, on the whole, made what appears to be a clear, concise exposition of the present status of criminology.

CLARK WISSLER.

The Hearing of Primitive Peoples: An Experimental Study of the Auditory Acuity and the Upper Limit of Hearing of Whites, Indians, Filipinos, Ainu and African Pigmies. By FRANK G. BRUNER, Ph.D., Assistant Director, Department of Child Study and Pedagogic Investigation, Public Schools, Chicago. (Columbia Contributions to Philosophy and Psychology, Vol. XVII, No. 3.) New York: The Science Press, 1908. 8°, 113 pp.

Until the appearance of this monograph, the only systematic study of the psychology of the lower civilized peoples was that of the Cambridge Anthropological Expedition to Torres Straits. Loose and various opinions have been expressed by persons in contact with such peoples, and numerous anecdotes collected in which differences in sensory discrimination and other activities are affirmed or denied, as the case might be; but, with the exceptions just noted, no data of real positive value have been published. Dr Bruner confined his investigations to the determination of the auditory acuity and the upper limit of hearing among Indians, Filipinos, Ainu and African Pigmies, as represented at the Louisiana Purchase Exposition in 1904. To these results were added those of white people taken under the same conditions. The Indians tested were 10 Cocopas, 7 Kwakiutls, 4 Tehuelches, and 63 members of the Model Indian school (largely of mixed blood). The Filipinos comprised 107 members of the constabulary, chiefly from the Christianized tribes, together with 13 Filipino college students. The 6 so-called Pigmies were Batwas, Batsubas, and a Cheri Cheri.

The first chapter of the monograph is given to a statement of the racial and tribal relations among the individuals tested, with occasional comment on their relative intelligence as inferred from their cultures. The remainder of the work is divided into two parts: the first treating of the upper limit of audibility; the second, auditory acuity. Under the former head we have an historical review of the special investigation of the upper threshold of hearing, beginning with the observations of Helm-

holtz on the inability of some persons to hear the chirp of a cricket, and ending with the more recent extended summaries of Zwaardemaker.

The problems involved were almost as much a part of physics as of psychology, since the success of the investigation depended primarily on the designing and perfecting of an instrument adapted to tests and, at the same time, reliable in operation. The most successful instrument, so far, is the Galton whistle, which has been greatly improved by Edelmann. With this instrument, tones can be produced at will for any value up to 110,000 D. V. per second. While for various reasons, chiefly mechanical, the absolute determination of the highest number of audible vibrations per second has not been satisfactorily determined for the white race, the results so far available prove absolutely that there is a gradual decline, with age, in the ability to hear high-pitched sounds. The mechanical difficulty aforementioned arises from failure correctly to graduate the instrument. Dr Bruner discusses at length the methods by which he empirically graduated his instrument, so that approximate differences of 1000 D. V. per second could be read.

With this perfected instrument the tests were made in a laboratory at the Exposition with all the care and precision possible. The results for the right ear were as follows:

	<i>Number</i>	<i>Average</i>	<i>n</i>
Pigmies	6	33,223 D. V.	2468
Whites	156	32,285 "	2344
Cocopa	10	32,123 "	977
School Indians	63	31,975 "	2663
Tehuelches	3	30,240 "	3551
Filipinos	97	29,916 "	2180
Ainu	7	28,864 "	1872
Kwakiutl	7	28,296 "	1413

The results for the left ear vary slightly from those of the right, but not sufficiently to make any material changes in the order as given above. As the writer implies in the discussion of these values, anyone familiar with statistical methods will recognize the practical certainty of some of these differences. Thus while the number of Pigmies tested is too small to be given much weight, the fair number in many other groups, together with the fact that all Indians as well as Filipinos fall below Whites, renders the result reasonably certain. On the other hand, the fact that Pigmies excel Whites meets in a way the naïve objection that the latter excel because of greater familiarity with the general conditions of the test. The author's detailed analysis of the records for each group leaves little

to be desired, and greatly increases the force of his claims for real differences.

In an additional chapter are presented supplementary data on the differences due to age as observed by him among white subjects, and in turn showing that, even after making due allowance for this disturbing factor, it is practically certain that racial differences exist.

The second part of this monograph is given to the discussion of auditory acuity, the general method of treatment being similar to that in the first part. From the historical section it appears that tests for acuity have been arbitrary, because of the peculiar relations between distance and intensity. For example, the rough practical method of testing by the ticking of a watch has obvious disadvantages when the results secured from the use of different watches are to be compared. Because of the apparent simplicity of acuity tests, or other reasons, a vast amount of literature concerning the best methods and their results has been accumulated; but unfortunately, as the author sees it, these results are useful only as an aid in devising a satisfactory method, since they cannot be satisfactorily compared, as in case of the threshold for pitch. So far, the most promising instruments have been the tuning fork and the telephone. These, however, need complex appliances to meet the conditions of a test. The author selected the telephone and, by improving the apparatus used by former investigators, produced what seems to be a fairly satisfactory apparatus. As in the previous case, this apparatus was tried out empirically and the instrument graduated by difficult but well-known physical methods, the details of which are given in the paper; so that the results might be expressed in units of sound intensity. This overcomes the difficulty in previous tests, in so far that the results of other investigators using other types of apparatus may be rendered comparable on the basis of a common objective unit.

In making the tests, all the usual laboratory precautions seem to have been taken. The subjects were required to say whether the clicks produced came in ones, twos, or threes, the correctness of the answers being taken as the criterion of auditory acuity. The results of this test gave the relative rank for the right ear as, Whites, Cocopas, School Indians, Pigmies, Tehuelches, Kwakiutl, Ainu, Filipinos; for the left ear, Whites, Pigmies, School Indians, Cocopas, Kwakiutl, Ainu, Tehuelches, Filipinos. While there was some shifting of positions for the left ear, the relative positions of Whites, School Indians, and Filipinos remained the same throughout. Also by the principles of statistical methods, it is shown that the differences between these three groups are practically certain.

The final results of this research are in general agreement with the less systematic and controlled tests of Myers, a member of the Cambridge Expedition to Torres Straits, and may be summarized in our author's own words:

"The one fact standing out most prominently as a result of these measurements is the clearly evident superiority of Whites over all other races, both in the keenness and in the range of the hearing sense. The evidence is so clear and striking as to silence effectually the contention that the hearing function, inasmuch as it is of relatively less utility in the pursuits attending modern social conditions than those surrounding the life of the savage, has deteriorated and is degenerating. On the contrary they are more nearly in keeping with the advanced positions taken by modern dynamic psychology, to the effect that not only the intellectual but sensory possibilities are to be stated in terms of the variety of motor response of which the individual is capable. Other things being equal, those individuals or races possessing the greatest complexity and variety of reactions to elements in their respective environments likewise will be gifted with keener and more acute sensory mechanisms."

It should be noted that the author's chief interest in the subject is that of a psychologist; hence, as may be expected, he touches lightly on those aspects of the problem that appeal especially to anthropologists. In deference to the latter, we may pass over the many suggestions offered to psychological theory such as the possible relations between degrees of sensory discrimination and movement, perception of pitch as related to the intensity of sound, etc., and mention those of special anthropological interest. Not being an anthropologist, the author falls into the popular way of considering the traditional cultural ranks of peoples as identical with corresponding differences in intelligence, and argues thence to a functional relation between sensory discrimination and general intelligence. For example, he is puzzled by the current account of some crude and revolting customs among the Tehuelches, when considered in connection with their fair rank in his tests; again, he finds a correlation between the high rank of the Congo natives and what he considers their great activity when at home. This argument alone will not appeal strongly to anthropologists, for reasons that need not be stated. There is, however, another point of interest: the Indians of the school and Filipino students rank higher than their unschooled tribesmen. (It seems rather startling that mere school work should greatly raise the threshold for pitch; so that a whole series of tones, inaudible to others of their kind, should be heard.) This appears to minimize the more fundamental racial differ-

ences, and to favor the theory that all such differences may be explained as due to convention and education. It must be said, however, that the Filipino students are an exceptional class and that the Indian students were more than half of mixed-blood. While the author took the former under consideration, he seems to have ignored the latter. Of course, we cannot say that because Whites stand high in the tests and Indians low, their mixed offspring will occupy an intermediate place; but this fact of mixture must be considered as a probable factor. Yet, notwithstanding all this, the fact remains that even the Indians of the school were found to be of lower rank than the Whites; while, as the author truthfully states, they showed no definite cultural differences from them. Again, we have some interesting incidental observations as to the deportment of the different peoples while making the test: the author finds the Congo natives alert and active; the Ainu, excessively stupid and unresponsive; etc., observations of as great positive value as those of a similar nature often recorded by anthropologists.

It goes without saying that the results of Dr Bruner's research will be received among American anthropologists with a great deal of interest. There is current among them a theory that all psychological differences are more apparent than real, and that practically all the arguments so far advanced in support of existent differences can be met by the claim that conventionality and education are sufficient to account for the same. It is evident, however, that this is a theory of interpretation rather than a denial of the facts; and that it finds its support in drawing distinctions between acquired habits on the one hand, and inherent habits on the other, and fixing attention on the latter; whereas the question at issue is the relative degree of perfection possible in such acquisition. So far discussion of the problem has been chiefly by the methods of logic; but now, in the work of Bruner and the earlier work of Myers, we have at last some empirical data for one important group of psychological activities, from representatives of what are regarded as four of the main divisions of mankind; and immediately we find evidence of differences.

CLARK WISSLER.

SOME NEW PUBLICATIONS

AMBROSETTI, JUAN B. *Exploraciones arqueológicas en la ciudad prehistórica de "La Paya" (Valle Calchaquí—Provincia de Salta). Campañas de 1906 y 1907. Segunda parte (Descripción del material arqueológico).* Publicaciones de la Sección Antropológica, Facultad de Filosofía y Letras, No. 3 (2ª parte). Buenos Aires: 1908. 8°, pp. 279-533, fig. 122-288.

For a review of the first part of this valuable memoir, see page 441.

ANNUAL Archaeological Report, 1907. Being part of Appendix to the Report of the Minister of Education, Ontario. Toronto: L. K. Cameron, 1908. 8°, 121 p., ill.

BLOOMFIELD, J. K. *The Oneidas*. New York: Alden Brothers, 1908. 8°, x, 7-395 p., 81 ill.

"There has been made little or no attempt to give a statistical account of Indian treaties, Reservation transfers, or Government dealings with the Nation, but simply to record such customs and events of their past and present as may be of general interest."
— *Preface*.

BRUNER, FRANK G. *The hearing of primitive peoples*. An experimental study of the auditory acuity and the upper limit of hearing of whites, Indians, Filipinos, Ainu and African pigmies. (Columbia University, Archives of Psychology, No. 11.) New York: Science Press, 1908. 8°, iv, 113 p.

See review, page 463.

CHANNING, WALTER, and WISSLER, CLARK. *The hard palate in normal and feeble-minded individuals*. (Anthropological Papers, American Museum of Natural History, I, pt. v, p. 283-349. 9 pl., New York, 1908.)

CURTIN, JEREMIAH. *The Mongols*. A history. With a foreword by Theodore Roosevelt. Boston: Little, Brown, and Company, 1908. 8°, xxvi, 426 p., map.

DUNN, JACOB PIATT. *True Indian stories with glossary of Indiana Indian names*. Indianapolis: Sentinel Printing Co., 1908. 16°, viii, 320 p., ill.

FOY, W. *Führer durch das Rautenstrauch-Joest-Museum (Museum für Völkerkunde) der Stadt Cöln*. 2 Auflage. Cöln: Druck der Kölner Verlagsanstalt A.-G., 1908. 18°, iv, 259 pp., ill.

See review, page 443.

GUÉBHARD, A. *Camps et enceintes*. Conférence publique faite au grand théâtre de la ville d'Autun le 13 Août 1907. Extrait du Congrès pré-historique de France, III^e session (Autun, 1907), 1908. 8°, pp. 997-1036, 121 fig.

See Periodical Literature, page 470.

HARRINGTON, M. R. *Iroquois silverwork*. (Anthropological Papers, American Museum of Natural History, I, pt. vi, p. 351-369. 7 pl., 2 fig., New York, 1908.)

HRDLÍČKA, A. *Physiological and medical observations among the Indians of southwestern United States and northern Mexico*. (Bureau of American Ethnology, Bulletin 34.) Washington: Government Printing Office, 1908. 8°, ix, 425 + pp., 28 pl., 2 fig.

LUMPKIN, WILSON. *The removal of the Cherokees from Georgia*. By Wilson Lumpkin. Including his speeches in the United States Congress on the Indian question, as Representative and Senator of Georgia; his official correspondence on the removal of the Cherokees during his two terms as

Governor of Georgia, and later as United States commissioner to the Cherokees, 1827-1841 [etc.]. [Prepared, with a preface, by Wymberley Jones De Renne.] Privately printed, Wormsloe [Savannah, Ga.], 1907. Dodd, Mead and Co., publishers, New York. Two vols., 8°.

MOORE, CLARENCE B. Certain mounds of Arkansas and of Mississippi. Part I—Mounds and cemeteries of the lower Arkansas river, Part II—Mounds of the lower Yazoo and lower Sunflower rivers, Mississippi. Part III—The Blum mounds, Mississippi. Reprint from the Journal of the Academy of Natural Sciences of Philadelphia, Vol. XIII. Philadelphia, 1908. 4°, [476-] 605 pp., many ill., including 8 colored plates.

MOOREHEAD, WARREN K. Fort Ancient, the great prehistoric earthwork of Warren co., Ohio. (Phillips Academy, Department of Archaeology, Bulletin IV, pt. II, p. 27-166, ill., Andover, Mass., 1908.)

PARKER, THOMAS VALENTINE. The Cherokee Indians, with special reference to their relations with the United States government. New York: Grafton Press, 1907. 12°, viii, 116 p., map, pls. (\$1.25.)

PARMELEE, MAURICE. The principles of anthropology and sociology in their relations to criminal procedure. New York: The Macmillan Company, 1908. 16°, viii, 410 p. (\$1.25.)

See review, page 461.

PEABODY, CHARLES. The exploration of Bushey cavern, near Cavetown, Maryland. (Phillips Academy, Department of Archaeology, Bulletin IV, pt. I, p. 1-26, ill., Andover, Mass., 1908.)

REPORTS of the Cambridge Anthropological Expedition to Torres Straits. Volume VI. Sociology, Magic and Religion of the Eastern Islanders. Cambridge (England): University Press, 1908. 4°, xx, 316 p., 30 pl., 70 fig.

The chapters on folktales; birth and childhood customs, and limitation of children; courtship and marriage, trade, quarrels and warfare, magic, religion, and mythical beings, are by A. C. Haddon; those on genealogies, kinship, personal names, the regulation of marriage, and social organization, by W. H. R. Rivers; property and inheritance, by A. Wilkin; funeral ceremonies, and the cult of Bomai and Malu, by A. C. Haddon and C. S. Myers.

RUSSELL, FRANK. The Pima Indians. (26th Report Bureau of American Ethnology, Washington, 1908, p. 3-389. 47 pl., 102 fig. Issued also separately.)

SWANTON, JOHN R. Social condition, beliefs, and linguistic relationship of the Tlingit Indians. (26th Report Bureau of American Ethnology, Washington, 1908, p. 391-485. 3 pl., 15 fig. Issued also separately.)

WRIGHT, ROBERT C. Indian masonry. Ann Arbor, Mich.: Tyler Pub. Co., 1907. 16°, viii, 123 p., ill.

The author discerns relationship between the esoteric rites of certain tribes and those of the Masonic fraternity.

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 directly 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

- Austin (O. P.)** Queer methods of travel in curious corners of the world. (*Nat. Geogr. Mag.*, Wash., 1907, XVIII, 687-715, 7 pl., 21 figs.) Treats briefly of S. American burro, Delhi camel-wagons, Egyptian wedding procession, Belgian dog milk-wagon, raft of inflated bullock-skins in India, Indian bullock-wagon, Indian "ekka," Hyderabad elephant conveyances, Calcutta palanquin, Indian "push-push," Ceylonese bamboo-covered carts, Carabaos threshing rice in Philippines, Tagalog boys carrying vegetables, Filipinos carrying water in bamboo tubes, Filipinos carrying milk, vehicles in Shanghai, Hongkong, and Yokohama, one-rope (rawhide) bridge across Thelmu river (Uri, India), Madeira ox-sleds, Australian automobile train, etc.
- Bell (A. G.)** A few thoughts concerning eugenics. (*Ibid.*, 119-23.) Dr B. argues that in the case of consanguineous marriages "we do not know conclusively whether consanguinity in the parents produces the defective condition, or whether it simply intensifies a preexisting tendency in the family"; that the importance of the inferior is overrated, "an increase in the superior element seems to be a more important factor in producing improvement than a decrease in the inferior element"; that fellowships should be granted on the condition of marriage rather than celibacy; that legislative restrictions on marriage are unwise. The key to the problem is prepotency.
- Children of the world.** (*Ibid.*, 126-40, 15 pl.) Interesting pictures of Danish, Spanish, Chinese, Japanese, Burmese, Hindu, Hawaiian, Ceylonese, Javanese, Jamaican Negro, Moki, Congo Negro, Egyptian boys and girls, school-children, etc.; also Chinese infant coolies.
- Giuffrida-Ruggeri (V.)** L'antropologia e le arti belle. (*Riv. d'Italia*, Roma, 1907, X, 2, 900-17.) Treats of anthropology in relation to the fine arts. Views of Duhoussiet, Richer, Thomson, etc., the theories of the Greeks and Romans and of the medieval artists, are discussed, the representation of the male and female forms in particular. Michel Angelo followed the Romans rather than the Greeks and went away from nature, in some ways, in his figures of women, e. g., in the matter of the breasts. According to G.-R., "artistic anatomy ought rather to be called anthropology applied to the fine arts."
- Guebhard (A.)** Camps et enceintes. (*Congr. Préhist. de France*, III^e Sess., Autun, 1907 [1908], 997-1036, 121 figs.) Treats, with ample bibliographic references, of "camps" and enclosures of all sorts, ancient and modern, in all parts of the world, their origin, development, etc.,—the need of defence was born with that of life in the open air, Cyclopean masonry was succeeded by more complicated architecture in the bronze and iron ages. Prehistoric works, Celtic "forts" and *duns*, Italian *castellieri*, Portuguese *citánias*, Scandinavian *bygdaborge*, Balearic *talayots*, Sardinian *nuraghe*, German *Ringwälle*, Rhodesian kraal-ruins, American Indian mounds, Russian maidens and *kurgans*, Gallic and Roman walls, etc., are considered. The illustrations are good.
- Koch (W.) and Mann (S. A.)** A comparison of the chemical composition of three human brains at different ages. (*Proc. Physiol. Soc.*, Cambridge, 1907, xxxvi-xxxviii.) Gives results of examination of brains of a 6-weeks and a 2-year-old girl and a 19-year-old youth, showing that with the growth of the brain go "a decrease in moisture, pro-

teins, extractives, and ash, a change usually found in growing tissues," and "an increase in cerebrius, lipid sulphur, and cholesterol."

Lasch (R.) *Die Arbeitsweise der Naturvölker*. (Z. f. Socialw., Leipzig, 1908, XI, Sndabr., 1-12.) Treats of primary and secondary divisions of labor (hunting, fishing, housebuilding, cattle-breeding are originally male occupations; cultivation of food-plants, etc., spinning and weaving, pottery, etc., are inventions and arts of woman; metallurgy belongs to men); individual and cooperative labor (the latter appears often in low forms in the hunt, agriculture, etc., — preparation of the soil for planting, the making of fire, and the working of the metals have been much dependent upon it); division of labor properly so-called (Borneo, sewing of coats by women, but cutting out of figures to be used on them as ornaments done by men; Kafirs, men make clay tobacco-pipes, women pottery in general); calling and profession (operate to cause divisions of labor). In primitive labor there is less monotony and poverty than is generally thought.

Lovejoy (A. O.) The fundamental concept of the primitive philosophy. (Monist, Chicago, 1907, XVI, 357-82.) Treats of words among "three typical savage races, — the North Americans, the races of Oceania, and the Bantu," which "express the general concept of a universal, impersonal, communicable energy," and "are the most important words in the religious vocabularies of the peoples in question, being commonly, but erroneously, taken, by those who have written of those peoples, to mean 'god' or 'spirit.'" Their existence moreover "establishes the existence in the savage mind of the rather abstract idea under consideration" and "throws a good deal of light upon the connotation and correlations of that idea and its place in primitive thought." Such words are the Dakotan (Siouan) *wakanda*, Algonkian *manitou*, Iroquoian *oki*; Melanesian *mana*, Polynesian *atua*, Malagasy *andriananitra*; Bantu *mulungu*; Masai *ngai*. This idea, according to L., lies at the bottom of very many religious ceremonies, practices, taboos, cults, rites, etc. Recent writers are criticized (e. g., Brinton, Frazer) for paying too little attention to this idea, for which the author proposes the term *manitounism*.

He seems to have missed altogether Hewitt's discussion of *orenda* in the *American Anthropologist*, 1902, N. S. IV, 32-46.

Lowie (R. H.) Catch-words for mythological motives. (J. Amer. Folk-lore, Boston, 1908, XXI, 24-27.) Lists of 29 catch-words in general use and 32 others now proposed.

Manouvrier (L.) *Mémoire visuelle. Visualisation colorée. Calcul mental. Notes et étude sur le cas de Mlle Diamandi*. (R. Éc. d'Anth. d. Paris, 1908, XVIII, 73-88, 2 figs.) Gives results of investigations on Miss U. Diamandi, sister of the calculator P. Diamandi, as to visual memory (number-scheme, month and week-schemes), colored vision (numbers 1-9, letters of alphabet, names of days of week, names of persons), mental calculation, etc. M. is of opinion that "any intelligent young person with a good visual memory can become, with appropriate cultivation, a mental calculator like Mlle Diamandi."

Mantegazza (P.) *Che cosa è il genio?* (A. p. l'Anthrop., Firenze, 1907, XXXVII, 391-8.) Criticizes A. Padovan's recent works *I figli della gloria, Le creature sovrane, L'uomo di genio come poeta-Che cosa è il genio?* (Milano, 1905) and his definition of genius, "a physiological condition of exquisite exceptional nervous sensibility." According to M., "the idea contained in the word *genius* is solely and uniquely empirical."

Mochi (A.) *L'indice di curvatura del frontale*. (Ibid., 439-45.) Gives results of investigations of the index of the curve of the frontal bone in skulls of 15 adult Italian males and 15 females, 5 children, 2 fetuses, 5 male and 5 female African negroes, 5 male and 5 female Australians, 10 male and 6 female Fuegians, 5 deformed Peruvians, 2 hydrocephals, a microcephal, the skull of Neandertal and that of the *Pithecanthropus*. As having prominent foreheads (index below 87) are reckoned the hydrocephals, fetuses, African negro women and Italian children; as medium (index 87-90) Italian women, African negroes, Italian men; as having retreating foreheads (index above 90) Australian women and men, Fuegian women and men, deformed Peruvians, microcephals, Neandertal man and *Pithecanthropus*. M. is of opinion that the sexual and racial variations of the frontal region are due more to the de-

gree of convexity of the curve and the differences of height than to diverse bilateral or longitudinal development of the *os frontis*.

Nuova (La) convenzione internazionale per l'unificazione delle misure craniometriche e cefalometriche. (Ibid., 325-335.) Lists and describes the cranial, mandibular, and cephalometric measurements recommended in the agreement at Monaco (1906) and approved by the Italian Anthropological Society at its meeting of Nov. 27, 1907.

Schmidt (G.) L'origine de l'Idée de Dieu. Étude historico-critique et positive. (Anthropos, Wien, 1908, III, 125-62, 336-68.) First two sections of a comprehensive discussion of the origin of the idea of God—philological period in first half of 19th century (Müller, etc.), ethnologic period last quarter of 19th century (Lubbock, Spencer, Tylor, Lang, Keane, Frazer, Jevons; Brinton; Chantaple de la Saussaye; Marillier, Reinach; Bastian, Schultze, Ehrenreich, Frobenius; reaction against animism; "pan-Babylonianism," Winckler, etc.), theological position (apologists and philosophers, exegetes—defects of position).

Schrader (F.) Océans et humanité. (R. Ec. d'Anthr. de Paris, 1908, XVIII, 33-45.) Treats of the oceans as influencing human culture, etc. For thousands of years the sea was the Mediterranean (with part of the Red sea and Persian gulf). The absence of tides of any consequence on the shores of the Mediterranean led to the intimate relations with land and sea of the ancient Greeks, their art, etc.

Stolyhwo (M.) Description d'un nouvel ostéophore. (Bull. Soc. d'Anthr. de Bruxelles, 1908, XXVII, extr., 1-2, 1 pl.) Brief description of a new osteophore, permitting the tracing of horizontal diagrams and also such orientation of the skull as to enable the tracing of transverse and sagittal diagrams. It can be used also for long-bores, etc.

Super (C. W.) The archeology of language. (Amer. Antiq., Chicago, 1908, XXX, 10-23.) Discusses attempts to discover "the primitive language" in ancient times (Psammetichus, ideas of Lucretius, etc.) and later (Frederick II of Germany, one of the Great Moguls of India, James IV of Scotland, etc.), the question why does man speak, grammar and speech, dialects, "original" languages of children (data of Hale), etc.

S. thinks these children are "cases of atavism of a particular kind such as are now and then seen in the domain of biology." They help solve the problem of the origin of speech.

EUROPE

Beddoe (J.) On a series of skulls, collected by John E. Pritchard, Esq., F.S.A. from a Carmelite burying-ground in Bristol. (J. R. Anthropol. Inst., Lond., 1907, XXXVII, 215-219, 1 pl.) Gives details of measurements of 11 medieval skulls from the Carmelite burying-ground (the Friary was founded about 1270 A.D.) in the city of Bristol (indices range from 72 to 84). The modern Bristol people are more dolichocephalic. Dr B. is of opinion that the growing type among the English proletariat is a dark long-headed type, and that conjugal selection plays an important part in changes of type.

Blümmel (E. K.) Drei Primizlieder aus Tirol. (Z. d. Ver. f. Volksk., Berlin, 1908, XVIII, 88-90.) Texts of three "first mass" songs. The folk treat the first mass of a young priest as his wedding celebration.

Bolte (J.) Der Schwank von der faulen Frau und der Katze. (Ibid., 53-60.) Gives text of two poems (one by Jörg Zobel, written ca. 1455-1456), the other by Mynser, a strolling singer of the middle of the 15th century), treating the theme of the "lary woman," etc.

— Zum deutschen Volksliede. (Ibid., 76-88.) Texts of 5 German folk-songs (two relating to Batavia in Java) and 6 Hessian songs collected by the brothers Grimm.

— Die Sage von dem unbewusst überschrittenen See. (Ibid., 91.) Notes on legends connected with Lakes Zürich and Laach (also one from Valais) that may have been served as basis for G. Schwab's poem (1826) "Der Reiter und der Bodensee."

— Ein Weihnachtspiel aus dem Sale-Kammergute. (Ibid., 129-50.) Gives dialect text and music of a Christmas play in 9 scenes, written down by Franz Tschischka (1786-1855) in Vienna, given by him in 1853 to Karl Weinhold and found among his MSS. Relations to several plays of the 16th century are evident from the text.

Brückner (A.) Neuere Arbeiten zur alawischen Volkskunde. Polnisch und Böhmisches. (Ibid., 203-14.) Résumés

- and critiques of recent literature relating to Polish and Bohemian folk-lore, publications of Kantor, Wierzbowski, Brückner, Potocki, Nitsch, Klich, Murko, Pracki, Kościński, Steinborn, Mańkowski, Karłowicz, Poliński, Florinskij, Łoziński, von Chłędowski, Wadowski, Handelsman, Ptaszycki, Hahn, Zablocki, Baruch, many articles in journals, etc.
- Courthion** (L.) *Sobriquets bas valaisans*. (Schw. Arch. f. Volksk., Basel, 1908, xii, 59-62.) Some 30 examples of local nick-names (*blason populaire*) from the districts of Entremont, Anniviers, Sion, St Maurice, Monthey, in the lower Valais, with explanatory notes.
- Daucourt** (A.) *Noëls jurassiens*. (Ibid., 124-34.) Gives texts of 9 *noëls* of the 18th century from the Jura country. These songs go back to the old mystery-plays of the Middle Ages and survived after the ban of the Church had been laid upon them. In the pre-Noël festivities figured the *tronche de Nô*, a great piece of pine burned in the *foenta* or little excavation in the wall. Songs were sung while the fire burned.
- Detting** (A.) *Die Hirsmonatfeier im Kapuzinerkloster zu Arth 1765-1766*. (Ibid., 81-91.) Treats of the celebration of "Hirsmonat" in 1765-66 at the Capuchin cloister of Arth in the canton of Schwyz, with the text of play, etc.
- Falls** (De W. C.) *Saint Stephen's fête in Budapest*. (Nat. Geogr. Mag., Wash., 1907, xviii, 549-58, 4 pl.) Describes the festival procession (20th August) in honor of St Stephen (d. 1036), the patron saint of Hungary, the costumes of peasants and nobles, etc.
- Favraud** (A.) *La station moustérienne du Petit-Puymoyen, commune de Puymoyen, Charente*. (R. Éc. d'Anthr. de Paris, 1908, xviii, 46-66, 20 figs.) Describes the Mousterian "station" of Petit-Puymoyen discovered in Dec. 1906. Stratigraphy, fauna (reindeer, horse, *bevide*, wolf, dog, etc.), stone tools (strikers, bolas, *pierres de jet*, discs, scrapers of several sorts, etc.), implements of horn and bone (flakers, etc.), human jaws (two pieces), teeth, etc. These human remains, according to F., strengthen the belief that "the human race peopling Europe at the close of the old paleolithic and at the beginning of the later paleolithic was a race analogous to the Negroes and the Australians of today." See *Siffre*.
- Frazer** (J. G.) *St George and the Parilia*. (R. d. Ét. Ethnogr. et Sociol., Paris, 1908, i, 1-15.) Argues that "the Festival of St George at the present day, like the Parilia [great shepherds' festival] of ancient Italy, is a ceremony intended to guard the cattle against their real and their imaginary foes, the wolves and the witches, at the critical season when the flocks and herds are driven out to pasture for the first time in spring." Reprinted from the third edition of the author's *Golden Bough*.
- Fürst** (C. M.) *Ärkebiskop Andreas Sunesson, en antropologisk studie*. (Ymer, Stockholm, 1908, xxvii, 69-82, 2 figs.) Anthropometric and other data of the skeleton and skull of Andreas Sunesson (d. 1228), in 1201 archbishop of Lund and primate of Sweden. The cephalic index was 69.9, approximate capacity 1,301 ccm., stature (calculated from long-bones) 172 cm. The archbishop was thus a typical north Teuton. The data are from MS. of A. H. Florman made in 1833 when the grave was opened.
- Gray** (J.) *Memoir on the pigmentation survey of Scotland*. (J. R. Anthropol. Inst., Lond., 1907, xxxvii, 375-401, 21 pl.) This valuable paper, with 21 distribution maps, tables, etc., gives results of the investigation of the color of hair and eyes, in the 110 districts into which Scotland is divided for the purpose, of about half a million school-children. Fair hair shows about the same distribution for both sexes (in all Scotland the average percentage of fair-haired boys is 24.9); industrial towns (e. g., Glasgow, and especially Dundee) seem unfavorable to blonds. There is 5.3 per cent. of red hair in all Scotland (boys 5.5, girls 5.1) and the proportion is larger among men in cities. The percentage of medium or brown hair is 42.1 (boys 43.3, girls 40.9) and urban conditions favor the survival of brown-haired men. The percentage of dark hair is 25.2 (boys 25, girls 25.4) and of black hair 1.2 (the same for both sexes). The proportion of pure blue eyes for all Scotland is 14.7 (boys 14.6, girls 14.8); of light eyes 30.3 (the same for both sexes); of medium eyes 32.3 (boys 32.7, girls 32); of dark eyes 22.5 (girls 22.8, boys 22.3). The distribution of blue eyes corresponds with that of fair hair, but not that of dark eyes with that of dark hair. Interesting are the high percentages of fair-haired girls in the Dun-

- ferline region (Saxon intermixture possibly) and of red-haired children in N. W. Scotland; of blue eyes in the lower Spey valley (Irish intermixture); of light eyes in Argyshire (Dalriadic Scots from Ireland), etc. Deviations from normal are considered.
- Gross (V.)** Les sépultures de l'époque de la Tène à Münsingen, Canton de Berne, Suisse. Étude anthropologique sommaire. (R. Éc. d'Anthr. de Paris, 1908, XVIII, 112-16, 1 fig.) The important La Tène necropolis of Münsingen was discovered in 1906; more than 200 tombs were explored and many skeletons, bronze and iron objects, some gold ornaments, etc. (also weapons, glass rings, amber beads, etc.) discovered. G. gives data (description, cephalic indices) of 36 skulls (male 19, female 13, children 7, 1 adult deformed). Of the male skulls 9 were dolichocephalic and 6 brachycephalic; of the female skulls 4 dolichocephalic and 6 brachycephalic. Two male skulls are trepanned (1 twice).
- Hauser (F.)** The heads of the "Scipio" type. (Amer. J. Archeol., Norwood, Mass., 1908, XII, 56-57.) Reports the discovery of the upper part of a life-size figure with head of the "Scipio" type and an X-scar cut deep into the left side of the forehead. This proves Dennison's theory that the so-called Scipio heads represent Roman priests of Isis.
- Hellwig (A.)** Hostiendiebstähle in der Schweiz. (Schw. f. Arch. f. Volksk., Basel, 1908, XII, 143-8.) Treats of thefts of the eucharist from superstitious motives (Nov. 1905 to March 1907, 7 cases of breaking into churches in Zürich); as H. believes. A bibliography of the folk-lore of the eucharist is given.
- Heuft (H.)** Volkslieder aus der Eifel. (Z. d. Ver. f. Volksk., Berlin, 1908, XVI, 184-8.) Texts of folk-songs from the Eifel region, and the first lines of 30 others; the collection made in 1876 contained 33.
- Hoffman-Kreyer (E.)** Bibliographie über die schweizerische Volkskundeliteratur des Jahres 1907. (Schw. Arch. f. Volksk., Basel, 1908, XII, 70-6.) Bibliography of Swiss folk-lore for 1907, arranged under 15 heads: Bibliographical, miscellaneous, prehistory, economy, house, etc., clothing, folk art and industry, food, customs (usages, festivals), folk-beliefs, folk-poetry, music and dance, folk-speech, names, language. In all 163 titles.
- Höfer (M.)** Zum Sagenschatze des Isarwinkels. (Z. d. Ver. f. Volksk., Berlin, 1908, XVII, 182-4.) Cites 14 brief legends, none of which is included in Sepp's *Altbayerischer Sagenschatz*, 1876.
- Kaindl (R. F.)** Beiträge zur Volkskunde des Ostkarpatengebietes. (Ibid., 92-8.) Last section of article on the folk-lore of the East Carpathian region. Treats of modern magic and witchcraft (luck in marriage, hidden treasures), animal folk-lore. At pages 96-8 are given the Polish (from a MS. of 1824) and German texts of medical, etc., folk-lore relating to the lion, eel, weasel, pelican, raven, mole, starling, etc.
- Kelsey (F. W.)** Codrus's Chiron and a painting from Herculaneum. (Amer. J. Archeol., Norwood, Mass., 1908, XII, 30-38, 1 fig.) Argues that the "Chiron" of Codrus in Juvenal's poem was "a diminutive copy of the group in the Saepta (Chiron and Achilles)," suitable for display on a shelf.
- Kessler (G.)** Sagen aus der Umgegend von Wil, Kt. St. Gallen. (Schw. Arch. f. Volksk., Basel, 1908, XII, 47-54.) Some 25 brief legends concerning buried treasures, demons and spirits, ghostly animals, monsters, etc.
- Kinnaman (J. O.)** Some puzzles of Roman archeology. (Amer. Antiq., Chicago, 1908, XXX, 2-9, 1 fig.) Treats of the Palatine and its buildings, the Forum, etc.
- The topography of the Palatine. (Ibid., 135-40.) Historical and archeological résumé of the Palatine and its chief buildings.
- Koch (F. J.)** Timora, the city of hanging gardens. (Nat. Geogr. Mag., Wash., 1907, XVIII, 632-40, 4 pl.) Describes street-scenes, shops, peasant costumes, etc., in the Bulgarian city.
- Lambelet (E.)** Les croyances populaires au Pays-d'Enhaut, Haute-Gruyère. (Schw. Arch. f. Volksk., Basel, 1908, XII, 91-124.) Treats of folk-lore and superstition in the Pays-d'Enhaut, Switzerland. Heathen-lore (belief in *cherwan* or guardian spirit; *nifon* a term applied to a cunning, sly person; 17 sayings of various sorts), Christian (beliefs about future life; "secrets" or exorcism—formulas for man and beast—pp. 97-114, more than 80 are cited; legend of the devil—24 names for Satan are given; superstitions—12 items cited), and magic (7 charms, etc., cited) are considered.

Lauffer (O.) *Neue Forschungen über die äusseren Denkmäler der deutschen Volkskunde; volkstümlichen Hausbau und Gerät, Tracht und Bauernkunst.* (Z. d. Ver. f. Volksk., Berlin, 1908, XVIII, 104-13, 196-203.) First two sections of an account of recent studies of the house-building, furniture, etc., dress and art of the German folk. *Résumés and critiques of Das Bauernhaus im Deutschen Reiche und in seinen Grenzgebieten* (Dresden, 1906), by Lutsch, Kossmann and Mühke, etc., with an introduction by Schäfer; *Das Bauernhaus in Österreich-Ungarn und in seinen Grenzgebieten* (Dresden, 1906), by Haberlandt, Dachler, etc.; *Das Bauernhaus in Ungarn* (Budapest, 1906); O. v. Leixner's *Der Holzbau in seiner Entwicklung und in seinen charakteristischen Typen* (Wien, 1907); Chr. Ranck's *Kulturgeschichte des deutschen Bauernhauses* (Leipzig, 1907); Meringer's *Das deutsche Haus und sein Hausrat* (Leipzig, 1906); B. Heil's *Die deutschen Städte und Bürger im Mittelalter* (Leipzig, 1906). These books contain much new and valuable information concerning all parts of the German folk-house.

Lechner (A.) *Gaunerlisten des 16. Jahrhunderts aus Neuveville.* (Schw. Arch. f. Volksk., Basel, 1908, XII, 135-42.) Gives specimens of the descriptive lists of "traveling folk," beggars, tinkers, etc., from Neuveville in the 16th century. These lists were extensively circulated.

Lemke (E.) *Ueber das italienische Kind.* (Z. d. Ver. f. Volksk., Berlin, 1908, XVIII, 126.) Abstract of address before Folk-lore Society. Brief notes on clothing, amulets, plays, festivals, etc. Many foundlings, 20,000 yearly.

Loewe (R.) *Rübezahl im heutigen Volksglauben.* (Ibid., 1-24, 151-156.) Treats of the distribution of folk-lore concerning *Rübezahl* in the region of the Riesengebirge—southeast (the chief localization of *Rübezahl* is at Riesenhein), northeast, northwest, southwest, etc. Many tales, etc., of *Rübezahl* are still current in this region where he has become a center of folk-tales. A *Frau Rübezahl* is also mentioned. The older name *Ribenzäl* is retained in the southeast only. L. heard also *Ribenzäl* in analogy with *Ribenzäler*.

MacCurdy (G. G.) Some phases of prehistoric archeology. (Proc. Amer.

Assoc. Adv. Sci., 1907, LVI, prepr., 1-25, 4 pl., 4 figs.) Discusses the eolithic period, eoliths and pseudo-eoliths; the art of the cave-dwellers (caverns of Les Combarelles, Font-de-Gaume, Bernifal, Teyjat, etc.). Of caverns with paleolithic mural decorations outside of France, one is in Italy and seven in Spain (the most important is Altamira). The engravings and paintings run through four phases. The large oil-painting by Jamin, exhibited in Paris in 1903 and at St Louis in 1904, represents the cave-artist of Font-de-Gaume at work with his family about him.

Müller (A.) *Aus dem Volkstum und Volksglauben des Kantons Basel-Land.* (Schw. Arch. f. Volksk., Basel, 1908, XII, 15-36, 149-55.) Gives dialect text of 606 items of folk-lore from the Basel country (1-43, "peasant rules" about reasons, crops, etc.; 44-101 weather rules, etc.; 1-150 proverbs of all sorts; 151-306 proverbial expressions, etc.; 307-413, idioms involving comparisons—man, things; 414-55, oracles, omens, portents, signs; 456-80, folk-medicine; 481-503 various; 504-05 street-cries.)

Noyes (P. H.) *A visit to lonely Iceland.* (Nat. Geogr. Mag., Wash., 1906, xv, 731-41, 3 pl. 5 fig.) Some of the illustrations are of ethnological interest.

Olcott (G.) Unpublished Latin inscriptions. (Amer. J. Archeol., Norwood, Mass., 1908, XII, 37-46, 1 fig.) Reproduces 13 inscriptions, chiefly on slabs found in 1906 in the excavations outside the Aurelian walls. One inscription on an amphora is unique of its kind. The amphora was used as an urn for ashes of the dead. This inscription is of philologic interest.

Pellandini (V.) *Canti popolari ticinesi.* (Schw. Arch. f. Volksk., Basel, 1908, XII, 36-46.) Dialect texts and translations into literary Italian (where necessary) of 11 folk-songs from Ticino. One of them is the farewell of an emigrant starting for America (p. 39).

Polivka (G.) *Neuere Arbeiten zur slavischen Volkskunde. Südslavisch.* (Z. d. Ver. f. Volksk., Berlin, 1908, XVIII, 214-19.) *Résumés and critiques of recent literature on South Slav folk-lore, publications of Mrs. Belović-Bernadzikowska (on Serbian folk-embroidery and textile ornamentation), Hangi (on Mohammedan folk-life in Bosnia and Herzegovina), Gavrilovic (on Serbian folk-song), Tomić*

on (Servian folk-epics), articles in journals, etc.

Proposed national anthropometric survey.

(J. R. Anthropol. Inst., Lond., 1907, xxxvii, 424-32.) Report of interview of deputation from various scientific societies interested with Premier Bannerman, Mar. 5, 1907. Remarks by Messrs Lehmann, Cunningham, Gray, Gow, Sir Lauder Brunton, et al.

Regalia (E.) Sulla fauna della "Grotta del Castello" di Termini Imerese, Palermo. (A. p. l'Antrop., Firenze, 1907, xxxvii, 337-73, 1 pl.) Lists and describes bones, etc., of fish, reptiles, birds and mammals (including pig, *Bos primigenius*, *Cervus Elaphus*, horse, — *Equus (Asinus) hydruntinus* var. *siculus*). Both fauna and human remains belong to the quaternary. The presence of an elephant indicates either that the industry represented is older than generally thought, or the elephant more recent.

— Sull' *Equus (Asinus) hydruntinus* Regalia della Grotta di Romanelli, Castro, Lecce. (Ibid., 375-90.) From study of lower and upper molars R. concludes that the *Equus* of the Romanelli cave is a distinct species *Equus (Asinus) hydruntinus*. The horse probably reached Italy from eastern Europe or Asia by way of land now submerged in the Adriatic.

Reymond (M.) La sorcellerie au pays de Vaud au XV^e siècle. (Schw. Arch. f. Volksk., Basel, 1908, xii, 1-14.) Cites from records of the Inquisition at Lansanne in the 15th century data concerning sorcery and agreements with the devil in the Vaud country. Those under the power of Satan were called *voudeys* and their sabbat was known as the *chite*. Some of the accused told what went on at these meetings, which were attended also by the demons themselves. The *voudeys* "hated everything relating to religion." The impenitent and obstinate *voudeys* were handed over to the secular authorities. Child murder and poisoning of people undoubtedly occurred, but the rest of the phenomena are as elsewhere.

Robinson (D. M.) Fragment of a Panathenaic amphora with the name of the archon Neachmus. (Amer. J. Archeol., Norwood, Mass., 1908, xii, 47-48.) This fragment with Neachmus's name makes altogether 18 amphorae or fragments of such vases, with 13 archons' names; these and their dates are given. Neachmus, 320-319 B. C.

Rutot (A.) Sur l'âge des squelettes de mineurs néolithiques d'Obourg et de Strépy. (Bull. Ac. R. d. Belgique, Cl. d. Sci., 1907, 989-1003, 26 figs.) Argues that the flint-workings of Obourg (almost all the implements are of the local black flint) belong to the Campignian epoch, to which are to be referred also the two skeletons discovered at Obourg and Strépy (at the latter place no flint-finishing was done). The animal bones found are those of wild species.

— I. La poterie pendant l'époque troglodytique. II. A propos des pseudo-éolithes de Cromer. (Bull. Soc. Préhist. de France, 1907, extr., 1-16, 7 figs.) Cites from 12 caverns (Hastières, Goyet, Magrite, d'Engis, Trois des Nutons, du Frontal, de Praule, de Chaleux, du Sureau, du Chêne, etc.), explored by M. Ed. Dupont, evidences of the existence of pottery during the troglodyte (paleolithic) age, with references to several others, including the "Caillonqui bique" near Roisin, the last belonging to the lower Aurignacian. In France also, R. thinks paleolithic-troglodyte pottery ought to be found. The second article replies to M. Boule's discussion of the "pseudo-eoliths" of Cromer. According to R. "pseudo-eoliths" differ from real eoliths in being "essentially ephemeral," the latter being practically "indestructible."

Schlager (G.) Nachlese zu den Sammlungen deutscher Kinderlieder. (Z. d. Ver. f. Volksk., Berlin, 1908, xviii, 24-53.) Text and music of nos. 201-83 of a collection of songs of German children, with explanatory and comparative notes.

Sifre (A.) Étude des dents humaines du Petit-Puymoyen. (R. Éc. d'Anthr. de Paris, 1908, xviii, 66-72, 5 figs.) Describes remains of human jaws and teeth from the paleolithic "station" of Petit-Puymoyen. The jaw in the block of breccia represents a rare type, in respect to teeth (quinquecuspidation of second molar, etc.). M. Capitan thinks that the finding of these human remains in the midst of animal bones, suggests cannibalism. See Favraud (A.).

Sittoni (G.) Le Cinque terre. II. Campiglia, Golfo di Spezia. (A. p. l'Antrop., Firenze, 1907, xxxvii, 429-38.) Treats of Campiglia on the Gulf of Spezia: country, people (as to type, Campiglia is an appendix of Biassa), occupations, etc.

Stefansson (J.) The land of fire. (Nat.

Geogr. Mag., Wash., 1907, XVIII, 741-44.) Abstracted from S.'s *Iceland: its History and Inhabitants*, in *Rep. Smithsonian Inst.*, 1907. Contains a few notes on the people, etc.

Studnicka (F.) Lost fragments of a group representing Artemis and Iphigenia. (*Amer. J. Arch.*, Norwood, Mass., 1908, XII, 58-60. 1 fig.) Points out that some lost fragments of the Artemis-Iphigenia group in Copenhagen have been discovered in the possession of dealers in Florence and Rome (right foot of Artemis, etc.). The heads of Artemis and Iphigenia have never been found.

Zaborowski (S.) L'introduction du cuivre sur la côte orientale de l'Espagne et en Sicile. (*R. Éc. d'Anthr. de Paris*, 1908, XVIII, 1-19, 5 figs.) Treats of the introducers of copper on the E. coast of Spain and in Sicily—the relations of Spain with the Asiatic littoral go back to the third millennium B. C. Discusses the brachycephalic crania of the tombs of Orihuela in Alicante, investigated by Siret in 1907; the Greek and Phœnician remains from the necropolis of Villaricos in Almería; the *vache de Balanote*, or human-headed bull from Albacete; the female bust from ancient Ilici in Alicante, known as "the lady of Eiche"; the female statue, heads, etc., from the Cerro de los Santos. Also the finds in the eneolithic tombs of Castelluccio, Sicily, and the skulls from there and from Isnello, Chinsilla, Villafraia, etc. Z. believes that this immigrant brachycephalic people of the close of the neolithic period in Spain and Sicily antedates the migration of bronze-using brachycephals from central Europe. They "came directly from the littoral of Asia (Syria) and had customs and beliefs of Mesopotamian origin."

Zindel-Kreissig (A.) Schwänke und Schildbürgergeschichten aus den Sarganserland. (*Schw. Arch. f. Volksk.*, Basel, 1908, XII, 54-56.) Some 10 items of folk-jest at the expense of the "silly" people of Weistann and Sargans. One who had been many years in America is represented as remarking that "everything has changed, only the school-children were still about as tall."

AFRICA

American discoveries in Egypt. (*Nat. Geogr. Mag.*, Wash., 1907, XVIII, 801-07, 5 pl., 1 fig.) Illustrations (gold

necklace, heads of Queen Tiye, golden vulture ornament, mummified monkeys and dog) of ethnologic interest representing objects found by Mr T. M. Davis in the tomb of Queen Tiye, discovered by him in Jan. 1907, and in the tomb of Amenhotep II, her husband.

Bel (A.) La population musulmane de Tlemcen. (*R. d. Ét. Ethnogr. et Sociol.*, Paris, 1908, II, 200-25, 3 pl.) Treats of the Mahometan population of Tlemcen (the Pomaria of the Romans) in Algeria, once the capital of a Mussulman kingdom. Ethnic groups (Hadar, Arabized Berbers; Kulnglis, result of cross between Turks and native women; Negroes from Turak and the Soudan), religious life (orthodox Islam); beliefs and superstitions foreign to Islam,—"maraboutism," worship of saints, "magic," etc.; public ceremonies, festivals, etc.,—Achurâ, Mulêd, Aid-ec-cr-ir, Aid-el-kebir, the festival of Sheikh Snoussi, El-Latif, La Ançra, La Derdeba, etc.), private festivals and ceremonies (birth and early childhood, pregnancy, childbirth, name, circumcision, marriage, death and burial), *djinnis*, etc., are considered.

Boreux (C.) Les poteries décorées de l'Égypte pré-dynastique. (*Ibid.*, 33-52, 6 figs.) Discusses the designs on pre-dynastic Egyptian pottery (Negadeh, etc.)—few purely linear motifs and many designs taken directly from nature (gazelle common, crocodile rare; water, mountains; but especially trees and boats). The art of these decorations resembles that of the "graffiti," rock paintings and carvings, etc., and the basis of all is "magic." On the vases we see the art of the rocks in a little ampler form and evidencing more distinctly a decorative intent. The flora depicted suggest the land of Punt. B. concludes that "the art of Negadeh was the art of the Horians, who, at a primitive period, had extended their domination over all southern Egypt."

Delafosse (M.) Le peuple Siéna ou Sénoufo. (*Ibid.*, 16-32, 79-92, 151-59, 242-75, 6 pl.) Detailed ethnographic and sociological account of the Siéna or Senoufo, a Negro people of the Soudan between Diénne on the N. and Bondoukou on the S., on the Bagbé river, etc. Name (*Séné* or *Siéna* is the radical of their real name), habitat, history, tribes and sub-tribes (N., Central, S., N.E., and S.E., divisions, each with subdivisions), phys-

ical characters (tall, women often ugly and ill-shapen), hair and hair-dressing, mutilations (teeth not generally deformed; ears and nose sometimes pierced; cicatrizing and scarification common with sexual and tubal varieties; circumcision and excision), diseases, clothing and ornament, cleanliness (people and villages generally dirty), houses (5 chief types) and granaries, villages, furniture (bed not common, seats rare), household and kitchen utensils (pottery, wooden dishes, calabashes, basketry, fowl-cages; no artificial light except fire), other tools and utensils (agricultural implements, tools for building, etc., tobacco-paraphernalia), weapons and hunting and fishing implements (European guns, bow, clubs and swords of wood, nets, traps, etc.), agricultural (chief occupation of the Siena; rice, millet, maize, yams, manioc, sorghum, arachids, calabashes, cotton, tobacco, etc.), cattle-breeding and domestic animals (cattle, horses, sheep, goats, dogs, cats, fowls, pigeons, bees), food and drink (basis of food farinaceous, meat a luxury; sauces; ordinary drink water), stimulants and perfumes (millet and maize beer, palm-wine; European alcoholics almost unknown; cola, tobacco generally snuffed; not many perfumes), roads and means of transportation, commerce and currency (trade chiefly local and limited to sale of agricultural products; markets; cowry-money, — also gold-dust in certain regions), industries, (making cotton cloth, soap, oils, weaving, powder, sandals, dyeing, basketry, iron-working most important and wide-spread, wood, leather and clay working, etc.), hunting and fishing, music (little developed) and dancing (no professionals), sculpture and painting (crude and infantile), poetry and literature, etiquette and politeness, hygiene and medicine (therapeutics rather high) are discussed.

Fairchild (D.) Madeira, on the way to Italy. (Nat. Geogr. Mag., Wash., 1907, xix, 757-71, 13 pl. 6 figs.) Some notes on natives. Illustrations (street scenes, native types, etc.) of ethnologic interest.

Ferrand (G.) Note sur le calendrier malgache et le Fandruana. (R. d. Ét. Ethnogr. et Sociol., Paris, 1908, 1, 93-105, 160-64, 226-41.) Treats in detail of the two systems of month names (one of Arab, the other of Hindu origin), days, etc., in use among the Malagasy of Madagascar, their relation to the Gregorian calendar, etc. At pages 226-241,

the *Fandruana* or great annual bathing festival and the method of its fixation are discussed in connection with the calendar of the Merina. The Malagasy year commenced with a sort of national lustration according to Ellis' account, cited by E., but this is only one part of the ceremony. It was suppressed by the French authorities after the conquest of the island. See also p. 277.

Gay (G. A.) Recent excavations in Egypt. (Amer. Antiq., Chicago, 1908, xxx, 73-77.) Résumés report of Dr Grenfell on work for the Egyptian Exploration Fund for the year 1906-07.

van Gennep (A.) Une nouvelle écriture nègre; sa portée théorique. (R. d. Ét. Ethnogr. et Sociol., Paris, 1908, 1, 129-39, 2 pl.) Treats with lists of signs and the Pater Noster, a new Negro system with 350 signs of writing, the "invention" of Njoya, the young king of Bamum in the German Cameroon country, with the aid of soldiers who were ordered to furnish signs for each monosyllable, — these the king compared, simplified and complicated at his will, like the Cherokee Sequoyah. Njoya had seen Haussas and Europeans write. The origin of this writing can be decided only after careful investigation of the ornamental art of the people. Some resemblances to the Vei writing may be detected.

Giuffrida-Ruggeri (V.) I crani Egiziani del Museo Civico di Milano. (A. p. l'Antrop., Firenze, 1907, xxxvii, 390-410, 2 pl.) Gives details of form, measurements, etc., of 82 male and 60 female Egyptian skulls (of all periods) of Mediterranean type, compared with Sicilian and Ligurian skulls of this type. The Egyptian face is longer than the Sicilian and Ligurian; more leptorrhine than the Sicilian, but less than the Ligurian. As to cephalic index the Egyptian are closer to the Sicilian. The proportion of pentagonoid and rhomboid female skulls is high; also that of beloid (11 per cent.) male skulls rare. The capacity of the male skulls is high, that of the female (88.4 per cent. of male) low (one of the lowest known). According to G.-R. the negroid type is much less frequent than thought by Thomson and Randall-MacIver, — negroid facial profiles in but 6 skulls out of 159. Skulls of the so-called Eurasian type are not very rare. Two caboid skulls (out of 159) may belong to an extinct race related to the Bushmen. The reduction of short skulls to the fou

- forms only,—sphenoid, spheroid, cuboid, and platycephalic is artificial, since other forms really exist.
- Häufiger** (J.) *Fabeln der Matengo*, Deutsch-Ostafrika. (Anthropos, Wien, 1908, III, 244-47.) Native texts and interlinear German translations of two animal-tales (Hare and hyena, Ichneumon and ape) of the Matengo, German East Africa.
- Hunting** big game in Portuguese East Africa. (Nat. Geogr. Mag., Wash., 1907, XVIII: 723-30, 609.) Based on R. C. F. Mangham's *Portuguese East Africa. The History, Scenery, and Great Game of Manica and Sofala* (Lond., 1907, 340 pp.). Some of the illustrations (native village, woman pounding maize, native drums, traveling) are of ethnologic interest.
- In** German East Africa. (Ibid., 646-49, 4 pl.) Illustrations (native types) of ethnologic interest.
- Loupas** (P.) *Tradition et légende des Batutsi sur la création du monde et leur établissement au Ruanda*. (Anthropos, Wien, 1908, III, 1-13, 4 pl.) French text of the Batutsi account of the creation of the world and their establishment in Ruanda: Creation of earth, fall of man and punishment, arrival of Kigwa and his sister on earth, who becomes the first chief, messenger from heaven, marriage of Kigwa, etc., Mutabazi (a sort of redeemer).
- Müller** (F.) *Die religionen Togos in Einzeldarstellungen. III. Miscellanea über die Verehrung eines höchsten Wesens bei einigen Stämmen Togos*. (Ibid., 272-79.) Gives native text and German interlinear translation of a myth concerning Uwoluwu, the supreme being of the Akposo; German texts of 3 myths about Norokoe, the supreme being of the Kebe; a myth of Nankupon, the supreme being of the Fanti of the Gold Coast; 7 myths (of one, native text also) concerning Mawu, the supreme being of the Fo.
- da Officio** (F.) *Proverbi abissini in lingua Tigray*. (Ibid., 207-12, 1 pl.) Nos. 51-150 of Tigre proverbs, native texts and Italian translations.
- Offord** (J.) *An ancient chariot and other objects from an Egyptian tomb*. (Amer. Antiq., Chicago, 1908, XXX, 161-66.) Based on Maspero and Newberry's *The Tomb of Iouiya and Tuiyou* (London, 1907), treating of the tomb of the parents of Queen Tiyi.
- Parkinson** (J.) *A note on the Efik and Ekoi tribes of the eastern province of southern Nigeria, W.C.A.* (J. R. Anthropol. Inst. Lond., 1907, XXXVII, 261-67, 2 pl., 1 fig.) Brief account of villages, "medicine" offerings (*owa*), *egbo*—houses and paraphernalia, *egbo* secret society of 9 grades, *idiong* society, "medicine houses," shrines, etc.
- Powell-Cotton** (P. H. G.) *A journey through the eastern portion of the Congo State*. (Nat. Geogr. Mag., Wash., 1908, XIX, 155-61, 5 figs.) Contains a few notes on pigmies and other natives. Reprinted from the *Geographical Journal* (London).
- Sanders** (H. A.) *New manuscripts of the Bible from Egypt*. (Amer. J. Archeol., Norwood, Mass., 1908, XII, 49-55, 3 pl., 2 figs.) Account of 4 MSS. of parts of the Bible, bought in Cairo in 1907, and said to have come from Akhmin, the ancient Panopolis: A parchment MS. of Deuteronomy and Joshua in a large, upright uncial hand of the 4th century; a much decayed parchment MS. of the Psalms, belonging to the end of the 6th or the beginning of the 7th century; a parchment MS. of the four Gospels of the 5th or 6th century, interesting by reason of a notable addition after Mark XVI, 14; a blackened decayed fragment of a parchment MS. of the Epistles of Paul in writing of the 5th century. These MSS. probably were part of a Bible in use in Egypt till 639 A.D.
- Scenes** from North Africa. (Nat. Geogr. Mag., Wash., 1907, XVIII, 615-19, 4 pl.) Illustrations (Moorish girls of Tangier, Jewish girls of Tunis) of ethnologic interest.
- Stam** (N.) *The religious conceptions of some tribes of Baganda, British Equatorial Africa*. (Anthropos, Wien, 1908, III, 213-18, 2 pl., map.) Treats of the Baganda (religious ideas and legends), Basoga (witchcraft), Buvuma (drumming "spirit" out of village). Legend of Kintu, first Baganda man, resembles story in Genesis. Baganda "worshipped a host of spirits, but the notion of one God was clearly there." Lightning feared.
- Struck** (B.) *Eine Geschichte der Wanyarunda*. (Z. d. Ver. f. Volksw., Berlin, 1908, XVIII, 188-91.) German text of "The story of Kagembegembe" (a tale of a boy and his grandmother) from the Wanyarunda, whose language is a dialect of the Urundi of Uganda.

Trapp (O. O.) Die Isikula-Sprache in Natal, Südafrika. (Anthropos, 1908, III, 508-11.) Gives 60 sentences (with German translations) in the so-called "Kitchen-Kafir," or *Irikula* (Coolie speech) as the Zulu term it, a jargon, or mixed language of Zulu and English, used chiefly in Natal by Hindus and English — no Hindu element is yet apparent. The basis is simplified Zulu plus culture-words, etc., from English. Grammar is also reduced; of the 14 pronouns of the third person known to Zulu, *Isikula* retains only *yena* (he), *bona* (she). The amount of "reduction" can be seen from the *Isikula yini-daba* (what thing?) = "why?" which represents a real Zulu *Ku-ya-nga-ni, ukuba?* "It is on-account-of what that?" This young language is flourishing and may one day be the dominant speech in Natal.

Werner (A.) Some notes on the Bushman race. (R. d. Et. Ethnogr. et Sociol., Paris, 1908, I, 145-50, 2 pl.) Notes from author's own observations, those of Dr. Passarge, etc. Angoni of western Nyassa have probably a large proportion of Bushman blood and many Bushman culture-elements (they work on plantations at Blantyre, cultivate the soil, keep goats, a few sheep, fowls, pigeons, paria dogs; both Bushmen and Angoni wear hide bangles, plaited grass rings; Angoni now know only glass beads; string bags; the Angoni *mutangala* resembles the Bushman *gora*; the *sinyan* dance of the Anyanja resembles the *nadro* of the Bushmen). The total number of Bushmen existing now Miss W. estimates at "somewhere between 5,000 and 10,000 souls."

Wester (A. M. T. E.) En etnografisk samlarsföreläsning i Marocko. (Ymer, Stockholm, 1908, XXVIII, 34-59.) Account of an ethnographic trip to Morocco in 1906. Notes on Tangier, Fez, etc., with special reference to arts and industries. Material relating to 37 different trades and occupations (from shoemaker to bookbinder) was obtained.

Witte (A.) Der "Königseid" in Kpandu und bei einigen benachbarten Ewe-Stämmen. (Anthropos, Wien, 1908, III, 426-30, 1 fig.) Treats of the "King's-oath" in Kpandu, etc. The Kpandu formulae run, "by Dagadu's (the King) Sunday," "by Dagadu's day of honor (sorrow, etc.)." In Winta, "by the snuff-box"; in Anufœ "by Asa-

mani's basket"; among the Soirepe "by the head of Nyaku"; among the Kunya "by the chief's foot."

ASIA

Bainbridge (O.) The Chinese Jews, (Nat. Geogr. Mag., Wash., 1907, XIX, 621-32, 6 pl.) Account of the memorial stone in the city of Kaifengfu referring to "the foreign heaven chapel," and the ruins of the former Jewish synagogue. Also the story of his people by an intelligent Chinese Jew, who showed him the ark. In a Confucian temple are some broken pillars of the synagogue. The condition of these Jews is miserable.

Cadière (L.) Philosophie populaire annamite. (Anthropos, Wien, 1908, III, 248-71.) Gives details of Annamite folk-philosophy concerning the universe, stars (no generic word; Chinese influence in belief as to "old man in moon"; Annamese believe Côi, the personification of lies, dwells there), cardinal points, surface of ground, origin of world, animate beings (man and animals), etc. At pp. 261-65 are given numerous proverbs concerning animals (buffalo, ox, dog, cat, horse, pig, elephant, tiger, deer, ape, rat, bear), pages 265-68 proverbs relating to birds (fowl, duck, goose, pigeon, snipe, wren, phenix, thrush, heron, peacock, crow), pp. 268-70 proverbs relating to reptiles, insects, fish.

Calus (T.) Au Pays des Castes. Les Brahmanes. (Ibid., 239-43, 3 pl.) Gives lists of Brahman castes (Kudagus, Tulus, Malabarese, Telingas, Tamils, Mahrattas, Canaras, — the last have 160 divisions) south of the Krishna river. Also anthropometric data from Thurston and Fawcett for the Dravidian Brahmins, and from Risley for those of North India.

Chalatiens (B.) Die iranische Helden-sage bei den Armeniern Nachtrag. (Z. d. Ver. f. Volksk., Berlin, 1908, XVIII, 61-66.) Gives four tales of Rustem and one of Siavush.

Crasselt (F.) Die Stellung der Ehefrau in Japan. (Anthropos, Wien, 1908, III, 533-55.) Résumés, with numerous references to the literature of the subject, data concerning the position of the married woman in Japan, past and present. Even to-day, according to Dr C., the proverbial expression "*stoko tattoshi, onna iyashi*," "the man is high, the woman low," has much truth both in law and in practical life, for in Japan

the position of woman must still be accounted "servile."

- Dahmen** (F.) The Paliyans, a hill-tribe of the Palni Hills, South India. (Ibid., 19-31, 1 pl., 1 fig., map.) Discusses origin, language ("an unintelligible Tamil jargon"), physical characters (short, poor in build, —stunted growth chiefly due to hunger), remedies for disease (medicinal roots and herbs), food (flesh-food except beef; roots and herbs), hunting methods (pitfalls, traps, poisoning fish with creeper-leaves), trade (making bird-cages, mats, baskets), dwellings, clothing and ornaments (on forehead, breast and arms painted designs in white), dancing, puberty-ceremonies for girls, marriage (no festivities, on bride-price), family (position of woman low), birth (no special ceremonies), social organization, religion (March ceremony in honor of god Mayāndi; propitiation of the god Subrahmanyan, the son of Siva, at his shrine in Palni), superstitions (sorcery, etc.), ethics, mental gifts (about those of average low-caste Dravidians; women brighter in learning than men), death (influence of Hinduism).

- Dinsmoor** (W. B.) The mausoleum at Halicarnassus. (Amer. J. Archeol., Norwood, Mass., 1908, XII, 141-71, 1 pl., 7 figs.) Part I, treating of the architectural order, Ionic somewhat varied.

- Gaudefroy-Demonbynes** (M.) Rites, métiers, noms d'agent et noms de métier en arabe. (R. d. Ét. Ethnogr. et Sociol., Paris, 1908, 1, 140-44.) Cites data as to parallel evolution of social institutions and language, — terms for "washer of the dead," "mourners." Names of performers of actions and terms used when action becomes a trade. See also p. 278.

- Geologists** in China. (Nat. Geogr. Mag., Wash., 1907, XVIII, 640-44, 4 pl., 1 fig.) Illustrations (native soldiers, interior of temple to K'wang-sheng-to, device to ward off evil dragon) of ethnologic interest.

- Ghosu el Howie** (Mfr) Survival of old Semitic customs. (Amer. Antiq., Chicago, 1908, xxx, 31-32.) Notes on "girdling the church" with thread during an epidemic of whooping-cough at Sheveir, Mt Lebanon, Syria. Afterwards the skeins "are taken down and sold by the priests for the benefit of Our Lady or St Thekla, as the case may be, and the people use them for knitting stockings, or wicks for their lamps, or keep them as charms."

- Giraldos** (P.) Enfermedades y medicamentos de los indígenas de Tong-King. (Anthropos, Wien, 1908, III, 41-52.) First part. Treats of diseases and remedies of the natives of Tong-King, — headache, vertigo, ear-ache, running in ears, eye-ache, worms in the eyes, nose-bleed, excessive flow of saliva (in children), worms, disease of teeth, disease of skin, black tongue, etc., pain in the neck, tumors in throat, pain in gums, gum-boils, *angina*, bone in the throat, etc. Texts in the native language, technical terms, etc., are given.

- Gordaliza** (F. T.) Estudio sobre el dialecto Thô de la región de Lang-sôn. (Ibid., 513-32.) Sketch of phonetics and outline of grammar (noun, prosubstantives, adjective, numerals, pronoun, verb, adverb, preposition, conjunction) of the Thô, a Thai dialect, hitherto little known. The literature includes Silve's *Grammaire Thô* (1907) and Diquet's *Étude de la langue Tai* (1899), which treats of another Thô dialect than that of Lang-sôn.

- Hertel** (J.) Der kluge Vezier, ein kaschmirischer Volksroman. (Z. d. Ver. f. Volksk., Berlin, 1908, XVIII, 66-76, 160-77.) Part of German translation of "The wise vizir," an interesting Kashmir folk-tale of a composite character, on the basis of a MS. of the Brahman pundit Sahajabhatta of Srinagar. The original of the story seems to be the first tale of the Vetālapañcavimsatikā.

- Knocker** (F. W.) The aborigines of Sungei Ujong. (J. R. Anthropol. Inst., Lond., 1907, XXXVII, 290-305, 2 pl., 1 fig.) Treats of physical characteristics (two races, Blandas and Bésisi) of the *Orang Bukit* of Sungei Ujong in the Federated Malay States, stature (short but well and proportionately built), mental qualities (bright intellectually, moral), government, dress, houses, food, blow-pipe, darts and quiver, musical instruments (flutes, *geranting*, Jews' harp), agriculture, tin-mining, etc. At pp. 297-302 is given a vocabulary of the Bésisi dialect and at pp. 302-03 a few Blanda words and the Blandas terms for the different parts of the blow-pipe and quiver. Pp. 304-05 and an insert table are occupied with anthropometric data and descriptions of 20 individuals (all males but 3). The average height of adult males was 1.562, women 1.436.

- Knosp** (G.) Le théâtre en Indochine. (Anthropos, 1908, III, 280-93, 16 figs.)

General account of the Annamite stage and acting in Indo-China, — actors (long a low career) and their training, the stage and its accessories, costumes (ancient Chinese), *repertoire*, audiences (lower classes). There are *Phuong-nha-tro* (actors licensed by Government) and *Phuong-chlo*, popular actors of a ruder sort. The Cambodian theater (pp. 289-93) is of a higher order.

Konow (S.) Notes on the Munda family of speech in India. (*Ibid.*, 68-82.) Discusses origin and relations (distinct from Dravidian in language, if not in physical type), name *Munda* (used by section of race only, other tribes using *Manjhi*), groups and dialects (14, of which 9, including about $\frac{1}{11}$ of the Mundas, "are slightly different forms of one and the same language;" Aryan and Dravidian influence on grammar and vocabulary), affinities (great differences between some Munda tongues; area once much more extensive, relationship with Mon-Khmer peoples), phonology, formation of words (prefixes and infixes more important than suffixes), subdivision of words (parts of speech; "almost every word can be used as a verb, and a verbal form can, in its turn, be considered as a noun, an adjective or a verb, according to circumstances"; some dialects have almost adopted Aryan principles of inflexion; numerous personal pronouns). The Munda languages are spoken by 3,164,036 people in the hill and jungle country of Chota Nagpur, the adjoining districts of the Madras Presidency and in the Mahadeo Hills of the Central Provinces. Santali, the principal dialect, counts 1,795,113 speakers.

Langdon (St.) Sumerians and Semites in Babylonia. (*Babyloniaca*, Paris, 1908, II, 137-161, 1 pl., 2 figs.) Partly critique of E. Meyer's *Sumerier und Semiten in Babylonien* (Berlin, 1906). L. maintains that "the more we are coming to know about the history of Babylonian religion, the more it becomes clear how much that is essential was borrowed from the Sumerians," — most of the important cult-words, e. g., are Sumerian. So also the *aga* head-dress, the *di-me* stars of Istar, etc. The cult of Enlil, with its psalms (a translation of one is given) exercised important literary and religious influences upon the Semites. Certain priestly or kingly symbols are also Sumerian in origin, the horned turban, winding dresa, etc.

Mochi (A.) Sulla antropologia degli Arabi. (*A. p. l'Antrop.*, Firenze, 1907, XXXVII, 411-28, 3 pl.) Discusses the craniology of the Arabs in general, gives details of form and measurements of 6 Arab skulls from Tripoli and Cairo, and anthropometric data (stature, color of hair and eyes, measurements of lips, head, face, nose) of 29 Arabs from Hedjaz and Yemen. The cephalic indices of the Asiatic Arabs range from 71.3 to 88.4, but 19 are higher than 79. Of the 6 African skulls the average is 73.5. The true Arabs seem more brachycephalic than the African Arabs. The Berber element is strongly represented in the latter. In the Arabian peninsula there are a brachycephalic and a dolichocephalic type. The Semitization of N. Africa is more an ethnographic than an anthropologic phenomenon.

Mueller (H.) Some remarks on the article: "Un ancien document inédit sur les Todas by P. L. Besse, S. J. (*Anthropos*, Wien, 1908, III, 294-96.) Points out that the "early document" published by Father Besse had appeared in 1906 in Rivers's *The Todas* and that better copies of the MSS. are to be found in the British Museum. According to M. *pallam* is the same as *pālāl* or *palol*, related to the Dravidian word for "milk." So this name of the Toda priest and *pallor* have nothing to do with each other.

van Oost (P.) Recueil de chansons mongoles. (*Ibid.*, 219-33.) Native texts, music, and French translations of 11 Mongol songs (Nature, Wild Goose, Distant Greeting to Family, My Horse, Festival Song, Wonders of My Country, Buddhist Meditation, Hymn to Buddhist Triad, My Brown Horse, Spring, The Narrow River).

Peet (S. D.) The cosmogony of the Bible compared with that of the ancient pagans. (*Amer. Antiq.*, Chicago, 1908, XXX, 145-60, 8 figs.) Treats of Semitic, Greek, Egyptian, Hindu, Chinese, Teutonic, ancient American cosmogonic lore, asterisms, etc.

Pionnier (M.) Notes sur la chronologie et l'astrologie au Siam et au Laos. (*Anthropos*, Wien, 1908, III, 489-507, 22 figs.) Treats of eras, cycles, and years (3 eras with major cycle of 5 minor cycles — each of 12 years); how to tell the age of a Siamese or Laotian; lucky and unlucky marriages (auguries from animal name of birth-year and from metal

element); forecasting lucky or unlucky years.

Proctor (H.) The tree of life. (Amer. Antiq., Chicago, 1908, xxx, 25-27.) (Discusses the Biblical evidence that the eating of the "tree of knowledge" meant carnal intercourse and continuance under the law of generation, while eating of the "tree of life" signified escape from the seduction of the serpent and coming under the law of regeneration.)

Robinson (G. L.) The vaulted chambers of Petra's high places. (Ibid., 57-72, 3 figs.) Argues, from Biblical evidence, etc., that, "at Petra, these 'roofed-in chambers' were probably intended and actually used for feasting and prostitution, as well as a depository for idols."

Rose (H. A.) Hindu birth observances in the Punjab. (J. R. Anthropol. Inst., Lond., 1907, xxxvii, 220-36.) Treats of observances before and at birth (premature birth, unlucky times for birth and remedies for counteracting the evil influences of the planets, — e. g., symbolic birth from a cow, the first-born, places of confinement, *satyā*-worship, after-birth, death in child-bed), observances subsequent to birth (period of impurity and taboos, — forty days and rites for each, the *javaldan*, well-worship, suckling, fosterage, first-clothing or *chold*, naming customs, proper names, tonsure, etc.).

— Muhammadan birth observances in the Punjab. (Ibid., 237-60.) Treats of birth-ceremonies, songs sung to woman, food, tonsure, procedure during the six days after birth; treatment of mother (showing the stars, etc., offerings, fosterage, girl-playmate, verses for humming and singing, women's vigil, birthday, weaning, circumcision, "ride on a mare," piercing of nose and ears); vows, etc.

de St Elie (A. M.) La femme du désert autrefois et aujourd'hui. (Anthropos, Wien, 1908, iii, 53-67, 181-92, 5 pl.) Treats of the condition and status of the Bedouin woman before and since the advent of Mohammedanism. Esteem for woman (names for woman, ancient queens, reverence for the Virgin Mary, priestesses and wise women, *hakimat*, burial alive of female children), tradition attributing to women the origin of all evils, customs at the birth of a daughter, first education of girls, education of young women, marriage and wedding customs and ceremonies, divorce

(sterility a chief reason), capture of women (still common), woman as wife, rights and duties as mother, old age and widowhood. Father de St Elie objects to the statement of Le Bon that "Islamism has elevated the condition of woman," holding that "wherever it has penetrated Mohammedanism has lowered the condition of woman, making her an utterly inferior creature, the servant of man and his passions." The women of the completely pagan, Christian, or Hebrew tribes were loved, honored, respected and well-treated. The Bedouin woman lost much with the coming of Islam.

— Les Racusiens. Réponse au R. P. L. Cheikh, S. J. (Ibid., 556-58.) Replies to Father Cheikh's arguments against identifying the Racusiens and Monothelites, which identity Father de St Elie still maintains.

Schotter (A.) Notes ethnographiques sur les tribus du Kouy-tcheou, Chine. (Ibid., 397-425, 2 pl.) Treats of name and character of country, races (Chinese; Y-jen of Thai stock, Miao or "barbarians") and the Miao (pp. 404-25): Name *Miao* (usually translated "sons of the soil," but S. suggests identity with *Yeu* used by the Y-jen to designate them); priority of the Miao (of the three names often borne by localities, — Chinese, Y-jen and Miao, the last is the one that best suits the place); origin of Miao (their national traditions are preserved in rhythmic songs); fabulous ancestor, *Pan-hu*; political situation (no longer any *Seu miao*, or unconquered Miao, all being subject to Chinese authority); revolts; usages, customs, etc. (marriage, funerals); dress; character (less cunning than Chinese, less open to missionary influence and ideas than other races; they have "the morality of the heathen"); language (various tribes speak dialects of one language; according to S. the Miao "have no system of writing"); superstitions (demon-cult); religious traditions (creation of the world and of man, — the creator was a potter and the skull is only a vessel turned upside-down; deluge-legends; origin of diversity of languages; story of King Bamboo).

Scidmore (E. R.) Koyasan, the Japanese Valhalla. (Nat. Geogr. Mag., Wash., 1907, xviii, 650-70, 9 pl., 2 figs.) Account of visit, description of services, golden hall (one of the most splendid temples in Japan), cemetery (the feature

of Koyasan), hall of 1000 lamps, splendid monuments and tablets, honoring the dead soldiers, the most wonderful religious painting in Japan,—the Amida Ni-jo-go Bosatsu, or Buddha and his twenty-five angels painted by Eishin Sozu.

Volpert (A.) Gräber und Steinskulpturen der alten Chinesen. (Anthropos, Wien, 1908, III, 14-18, 3 pl., 1 fig.) Brief account of ancient Chinese stone graves in Shantung (some coffin-like, others large as rooms), and the sculptures upon the so-called *shy shi*, or "stone houses," which in the Han period were placed in honor of the dead upon graves of importance. Scenes from the lives of the departed were carved on these stones. The burial form of the stone cist dates from the Han dynasty (B. C. 206-A. D. 220). Three varieties of sculpture occur.

Wake (C. S.) A Khasi folk-tale. (Amer. Antiq., Chicago, 1908, xxx, 118-20.) The tale of "U Manik Raitong and his Flute," reproduced from the recent work of Maj. Purdon. This story "is so much in character in some of its incidents with stories current among some of the Plains Indians."

Zacharias (T.) Die weissagende indische Witwe. (Z. d. Ver. f. Volksk., Berlin, 1908, XVIII, 177-81.) Cites further evidence that the Hindu widow in the *uttee* is looked upon as a fortune-teller, etc.

Zumoffen (G.) L'âge de la pierre en Phénicie. (Anthropos, Wien, 1908, III, 431-55, 17 pl., 6 figs.) Gives results of investigations at "stations," etc., of the paleolithic period in Phenicia. Akbyeh (implements of Chellean type and some approaching Mousterian); Doukha (among many specimens some of St Acheul type); Keferaya (Mousterian scrapers); Adloun, between Tyre and Sidon (two caves; instruments of Acheulean and Mousterian types; bones of bison, deer, goat, wild pig); Ras-el-Kelb, the Greek Lycus (rock-shelters, etc.; animal remains,—rhinoceros, bison, deer, etc.; Mousterian implements numerous); Nahr Ibrahim, near ancient Byblos (caverns; bones of bison, goat, deer, wild pig); no Chellean implements, but some Mousterian; Antelias (pp. 446-452); source of the Nahr-el-Kelb (3 caverns; animal bones; Aurignacian implements); Batroun. The Antelias cavern is the most interesting and important paleolithic site known from Central Syria; remains of

ashes, etc.; bones of many animals; human bones,—an extremely low maxillary, fragments of humerus, cubitus, radius, bones of foot, etc.; stone implements of Aurignacian type. S's earlier researches were published in his *La Phénicie avant les Phéniciens*.

INDONESIA, AUSTRALASIA, POLYNESIA

Bauer (L. A.) The work in the Pacific ocean of the magnetic survey yacht "Galilee." (Nat. Geogr. Mag., Wash., 1907, XVIII, 602-11, 7 pl., 1 fig.) Some of the illustrations (native types of Fanning id., the Marquesas, Pago Pago, Fiji, etc.) are of ethnologic interest. One represents Samoan women playing cricket.

Best (E.) Personifications of nature among the Maoris of New Zealand. (Amer. Antiq., Chicago, 1908, xxx, 140-43.) Notes on *Papa* (Earth mother) and *Rangi* (Sky father) and their offspring; *Mahuika* (personification of fire and wife of the son of the sun); the *mauris* or charm-stones of the forest; the *tipuati* or natural inanimate objects having supernatural powers. All the principal trees "sprang from certain female beings through the agency of *Tani*, as the sweet potato sprang from *Pani*."

Bischofs (J.) Die Niol-Niol, ein Eingeborenstamm in Nordwest-Australien. (Anthropos, Wien, 1908, III, 32-40, 1 pl., map.) First part. Treats of the question of the aborigines and "civilization" (according to B. "a black woman as a rule, after bearing a half caste child, never brings a full-blood one into the world"; native women are often fertile with white men after having been long sterile with husbands of their own race), etc. Reservations and islands are too much needed for the whites to make them very serviceable for the blacks. The missions do good work. B.'s plan is for the Government to establish cattle-stations at every aboriginal center, with agricultural addition, to be carried on by the missionaries or the state authorities.

Emerson (N. B.) Hawaii's race-problem. (So. Wknn., Hampton, Va., 1908, xxxvii, 110-113.) Points out that the meeting and mingling of races is inevitable and the problem is to be solved by "the finding or establishing of a *modus vivendi* by which the Occidental and the Oriental can meet together under certain restrictions for the purpose of exchange."

ing certain benefits, not for the sake of ousting one another from place or function."

Grimshaw (B.) In the savage South seas. (Nat. Geogr. Mag., Wash., 1908, XIX, 1-19, 11 pl., 5 figs.) Contains notes on natives of Fiji and the New Hebrides (*yanggona* drink, dress and ornament, deformed skulls, wooden images of ancestors, etc.). Illustrations (*yanggona*-making, infant heading-binding, dances, "sacred house," ancestral idols, scar-tattooing, etc.) of ethnologic interest.

Howitt (A. W.) The native tribes of southeast Australia. (J. R. Anthropol. Inst., Lond., 1907, XXXVII, 268-78.) Replies to criticisms of author's statements in his *Native Tribes of Southeast Australia* by Andrew Lang in his *The Secret of the Totem*.

— Australian group-relationships. (Ibid., 279-88.) Against Lang, H. maintains that the tribes of the southeast who have not got *pirrauru*, "did at one time have a marriage of the type of the *pirrauru* of the Dieri." Far back H. sees "a period of general promiscuity between the sexes." At pages 287-89 are given lists of marital, parental, filial, fraternal, etc. terms in various Australian tongues.

— The native tribes of Southeast Australia. (Amer. Antiq., Chicago, 1908, xxx, 81-95.) Criticizes statements by R. H. Mathews in two recent papers and replies to his critiques of the author's views, etc. H. thinks M. altogether mistaken in his opinion that exogamy does not exist among the Victorian tribes. He also thinks the Kurru tribe to be now a mixture,—with some of the tribes "the younger generation grew up in comparative ignorance of the old customs and beliefs of the tribes to which their parents belonged (this was largely due to the "station" policy of the Government, the education of the native children, etc.). The total number of aborigines in Victoria in 1907 was 270 (including 81 half-castes) as against 1,690 in 1861 and about 6,000 in 1835.

— Personal reminiscences of Central Australia and the Burke and Wills expedition. (Rep. Austral. Ass. Adv. Sci., 1907, repr., 1-43.) Contains references (pp. 26, 31, 36) to aborigines.

ten Kate (H.) Opmerkingen naar aanleiding van het opstel Dr G. Grijns over reukmetingen. (Geneesk. Tijdschr. v. Nederl.-Indië, 1907, XLVII, 14-20.) Observations on Dr Grijns' investigations

of the sense of smell, which indicated that that of the natives (Javanese) was twice as keen as that of the Europeans." Dr ten K. thinks G.'s natives were a sort of *élite* and did not represent the Javanese generally, in view of the less sense of smell among the Japanese, etc. Anatomical and physiological factors, as well as psychological, have to be taken into account here.

Lang (A.) Exogamy. (R. d. Ét. Ethnogr. et Sociol., Paris, 1908, I, 65-78.) Argues that "the Arunta rule, with consequent non-exogamy of totems, can be nothing but a relatively recent innovation, which has not yet produced all its necessary results;" also that "the non-recognition of physical paternity is not necessarily a survival of pristine ignorance of physiology, but is a logical consequence of the Central Australian philosophy of eternal incarnation of spirits." Moreover, there are "natural human motives, *vera causa*, for every step in the evolution of Australian marriage rules, so far as we know these rules." European group sobriquets (*blason populaire*) "are not a survival of totemism, but they indicate a popular tendency to give such group sobriquets, out of which totemism may have arisen."

Mathews (R. H.) Some native languages of Western Australia. (Amer. Antiq., Chicago, 1908, xxx, 28-31.) Grammatical outline of the language spoken in the neighborhood of Perth, based on an elementary grammar of that tongue published by Mr Charles Simmons in the *Western Australian Almanac* for 1842. The language was "practically the same as far south as King George's Sound; it also extended north from Perth about 150 miles or further."

Mead (C. W.) The Bismarck Archipelago collection. (Amer. Mus. J., N. Y., 1908, VIII, 37-42, 3 figs.) Treats briefly of "taboo" or ghost house, *malagani* or ghost-house idols, implements and musical instruments (drum, trumpet, pan-pipe), etc. The Schroeder collection contains some rare objects.

Meier (J.) Mythen und Sagen der Admiraltätsinsulaner. (Anthropos, Wien, 1908, III, 193-206.) Native texts with interlinear translations of 5 myths about man (4 on "why we die") and 8 animal tales (*tauksa*-bird, bird-dances, how dog lost speech, mouse and polyp, fish-

- eagle and snake, dove changed to a woman, man in belly of fish, etc.)
- Peckel** (G.) Die Verwandtschaftsnamen des mittleren Neumecklenburg. (Ibid., 456-81.) Detailed and classified list, with explanatory notes, schemata, etc., of the terms denoting and referring to the 28 relationships recognized by the natives of central New Mecklenburg, from husband and wife to "name cousins."
- Pösch** (R.) Rassenhygienische und ärztliche Beobachtungen aus Neuuguinea. (A. f. Rassen. u. Ges.-Biologie, München, 1905, v, 46-66.) Treats of prevalent diseases (scarlet fever and measles, alcoholism, gout, diabetes, diphtheria and typhoid not known; bronchitis, pneumonia, rheumatism, malaria, —often fatal in children, ring-worm, etc., common; tuberculosis, elephantiasis, leprosy, cancer, dysentery, icterus, —epidemic in children in 1904, rachitis, nervous diseases, tic of facial muscles, amok-like affections, suicides occur), nutrition preservation and increase of the race (tobacco smoking and betel chewing play an important rôle; regulation of sexual relations, chastity and conjugal faithfulness highly prized by some tribes, little by others; infant mortality high, due in part to malarial and careless treatment; state of teeth very good, no caries; no evil results of interbreeding, e. g., among the isolated Monumbo; medicine and curative procedures).
- Pratt** (A. E.) Strange sights in far-away Papua. (Nat. Geogr. Mag., Wash., 1907, xviii, 559-72, 5 pl., 2 figs.) Abstracted by editor from author's *Two Years among the Cannibals of New Guinea* (Phila., 1907, 360 pp.). Treats of Tugeri, personal ornaments, trading village, the "piebald" Motu-motu, spider-web fishing-net, nose ornaments and head-dress, drums, bleeding, etc.
- Preserved** tattooed heads of the Maori of New Zealand. (Amer. Mus. J., N. Y., 1908, viii, 73-76, 2 figs.) Notes on process of tattooing, embalming, etc. These heads are now extremely scarce.
- Reiter** (J.) Der Ackerbau in Neuuguinea und auf den angrenzenden Inseln. (Anthropos, Wien, 1908, iii, 234-38.) General account of agriculture in New Guinea and neighboring islands. Manure is unknown (prejudice against it exists), but letting lie fallow is common. The inland tribes are more agricultural than those of the coast. Yams, *taro*, sweet potatoes are planted largely. The harder work is done by men. Coconuts, bananas, bread-fruit, *pandanus*, betel-nut, and papaya are cultivated also (manioc only in Bogia bay). The sago-palm is important. R. describes the making of a plantation. Tobacco is planted to some extent.
- Stone** (A.) Idol from Tahiti. (Amer. Mus. J., N. Y., 1908, viii, 20-21, 1 fig.) Note on an ancient stone idol (a human head and arms have been roughly carved on the upper end) now in the Museum.
- Ten years** in the Philippines. (Nat. Geogr. Mag., Wash., 1907, xviii, 141-48.) Abstract from Report of W. H. Taft, Sec. of War.

AMERICA

- Ashmead** (A. S.), **Grana** (F.), and **Gepp** (G. R.) Origin of syphilis in pre-Columbian America, etc. (Amer. J. Dermatol., 1908, 226-33.) According to Dr Grana, "there can be no doubt as to the existence of syphilis in America previous to its discovery," — it was the Quechuan *huanti*. There appears to be, however, no proof that the llama suffered from this disease in pre-Columbian times. At present in both Indians and llamas syphilis is rare. The quicksilver cure was not known before the coming of the Spaniards. The results of experimental inoculation of llamas with syphilis are also given.
- Bayliss** (C. K.) The McEvers mounds, Pike county, Illinois. (Amer. Antiq., Chicago, 1908, xxx, 97-101.) Brief account of the explorations of mounds nos. 1-8.
- Boas** (F.) Second report on the Eskimo of Baffin land and Hudson bay. (Bull. Amer. Mus. Nat. Hist., N. Y., 1907, xv, 371-570, 96 figs., 6 pl.) Treats of material culture (instruments, utensils, weapons, decorative art, etc.), general observations (on Eskimo of various regions in question), customs and religious ideas (mythology, birth and childhood, death, game-customs, charms, *angekok*, fall festival, etc.) of Eskimo of Southampton id., west coast of Hudson bay, Hudson str., Ponds bay, Cumberland id. At pp. 518-36 are given English texts of 18 tales from Cumberland id., at pp. 536-54 texts of 22 tales from the west coast of Hudson bay, and at pp. 558-64, 3 native texts from Cumberland id., with interlinear and free English translations. Among Dr B's conclusions are: The relations between the Eskimo of Hudson

bay and Baffin land and those of Greenland and of Alaska are much closer than has been generally assumed; the exuberance of form so characteristic of objects of Eskimo manufacture west of the Mackenzie river is due essentially to the stimulus received from foreign cultures, particularly from that of the Indian. The Eskimo have deeply influenced the culture of some of the N. E. Asiatic tribes (Chukchee, Koryak), and these may possibly have influenced the Eskimo methods of skin-decoration. Eskimo pictographic etching is more related to Indian art. The woman's knife is not of as late introduction into Greenland as Solberg thinks, nor are simple harpoon points made of a single piece of bone necessarily older than those made of bone with a stone point. The edging of knives with small pieces of iron is older than the introduction of European iron. The data in tales and legends also indicate closeness of culture originally, from Alaska to Greenland. Alaskan culture is much modified by Indian and possibly also by Asiatic influences. Eskimo taboos of contact between land-animals and sea-animals suggest an inland origin for the stock.

Boyle (D.) Additions to the Museum, 1907. (Ann. Arch. Rep., 1907, Toronto, 1908, 7-11.) Of the 588 specimens listed, perhaps the most interesting are the plaster cast masks of 8 Iroquois (one only full-blood) from Lorette, Caughnawaga, St Régis, and Oka, made from life by a Toronto artist.

— Review. (Ibid., 12-19.) Résumés briefly the activities of the Provincial Archeological Museum 1886-1907.

— Notes on some specimens. (Ibid., 20-37, 2 pl., 10 figs.) Brief descriptions of two large clay vessels; a number of catlinite pipes of which 5 are from Ontario, 9 from Manitoba and the N. W.; spindle whorls; a stone cist at Streetsville, Ont., the first structure of this kind to be found in Ontario; rock-paintings (probably Algonkian) on the N. shore of Nipigon bay; a copper "scraper," from a gravel-pit near Nipigon; a stone club or hammer from the Blood Indian reserve, N. W. T., etc.

— The killing of Wa-sak-apee-quay by Pe-se-quan, and others. (Ibid., 91-121.) Transcript in detail of the evidence at the trial, at Norway House, Keewatin, October 7, 1907, of a Cree

Indian for murdering his wife as a *weshigo* (*wendigo*).

Capitan (L.) Cours d'antiquités américaines du Collège de France (Fondation Loubat). Leçon inaugurale. (R. Éc. d'Anth. de Paris, 1908, XVIII, 80-111.) Résumés briefly the history of man in America (C. favors multiple origin of American man, and seems also to recognize comparatively recent Asiatic influences). The geological data, cave-man, mound-builders, cliff-dwellers and Pueblos, stone age Indians, Mayas and Aztecs, Chibchas, Incas—four centers of American civilization—are briefly considered.

Charnay (D.) Les ruines de Tuloom d'après John L. Stephens. (J. Soc. d. Amér. de Paris, 1906, N. S., III, 191-95, 1 pl.) Describes after Stephens' *Incidents of Travel in Yucatan* (N. Y., 1847), the temple ruins of Tuloom in Yucatan.

Chervin (A.) Conférence sur l'anthropologie bolivienne. (C. R. Assoc. Franç. Av. Sci., 1907, extr., 1-20, 4 figs., map.) Gives results of anthropometric measurements of 111 Aymaras, 75 Quechuas, and 22 *mitis*, all of whom except 16 were males, from the high plateaus of Bolivia. Both Aymaras and Quechuas are brachycephalic (av. index 82), about $\frac{1}{3}$ being mesaticephalic. In about $\frac{1}{4}$ of the cases the stature is greater than the finger-reach. The Quechuas are taller than the Aymaras, though the finger-reach of both is the same. The thoracic circumference of the Aymaras is greater and the trunk longer; their forehead is also lower and more retreating and the height of head less. The skin-color of the Quechuas is darker, also the eyes. Optimistic views of the future of the *mitis* race of Bolivia and the Indians are entertained,—the 24,000,000 people who inhabit the mountain regions of Spanish America count about 16,000,000 *mitis*, 6,000,000 Indians, and 2,000,000 pure whites. Dr C. is of opinion that the amplitude of chest observed among the Indians of the plateaus is due to race and not to altitude of habitat. The detailed anthropometric data, etc., of this expedition (Sénechal de la Grange et de Créquy Montfort) have appeared in two volumes on *L'Anthropologie Bolivienne*. In all some 500 anatomical specimens (skulls and complete skeletons) of pre-Spanish origin were collected.

Darton (N. H.) Mexico, the treasure-

house of the world. (Nat. Geogr. Mag., Wash., 1907, XVIII, 493-519, 19 pl., 2 figs.) The illustrations (Indian types, mestizos, sacrificial stone, etc.) are of ethnologic interest.

- Dixon** (R. B.) Some aspects of the American shaman. (J. Amer. Folklore, Boston, 1908, XXI, 1-12.) Treats of sex (in America women are widely permitted to become shamans; they sometimes, e. g., in northern California, equal or excel men), heredity (plays small rôle with some tribes, more commonly hereditary element but moderately developed; individual initiative and conscious seeking common; also supposed selection by supernatural beings and, more rarely, by older shamans, etc.), indications of shamanship (partly subjective and personal as dreams, visions or extraordinary experiences, partly patent to everybody), sources of power (animal spirits, local spirits and those of natural phenomena, ghosts of the dead, greater deities, — the last a comparatively restricted belief and ghostly origin rather rare), method of gaining control of power (fasting and solitude widespread, bodily cleanliness obtained by bathing, purgation, etc., offerings and sacrifice, drugs rather rare in N. America; procedures sometimes purely individual, sometimes teaching, etc., by older shaman), functions of shaman (healer, medicine-man and methods of cure, — among Cherokee, Navaho, Apache, etc., complicated formulæ, the shaman taking on more the character of a priest; sorcerer, preparer of charms, etc., use of trick and legerdemain; seer or prophet, — Siberian "spiritual flight" rare, — divination, trances, etc.; priest more noticeable among Plains tribes, little among those of lowest culture; educator, keeper and preserver of myth and tradition, arts of writing and divination, — teachers passive or active), organization (little organization where little specialization, highest in Mexico, C. America, Peru), standing in community (changes with changing conditions, often most powerful in times of peace, least in war), development (healer-sorcerer, shaman-sorcerer, shaman-priest). According to Dr D. "the shaman in America may be said as a type to exemplify one of the most characteristic attributes of the Indian as a race," and proves that, in spite of minor differences, "the culture of the

American Indians is fundamentally one in type."

- Du Bois** (Constance G.) Across the purple sea. An Indian tale. (So. Wknn., Hampton, Va., 1908, XXXVII, 101-06.) An elaboration of a California Mission Indian myth of Kwil-Yew and his adventures.

Emmons (G. T.) The use of the Chilcat blanket. (Amer. Mus. J., N. Y., 1908, VIII, 65-72, 4 pl.) The primary use was "as a blanket worn over the shoulders upon dance or ceremonial occasions by both sexes." As dress of the chief it corresponded to the eagle-feather war-bonnet of the Plains. The sleeveless shirt of similar material, weave, and character, was rare and worn by men only. After death the blanket serves as shroud, and after the cremation of the corpse and the deposition of the ashes, it is hung on the outside of the grave-house. In the eighties blankets and shirts were still in common use among the Chilcat, but white influences, etc., have caused their disappearance. Many of the old blankets are beautiful in technique, coloring, and design.

— The Chilcat blanket. With notes on the blanket designs, by Franz Boas. (Mem. Amer. Mus. Nat. Hist., N. Y., 1907, III, 329-401, 4 pl., 58 figs.) For notice of this valuable monograph, treating in detail of this interesting development of the art of the North Pacific Coast, see *American Anthropologist*, 1908, N. S., X, 296-98.

Fewkes (J. W.) Mural relief figures of El Casa del Tepozteco. (Proc. Davenport Acad. Sci., 1907, X, 146-52, 6 pl.) Study based on photographs by the author during a recent visit to Mexico and on a series of drawings by Sr B. Verazaluze, the custodian; 13 designs are considered, and suggested interpretations discussed. These relief designs "are among the most instructive relics of serial paleography to be found in place north of Chiapas." This little known temple is situated in the mountains above the Indian pueblo of Tepoztlan. The carved relief figures were painted red. The most elaborate design represents some carnivorous animal.

Friederici (G.) Affengesichten aus America. (A. f. Anthrop., Brnshwg., 1908, N. F., VII, 16-21.) Treats, with numerous bibliographical references, of stories and legends relating to monkeys in America: Ability of monkeys to ham-

mer and to throw (early Spanish historians and chroniclers report throwing of various objects, including stones in the Isthmus region, Venezuela, Peru, etc.; also numerous tales from the Chaco and Brazil); pulling arrows out of wounds and throwing them at the hunter, etc.; cooperation; coitus of Indians and female monkeys and between male monkeys and Indian women (proportionately few stories from America); tailed men (reported from Cuba; N. Atlantic coast, probably due here to the Eskimo with their tailed clothing; also the "tailed" Ugina on the upper Juruá, said to be descended from Indian women and the *coatá* monkeys; the "tailed men" of the interior of Demarara, of parts of Chile, Peru, etc.). F. considers that the wearing of animal-tails by Indians has often given rise to stories of "tailed" men.

Geoghegan (R. H.) Pri kelkaj remarkindaj similajoj inter la antikvaj kalendaroj de la amerikanoj kaj la azianoj. (Intern. Sci. Rev., Geneva, 1908, v, 144-49.) Second section. Treats of Chinese and Maya month-names.

Grinnell (G. B.) Wild horses and the Indians. (Forest and Stream, N. Y., 1908, LXXI, nos. 7, 8, 9.) An excellent series of articles on this subject, which became one of such vast importance to the Indians of the plains. Dr G.'s wide knowledge of the Plains tribes, derived from personal contact with them, makes his statements authoritative.

Hill-Tout (C.) Report on the ethnology of the southeastern tribes of Vancouver Island, British Columbia. (J. R. Anthr. Inst., Lond., 1907, XXXVII, 306-74.) Treats of Lékúñen (Songish) and Cowitchin or Kautsen (pp. 363-74). Concerning the Lékúñen, ethnography and sociology (villages, social organization, —sects rather than gentes, classes—chieftains, hereditary nobility, base-folk, slaves, family names and titles, marriage-customs), linguistics (outline of grammar; text of myth with interlinear and free English versions; English texts of 7 myths; vocabulary, pp. 352-63.) The Cowitchin data include origin legend, list of villages, tradition of flood and earthquake; native texts in Island and Lower Fraser dialect with interlinear and free English versions; English texts of two myths; note on clairvoyant powers of Indian women. The Lékúñen have dwindled from 8,500 in 1859 to about

200, and the Kautsen from 5,005 forty-five years ago to about 800 now. With the Clallam and Lummi of Puget sd. the Lékúñen forms "a distinct sub-linguistic group" of the Salishan stock.

Honors for Asmundsen. (Nat. Geogr. Mag., Wash., 1908, XIX, 55-76, 2 pl. 8 figs.) Report of proceedings at banquet of National Geographic Society. Some of the illustrations (Eskimo types, implements, fire-making, toys and dolls) are of ethnologic interest.

Hough (W.) The pulque of Mexico. (Proc. U. S. Nat. Mus., 1908, XXXIII, 577-92, 19 figs.) Treats of agave culture, collection of sap, or *aguamiel* and its transportation, *finasal* (vat), *pulquerías* (inns), vendor's outfit, manufacture, adulteration, etc., of *pulque*, the native Mexican intoxicant. Dr H. believes that the discovery of the sap-yielding quality of the agave was made by the old Mexicans while searching for the larvae of the *Acentrocne kollar*, a white grub, still sold (boiled and wrapped in a cover of agave) as a delicacy on the streets of Mexico. The search for fiber may also have been a contributory factor.

von Ihering (H.) Os Índios Patos e o nome da Lagoa dos Patos. (R. Mus. Paul., S. Paulo, 1907, VII, 31-45.) Treats of the "Patos Indians" and the name of the Lagoa dos Patos in Uruguay-Brazil, resuming historical data, etc. There never existed a tribe of "Patos" Indians, and the lake and river names in question came from some other source, possibly from the presence of aquatic birds in this region.

— Os machados de pedra dos Índios do Brasil e o sur emprego nas derrubadas de mato. (R. Inst. Hist. de S. Paulo, 1907, XII, sep., 1-9, 3 pl.) Discusses the stone axes of certain Brazilian Indians (in Alto da Serra, etc.) and their use in cutting down trees, as demonstrated by the author's actual experiment, which one of the plates illustrates. See *Amer. Anthropol.*, 1907, N. S., IX, 424.

de Jonghe (É.) Le calendrier mexicain. Essai de synthèse et de coordination. (J. Soc. de Amér. de Paris, 1906, N. S., III, 197-227.) Same article in German noticed in *American Anthropologist*, 1907, N. S., III, 425.

Joyce (T. A.) Prehistoric antiquities from the Antilles in the British Museum. (J. R. Anthropol. Inst., Lond., 1907, XXXVII, 402-19, 9 pl., 3 figs.) Brief descriptions of 6 wooden idols, a wooden seat, 3

three-pointed stones, 4 "stone collars," 6 stone pestles, 2 carved stone "rubbers," stone celts (Cuba 1, but Barbados, Jamaica, and St Vincent good collections), 4 carved (human figure on bust in relief on one side), miscellaneous stone objects, pillar-stone (from Nevis), pottery fragments.

Kesler (D. E.) The lighting of the graves. (So. Wknn., Hampton, Va., 1908, xxxvii, 86-89, 3 figs.) Describes "the feast of All Souls, an annual festival held on Hallowe'en by the Indians of the Mesa Grande reservation of California." The "lighting of the graves" is stated to be "a ceremony almost purely Indian in origin, although connected with the general sentiment of the feast of All Souls."

Koch-Grünberg (T.) Les Indiens Ouitotos. Étude linguistique. (J. Soc. d. Amér. de Paris, N. S., III, 1906, 157-89, 2 pl.) Gives vocabulary (pp. 163-78) obtained in Mar.-Apr. 1905, on the lower Apaporis, outline of grammar (pp. 179-85), and comparative vocabularies (pp. 188-89) of Ouitotan dialects—Káime, Orejone, Miranha-Carapaná-tapuyo, Coérana. The Ouitotan is a distinct linguistic stock, the dialects of which are spoken by Indians between the Yapurá and Içá in S. E. Colombia.

— Die Hianákoto-Uimáua. (Anthropos, Wien, 1908, III, 83-124, 297-335, 1 pl.) First two parts of valuable monograph on this Cariban people of the Caiary-Uaupés, Maciáya, etc., in S. E. Colombia, containing a list of grammars, vocabularies, and dictionaries in Cariban languages (pp. 90-95), a vocabulary obtained in 1904 (95-124, 297-332) in German and Spanish, with corresponding terms in other Cariban tongues, etc.

Kroeber (A. L.) Wiyot folk-lore. (J. Amer. Folk-lore, Boston, 1908, XXI, 37-39.) Notes on shamans and their "cures," taboos, dances, puberty-ceremonies of girls, superstitions concerning sexual relations, women in labor, albino deer, salmon, stars, etc. Five is a sacred number; dark-colored stone pipe-bowls are female, light-colored male. Red obsidian with black streaks is "a woman who had not washed at puberty."

— A southern California ceremony. (Ibid., 40.) Cites a ceremony of the Shoshonean Indians near Los Angeles to make some one sick, involving "mak-

ing an earthquake" and "a painting like the earth."

Lehmann (W.) Traditions des anciens mexicains. Texte inédit et original en langue nahuatl avec traduction en latin. (J. Soc. d. Amér. de Paris, 1906, N. S., III, 249-97.) Gives Nahuatl text with Latin translation and explanatory notes, a portion of an unpublished MS. (copied by Brasseur de Bourbourg and now in the Paris National Library), on "The History of Colhuacan and Mexico." At p. 295-97 is given an index of proper names, etc.

Lejeal (L.) Washington Matthews. (Ibid., 305-07.) Brief biography, list of chief publications, etc.

— Quelques travaux récents sur l'Amérique moyenne. (Ibid., 341-44.) Reviews and critiques of recent studies on Central American ethnology and archeology by Sapper, Nuttall, Lehmann, Callegaria, Barbarena, etc.

Lyon (M. W., Jr) Mammal remains from two prehistoric village sites in New Mexico and Arizona. (Proc. U. S. Nat. Mus., 1906, xxxi, 647-49.) Treats of remains from a cave on the upper Tularosa river, N. M., and from the ancient pueblo at Blue post-office, eastern Arizona. Near the cave were formerly four rubble houses, marking it. Interesting is the finding of bones of the buffalo in this cave, "extending its range to within a few miles of the western border of New Mexico, or about 110 miles farther west than hitherto recorded."

Mahoudeau (P. G.) Les documents paléanthropologiques du sud-américain et les processus évolutif des primates d'après M. Florentino Ameghino. (R. Ec. d'Anthr. de Paris, 1908, XVIII, 20-30.) Résumés the investigations and opinions of Ameghino on the evolution of the primates in South America, his theory of an independent origin of South American man, etc. The skull of Miramar (according to Ameghino, the oldest human cranium known), the skeleton of Fontezuelas (upper Pliocene), skull of Arrecifes (Quaternary), etc., are discussed. Ameghino believes that both with the prosimians and the apes tree-life is a comparatively recent adaptation. For him "man is not an improved ape, but the apes are bestialized men,"—all the fossil apes even of the Old World come under this category. As to cranial formation, the nearest relatives of man are to be found among American monkeys, —

that of the *Salmiris* is more human than that of the *Pithecanthropus* or that of any known anthropomorphic ape.

Mead (C. W.) The South American blow-gun. (Amer. Mus. J., N. Y., 1908, VIII, 42-43.) Describes the manufacture and use of the blow-guns of the Indians along the upper Caiary-Uaupés, several of which are in the Museum. The guns are made of palm-stems (*Iriartea setigera*) and have sights of boars' teeth. The arrows are poison-tipped with *curari*. A skilful Indian will kill a small bird at 30-40 paces.

Methods of obtaining salt in Costa Rica. (Nat. Geogr. Mag., Wash., 1908, XIX, 28-34, 5 pl., 2 figs.) Describes obtaining of salt from the low flat lands (flooded at high tide) on the Pacific coast of Costa Rica.

Rivet (Dr) Cinq ans d'études anthropologiques dans la République de l'Équateur (1901-1906). Résumé préliminaire. (J. Soc. d. Amér. de Paris, 1906, N. S., III, 229-37, map.) Treats of author's researches in the prehistory of Ecuador (inter-Andean plateau has always been a seat of higher culture than that of Pacific and eastern plains), Inca remains, the modern Cayapa and Colorado Indians, the Napo Indians and the Jivaros, etc.

Roth (W. E.) "Crotch-cradle" in British Guiana. (R. d. Et. Ethnogr. et Sociol., Paris, 1908, I, 193-199, 24 figs.) Describes and figures 21 examples (mosquito, dug-out, canoe, bone, crab, bird's nest, snake, *jumbi* or spirit, rat-trap, *hu-e*-fish, fish-trap, *benab*-roof, "silk-cotton" tree, islands, swamp, palm-tree, turtle, butterfly, moon, etc.) from the Arawak and Warau Indians. The game, known in Arawak as "fastening together," and in Warau as "finger-string," is played by boys and girls, but rarely by adults. In one case only were two strings used.

Smith (H. I.) An archeological reconnaissance in Wyoming. (Amer. Mus. J., N. Y., 1908, VII, 22-25, 1 pl.) Notes importance of this area, ethnologically and archeologically—home of bison, etc. In Wyoming (particularly in the eastern part) tipi-circles of stone occur by the hundred; pottery is rare; steatite pots of unique type occur especially in western Wyoming; in front of the caves of this region "there are much village debris, many tipi-circles and some petroglyphs." On some of the picto-

graphs near the Wind River mts. buffaloes, on others horses, are represented. A petroglyph near Shoshone is figured on p. 22.

Solberg (O.) Beiträge zur Vorgeschichte der Ost-Eskimo. Steinerne Schneidegeräte und Waffenschärfen aus Grönland. (Vid.-Selsk. Skr. II. Hist.-Filos. Kl. No. 2, Christiania, 1907, repr., 1-92, 12 pl., 55 figs., map.) After resuming recent archeological research in Greenland, S. discusses in detail the stone implements, weapon-points, etc., from Greenland, particularly from Kekertak, etc., in the Disko region. Scrapers, knives, borer-points, awls, axes, *ulot*, etc., harpoon, lance and arrow-points, transitional forms, etc., are considered. According to S., the stone implements, etc., of the Eastern Eskimo are unusually old in character as compared with other Eskimo regions. Isolation has had its influence upon Greenland stone art, and the introduction of iron by the Europeans has influenced it much. The *ulot*, or woman's knife, he thinks, was introduced into Greenland at a relatively late period. In Greenland stone art has two aspects, one retaining old forms, etc., from the original Eskimo home, the other showing special forms developed *in loco*. See *Boas* (F.).

Sparkman (P. S.) A Luiseno tale. (J. Amer. Folk-lore, Boston, 1908, XXI, 35-36.) Tale of origin of a spring at the place where was cremated a man bitten by a rattlesnake—he had lost his *elut*, while drinking in Pavawut's house (i. e. pond).

Speck (F. G.) The Negroes and the Creek Nation. (So. Wknn., Hampton, Va., 1908, XXXVII, 106-110.) Sketches past and present conditions. The Indians were easy masters and the slaves and the latter adapted themselves to the culture of the former, adopting their language (to-day many speak Creek better than English), and taking up the Creek harvest ceremony in the absence of other religious activities. The influence of the Negroes is seen in certain peculiar mythical ideas (out of harmony with American Indian mythology in general) and in a "minimizing of the credulity and seriousness with which the Creeks regarded their native beliefs," while, on the other hand, "in the ordinary customs of daily life and practice the Negroes and mixed-bloods of the nation show the characteristics of Creeks." There are

four classes: Old full-blood conservative Indians with nearly all their native attributes; the mixed Indian-Negroes who are conservative too and have become Indianized, so to speak; the progressive Indians and mixed bloods, who have become modernized; and the old Negro freedmen, who hold themselves intact from both modern influences and Indian influence, preserving what is best represented by the 'old plantation' type." The second class are the most numerous and many become dominant. Dr S. takes an optimistic view of the prospects of this "race amalgam," which is of great ethnologic interest.

Spinden (H. J.) Myths of the Nez Percé Indians I. (J. Amer. Folk-Lore, Boston, 1908, XXI, 13-23.) English texts of 11 brief myths (creation story, Ilawewitsix, the Kamiah monster, how the salmon got over the falls, the log-worm, coyote and winter have a war, coyote and the grizzly bear, coyote and salmon, Katstainomiots or elbow-baby, porcupine and coyote, up a creek, coyote and fox) collected in the summer of 1907 chiefly from an old Indian formerly shaman and chief and for many years a Methodist minister. The chief figure is coyote (culture-hero, buffoon, and dupe). Notes referring to analogous tales.

Tozzer (A. M.) A note on star-lore among the Navajos. (Ibid., 28-32, 4 figs.) As "a rather extraordinary instance of Indian acumen," the representations on a gourd-rattle (by means of holes) used in connection with the ceremony of the Night Chant, of certain groups of stars as compared with their actual appearances in the sky (Schweig's *Tašuiia Calentes*). Among the groups and clusters wholly or partially figured are: Constellations of Auriga, Ursa Major, Taurus, Pleiades, Hyades, Orion. The exactness of the Indian representation is striking and evidences their "keen sense of observation."

Westfälische Hochzeitsladung in Missouri. (Z. d. Ver. f. Volksk., Berlin, 1908, XVIII, 99-101.) Reprinted from *Die Amerika* (St Louis) for Apr. 21, 1907. Account of wedding-invitation in rhyme used among the Westphalian Germans of Florissant, St Louis co., Mo.

Wintenberg (W. J.) The use of shells by Ontario Indians. (Ann. Arch. Rep. Ont., 1907, Toronto, 1908, 38-90, 15 pl.) Treats of shell-fish as food (only one "shell-heap" reported from Ontario,—in the Rice Lake district, near the Indian mounds at Cameron's Point); shells in the domestic arts and manufactures,—cups, spoons, knives, razors and tweezers, in pottery-making, tanning, wood-working, as fish-hooks, shell trumpets, etc. (some ideas as to possible uses of certain implements are purely conjectural); shells used as ornaments (beads, pendants, gorgets,—but two engraved gorgets from Ontario are in the Museum); wampum; shells in aboriginal commerce (presence of *Busycon* and other tropical shells noted).

Work (M. N.) The spirit of negro poetry. (So. Wkmn., Hampton, Va., 1908, xxxvii, 73-77.) In slavery days three things were emphasized in negro songs—life is full of sorrow and trouble, religion is the best thing in the world, the future life is happy and eternal. The poetry of the free negroes of the North had a wider range. The war and emancipation greatly influenced negro poetry, and the poets "sang of the triumphs of liberty and the meanings and possibilities of freedom." The later poetry is principally objective. Now, again, the time is ripe for poetry representing the deep inner life of the negroes.

Wright (A.) An Athapascan tradition from Alaska. (J. Amer. Folk-lore, Boston, 1908, XXI, 33, 34.) English text of younger brother, monster-killer myth, explaining why the ermine has white around its neck.

FOREIGN NOTES

THE BRITISH EXPEDITION TO THE UPPER CONGO COUNTRY

In a personal letter recently received from Mr T. A. Joyce, of the British Museum, are the following interesting references to the British Expedition now among certain tribes in the upper Congo valley, situated in the southern part of the Congo state, Central Africa.

The expedition ascended the Sankuru (a tributary of the Kassai which flows northwest and empties into the Congo above Stanley Pool) to Lusambo and then spent some time in and around the Batetela country, collecting much information about that tribe, and afterward spent a short time in the Ba Songo region. The Bakuba country was next visited, and a good deal of time was spent in and around Misumba. The Bakuba notes are of singular interest and are remarkably complete. When last heard of the expedition was starting for the country of the Ba Songo Meno, the first white men to attempt penetration into that little-known piece of territory without an escort. Practically nothing is known of the Ba Songo Meno.

The collections that have at present reached the British Museum are very good, especially those of the Bakuba. The carvings and pile-cloth (with named patterns) in the latter are a most magnificent series. Large hand drums and friction-drums are also represented.

The Batetela collection is also large and complete. A collection of ninety-six skulls, all belonging to one subtribe, was made in the Batetela country, and a number of measurements have been taken on the living, together with full-face and profile photographs of the individuals measured. A number of phonographic records has also arrived safely.

The expedition was organized by T. A. Joyce and E. Torday, fellows of the Royal Anthropological Institute, and while the former remains in London the latter is conducting the field work, accompanied by the artist Norman Hardy, and M. W. Hilton-Simpson.

The Minister for the Congo at Brussels has rendered the expedition all possible assistance, and the British Museum has received the refusal of all the collections made.

The exploration of this little-known region of Central Africa is certainly an arduous undertaking, and we wish the members of the expedition all success and a safe return.

D. I. BUSHNELL, JR.

THE TRADESCANT COLLECTION

A brief description of the old Tradescant Collection in the Ashmolean Museum, Oxford, has already appeared in the *American Anthropologist* (vol. ix, p. 38), at which time the five existing specimens from Virginia were figured.

In the printed catalogue of the collection, which bears the title "*Museum Tradescantianum, or a Collection of Rarities preserved at South Lambeth near London by John Tradescant. London: M.DC.LVI.*", and which was the first museum catalogue printed in the English language, are the following references to American material, in addition to the objects from Virginia already referred to:

P. 46. . . . Tomahacks, 6 sorts.

P. 47. . . . A Match-coat from Canada.

P. 50. . . . Shooes from Canada.

P. 51. . . . Black Indian girdles made of Wampam peek, the best sort.

Of the "tomahacks" only three remain. They were figured and described in *Mun*, 59, London, 1907, and again by Mr Holmes in the *American Anthropologist* (vol. x, 1908, p. 271, fig. 85).

The "Match-coat from Canada" is now figured for the first time (pl. xxx). It is made up of rather thin, well-tanned deerskin, and the ornamentation is of unusually beautiful quillwork that has retained the brilliant coloring of the native dyes. Considering its great age—nearly three centuries—it is in a remarkably good state of preservation, although several pieces have been cut from it and it has become hard and stiff as a result of having been wet. This specimen, of course, is of special interest and value, as it is unquestionably the oldest example in existence.

Of the "Shooes from Canada," referring probably to moccasins, none can be found in the collection; and only a few wampum beads, both purple and white, can now be traced, consequently the "Black Indian girdles made of Wampam peek" have evidently been lost or destroyed.

Only nine of the many objects from North America that are recorded in the Catalogue of 1656 are known to have survived to the present day, and all these have now been figured in this journal.

D. I. BUSHNELL, JR.

PHONOGRAPHS AND THE MUSEUM

The Rautenstrauch-Joest-Museum of Cologne, Germany, has evidently, during the few years of its existence, done much to popularize



"A MATCH-COAT FROM CANADA," MENTIONED IN THE TRADESCANT CATALOGUE OF 1656.
NOW IN THE ASHMOLEAN MUSEUM, OXFORD

the study of anthropology in that city. Now, in addition to the regular lectures, the phonograph is used to reproduce the music of the native tribes of the various parts of the world. Between the hours of twelve and one every day there are free illustrated lectures, when some particular area or tribe is described. Illustrations of native dances or ceremonies are accompanied with the proper music on the phonograph, the records having been made while the ceremonies were being enacted and photographed.

The museum possesses records made among the Pueblo, Pawnee, and Thompson River tribes of North America, and many from other parts of the world.

THE RIABOUSHINSKY KAMCHATKA EXPEDITION

This expedition, organized under the auspices of the Imperial Russian Geographical Society and made possible by the generous patronage of Mr Theodor P. Riabouschinsky, the Moscow banker, has for its purpose the biological, geological, meteorological, and anthropological survey of the Kamchatka peninsula, which it is expected will cover a period of two years. The anthropological research will include the Aleutian, Komandorski, and Kurill islands. Three parties of the expedition, the zoological, botanical, and geological, left St Petersburg in April last and reached Kamchatka in June. The meteorological party departed early in August, and the ethnological party will reach the Aleutian islands in November.

The zoological party, under the directorship of Prof. P. J. Schmidt, consists of five scientific members, each of whom has undertaken a special branch of zoological research, Professor Schmidt devoting himself to ichthyology, while the ornithological work will be in charge of V. L. Bianki of the St Petersburg Academy of Sciences. The geological party will undertake the investigation of both the geology and topography of Kamchatka, especially of the little-known eastern part. The chief purpose of one of the two sections of the geological division of the expedition, in charge of the mining engineer Konrady, will be a study of the volcanoes and glaciers of the peninsula; the other division, under the direction of the mining engineer Krug, has undertaken the general geology. The two sections will join in preparing the topographical map. The botanical party consists of five members, headed by V. L. Komarov, senior botanist of the Imperial Botanical Garden at St Petersburg. The meteorological party consists also of five members, including its chief, V. A. Vlassov of the Physical Observatory of St Petersburg, under whose direction four stations of the first rank for the study of the meteorology of Kamchatka will be established.



FIG. 108. — Clubs from Northwestern America in the Royal Scottish Museum.

The leader of the anthropological party, Dr Waldemar Jochelson, is well remembered in America by his researches in connection with the Jesup Expedition of the American Museum of Natural History. Dr Jochelson will have two scientific assistants, one of whom, Mrs Jochelson, M.D., will conduct the anthropometric work. In its field of operations and in the problems to be solved, this party may be regarded as continuing in a measure the researches of the Jesup Expedition. At the instance of the Russian Secretary of State and on the recommendation of the Smithsonian Institution, the Government of the United States has granted permission to the anthropological party of the expedition to visit the Aleutian islands for the purpose of conducting ethnological and archeological investigations, and a similar request has been presented to the Japanese government for permission to conduct researches on the Kurill islands.

ADDITIONAL WHALE-BONE CLUBS FROM NORTHWESTERN AMERICA

Between pages 403 and 412 of my memoir on the Archeology of the Gulf of Georgia and Puget Sound¹ I endeavored to bring together illustrations and descriptions of all the characteristic paddle-shaped clubs made of whale's bone, of which I could learn, that had come from the northwest coast of America, and the editor, Professor Boas, therein discusses the art and independent development of these clubs.

Since the publication of this paper I have learned of two additional clubs in the Royal Scottish Museum of Edinburgh. Mr Walter Clark, assistant curator of that Museum, informs me that the history of these two specimens is unknown, but as the

¹ *Memoirs of the Jesup North Pacific Expedition*, Vol. 11, part 6.

Museum contains collections gathered by Captain Cook, these also may have been obtained by him from the northwest coast of America. The type being identical with that of the clubs which I have figured, I have no doubt that they came from the Columbia valley or from the area between it and southern Alaska, and probably from that part of the region adjacent to Vancouver island, if not the island itself.

Little need be said about the carving of these clubs that is not shown in the illustrations or has not been discussed by Professor Boas in the publication above mentioned, but it may be well to repeat that this type of club seems to have developed independently in America and is most common on the western coast of Vancouver island, where such clubs were used until recent times.

The carving of the knob at the end of the handle is supposed to represent the head of an eagle or of a thunderbird, and is of the type of carving found in the art of the Nootka with a bird-headress of the same type as that of the eagle-head masks common among those people. The body of the first specimen is inlaid with what I take from the photograph to be haliotis shell surrounded by a circular design and arranged in a median line. Some of the shell inlay has apparently dropped out.

Mr Clark informs me that in a small museum in Douglas, Isle of Man, there is a finely inlaid club of this general type, with the head of the handle beautifully carved, and, if memory serves him well, a double row of "pearl" inlaid on the blade.

Professor Marshall H. Saville informs me that W. O. Oldman, a dealer at 77 Brixton Hill, London, S. W., has a splendid old club of this general type.

HARLAN I. SMITH.

ANTHROPOLOGIC MISCELLANEA

Note on Left-handedness among North American Indians.—The literature concerning left-handedness among the aborigines of North America is not very extensive. The principal data and the chief discussions of the subject are contained in the following works:

BRINTON, D. G. Left-handedness in North American Aboriginal Art. *American Anthropologist*, ix, 1896, p. 175-181.

CUSHING, F. H. Manual Concepts: A Study in the Influence of Hand-usage on Culture-Growth. *Ibid.*, v, 1892, p. 289-317.

JONES, L. Cases of the Use of the Right and Left Hands respectively, Gathered from the Report of Colonel Garrick Mallery on "Sign Language among the North American Indians." Appendix B, p. 490-492, of J. M. Baldwin's *Mental Development in the Child and the Race. Methods and Processes*. N. Y., 1895.

MASON, O. T. Left-handedness. *American Anthropologist*, ix, 1896, p. 226.

— Left-handedness. *Science*, N. S., xxiv, 1906, p. 560.

REAGAN, A. B. Concerning Left-handed Aborigines. *Ibid.*, xxv, 1907, p. 909.

WILSON, D. Left-handedness. *Canadian Journal*, 2d s., xv, p. 465-485.

— Right-handedness. *Ibid.*, xiii, p. 193-231.

— Primæval Dexterity. *Proceedings of the Canadian Institute*, 3d s., iii, p. 125-143.

— *The Right Hand: Left-handedness*. London, 1891, 215 p.; chap. v, p. 31-61, on Palæolithic Dexterity.

(Wilson's articles, in practically the same form, were published also in the *Transactions of the Royal Society of Canada*.)

The late Sir Daniel Wilson, himself no mean artist, and left-handed withal, held that "profile drawings by a primitive artist nearly always look to the left, while a left-handed draftsman almost certainly makes his figures look to the right." Brinton, who examined in the light of this statement the material in Mallery's "Picture Writing of the American Indians" (*Tenth Ann. Rep. Bur. Ethnol.*), reports "a decided predominance of the former (i. e. facing to left), but also the not infrequent occurrence of the latter (i. e. facing to the right)." His general conclusion was that "the aboriginal race of North America was either left-handed or ambidextrous to a greater degree than the peoples of mod-

ern Europe." This view, not shared by Wilson, was based chiefly on the examination of stone implements, etc. Mason (1896) observes "*quod sciam*, no savage woman was ever left-handed," and states that, of one hundred throwing sticks (good instruments for such a test) in the United States National Museum, etc., examined by him, three only are left-handed; while "of nearly a hundred scrapers in handles with finger grooves there is not a left-handed one." In 1906 Mason repeats these data and asks for further evidence of left-handedness among primitive peoples. Reagan (1907) found four men and one woman left-handed out of 231 Chemakuan Indians (Quileute and Hoh) of Washington. Cushing (p. 292) admits "the universality of right-handedness and of the tendency to number with the fingers," in virtue of which "the right hand has ever been the counter, the fingers of the left hand the ones counted." Jones, who examined the data in Mallery's "Sign Language among North American Indians" (*First Ann. Rep. Bur. Ethnol.*), found right-hand domination. Cuq, in his *Lexique Algonquien* (p. 253) cites an Ottawa Indian as saying, "there are no left-handed people among the Indians," but adds that the speaker's reputation for veracity was not very good.



FIG. 109. — Sā'nīlāt'itkāt, a "Blackfoot man"; drawn by the Indian Louis in ten minutes, July 27, 1891.

In looking over a collection of drawings obtained from the Kutenai Indians of southeastern British Columbia, in 1891, the writer noted the one here reproduced as perhaps deserving attention in the consideration of the question of left-handedness. It was drawn in ten minutes by Louis, a young Kutenai Indian, at Ft Steele, B. C., and represents a Blackfoot man firing off a revolver in celebration of the meeting together of the Kutenai and Blackfeet. Such a visit on the part of some Blackfeet to the Kutenai country, where they were hospitably received, occurred in the summer of 1891. The Blackfoot has on, apparently, the valuable necklace which his people formerly obtained in trade from the Kutenai, such ornaments having been in earlier times an important article of intertribal

commerce. It is an interesting fact that he is holding the revolver in his left hand. Unfortunately, the unusual character of this drawing was not observed at the time of its execution, and no explanation from the Indian who made it can be offered. Whether the drawing is intended to represent an individual left-handed Blackfoot, or whether the left-handedness indicated is merely an idiosyncrasy of the primitive artist, may be doubted. It may be mentioned that of ten drawings of animals, five of birds, three of fishes, and four profiles of men and women, by the same young Indian, not a single one faces the right. Of drawings of animals made by four other Kutenai Indians the numbers facing right and left were, respectively: right 41, left 15; right 14, left 6; right 16, left 34; right 2, left 12—a total of 73 right and 67 left. Adding the 22 left drawings of Louis, this makes the right drawings 73 and the left 89, out of 163, the work of five individuals. It is evident that individual differences or *penchants* count for a good deal in this matter. The largest proportion of left drawings, except those of Louis, was by an old warrior, and the next largest by a young man, his son (these were 34:16 and 12:2).

Careful statistics from other tribes are needed to settle satisfactorily the question of "left-handedness."

ALEXANDER F. CHAMBERLAIN.

Myron Eells.—Information of the death of Dr Myron Eells, in 1907, has only now been received. Dr Eells was born October 7, 1843, at Walker's Prairie, Washington, where his father, the Reverend Cushing Eells, was then serving as a missionary among the Chemakum Indians. On account of the Whitman massacre and the Cayuse war, the father left Walker's Prairie with his family in 1848 and went to Salem, Oregon, where Myron entered school. In the following year the family moved to Forest Grove, in 1851 to Hillsboro, and in 1857 again to Forest Grove, at which place the youth continued his school life. He was graduated from the Pacific University at Forest Grove in 1866, being a member of its second graduating class. Having been graduated from Hartford Theological Seminary in 1871, he was ordained a Congregational minister in the same year, and went to Boisé, Idaho, where he organized a church and remained its pastor until 1874, meanwhile serving as president of the Idaho Bible Society. He went to Skokomish, Washington, in June, 1874, from which time until his death he labored continuously, under the auspices of the American Missionary Association, among the Twana and Clallam Indians. In 1887 Mr Eells was chosen

trustee of Pacific University; in 1885 he was elected assistant secretary, and in 1889 secretary of its board of trustees. In 1888 he was elected trustee of Whitman College, Washington; he received the degree of D. D. from that institution in 1890, and in the following year declined its presidency. Dr Eells was an associate member of the Victoria Institute of London and a corresponding member of the Anthropological Society of Washington, and in 1893 was superintendent of the ethnologic exhibit of the State of Washington at the World's Columbian Exposition. In addition to numerous unpublished Indian linguistic and ethnological manuscripts, Dr Eells was the author of *Twana Indians of the Skokomish Reservation* (1887), *History of Indian Missions on the Pacific Coast* (1882), *Ten Years of Missionary Work at Skokomish* (1886), *Hymns in the Chinook Jargon* (1889), *Father Eells* (1894), *Reply to E. G. Bourne's "Whitman Myth"* (1902), and of various papers published in scientific and other serials, including the publications of the Victoria Institute and the Smithsonian Institution, and the *American Anthropologist*.

Edward Pleasants Valentine.—It is with great regret that we record the death of Edward Pleasants Valentine, at Richmond, Virginia, on March 24th last. Mr Valentine, the son of Mann S. Valentine, was born in Richmond, April 6, 1864, during the most trying times in the history of the Old Dominion capital. He was educated at McGuire's School, the Virginia Institute, and the University of Virginia, and although he devoted particular attention to mining engineering and chemistry, his breadth of mind led him to the study of many subjects, not the least of which was the promotion of the welfare of the laboring classes, strongly believing that scientific industrial training should be given to all who were ambitious enough to avail themselves of it. He became interested in the Virginia Mechanics Institute, and for some years was a member of its directorate. So far as his time and means permitted, he devoted them to scientific research, and a large part of the archeological work done for the Valentine Museum was carried out by him. The results of some of Mr Valentine's work in this direction are incorporated in a brochure on the "Hayes Creek Mound," in which are summarized his studies of a large earthwork excavated by him in Rockbridge county. Mr Valentine was a member of the board of directors and treasurer of the Valentine Museum, founded by his father, who gave his home (a beautiful example of ante-bellum architecture), his collections, and an endowment fund to the city of Richmond for museum purposes. In the organization, arrange-

ment, and administration of the Museum, Edward Pleasants Valentine played a conspicuous part, and the prompt and successful establishment of the institution was brought about largely through the ability, energy, and enthusiasm which he devoted to this labor of love. At the time of his death Mr Valentine was a member of the American Anthropological Association.

The Sawtell Avenue Mound, Cleveland. — The so-called Sawtell Avenue Mound was the last of the mounds that originally lay within the limits of Cleveland and the last large mound of the vicinity, according to the report of D. Matthews published in the last issue of the *American Journal of Archaeology*. The original dimensions of the mound were 63 feet north and south, 75 east and west, and 10 feet in height. Its removal was required recently by a regrading of the property. About 1867 Col. Charles S. Whittlesey dug a trench from the east to the center of the mound. He found an "artificially wrought sphere made of the iron stone of the coal series" with perforations countersunk and at right angles to each other; near by four small copper rings and a stone whistle. The usual human skeleton was lacking. During the removal of the mound in 1908, it was found to be entirely composed of the red sand-gravel and clay of the surrounding subsoil without stratification. No bones or other objects were discovered in the tumulus itself. Trenches were also run through the ground beneath to a depth of five feet below the original level of the surface. Here six skeletons were found from 6 to 23 feet from the central point of the mound and at a depth of from 4 to 6 feet. The skull, leg and arm bones, and vertebræ are represented among the bones. Immediately above the two skeletons nearest the center lay charcoal. Two cylindrical sheet-copper beads and an apparently unfinished projectile point of flint were discovered at a depth of about 2 or 3 feet. A cross section of the strata included in the upper 6 feet of this natural underlying deposit is as follows: black top soil, red sand-gravel, blacker sandy gravel, red sand-gravel, black lake sand, red sand-gravel, black lake sand, red sand-gravel. These strata varied from 3 to 18 inches in thickness. Most of the burials seem to have been in the black lake sand. Each was a separate interment without special surrounding stones or clay. Through the courtesy of Mr J. G. Hobbie, manager of the property, the objects found have become the property of the Western Reserve Historical Society, already custodian of Colonel Whittlesey's discoveries.

Frederic Louis Otto Roehrig, Orientalist and philologist, died at Pasadena, California, July 14. Professor Roehrig was born at Halle,

Prussia, June 19, 1819, and was graduated from the Universities of Halle, Leipzig, and Paris, receiving the degrees of A.B., Ph.D., and M.D. He came to the United States about 1853, serving successively as assistant librarian in the Astor Library, New York, 1853; professor of materia medica and therapeutics in the Philadelphia Medical College, 1858; acting assistant surgeon, United States Army, 1861-67; acting librarian U. S. Surgeon General's office, 1868; professor of Sanskrit and modern Oriental languages, Cornell University, 1869-85; director of the New York Polyglot Bureau, 1869; instructor in Sanskrit, University of Southern California, 1886; University lecturer in Semitic languages and Oriental philology, Leland Stanford Jr University, 1895. In 1869 Dr Roehrig spent four months among the Dakota Indians for the purpose of studying their language, some of the results of which are embodied in a paper published in the *Smithsonian Report* for 1871. He contributed also to the linguistic section of Powers' *Tribes of California*.

Dr Ainsworth Rand Spofford, formerly Librarian of Congress and for many years a member of the Anthropological Society of Washington, died on August 11. The twelve papers contributed by him before the Society dealt mainly with matters of timely interest and were the productions of a far-seeing publicist. They were dressed in faultless English, and their charming literary style, coupled with a musical delivery, made them singularly attractive to his hearers. Dr Spofford's papers in every sentence displayed the vast store of learning that he had acquired, and the master mind that winnowed and submitted to the judgment of his own knowledge all that came under his view.

W. H.

Mohammedan Malay traps. — Dr William L. Abbott has sent to the United States National Museum descriptions and drawings of the Mohammedan Malay pig traps (*jerat*) in great variety. The principle is that of the springe, but the victim must be caught by the leg or about the body. These Malays are not allowed by the Koran to maim or strangle game. The creature must be *hal al ed*, that is, it must have its throat cut *en regle*; while the Borneo Dyaks and the Siamese may use choking snares. This is an interesting example of culture-play in which the genius of invention has been stimulated by the foreign religion.

O. T. MASON.

THE degree of Doctor of Philosophy in Anthropology was conferred for the first time at the University of Pennsylvania in June, 1908. The recipient, Frank G. Speck, presented as his thesis *The Ethnology of the*

Yuchi Indians, a study containing the results of field work among the Yuchi extending over four years. Mr Speck received the degree of Bachelor of Arts from Columbia in 1904, and that of Master of Arts in 1905, and continued his studies in anthropology in the Graduate School at Columbia under the direction of Dr Boas. He entered the Graduate School of the University of Pennsylvania in 1907 as Harrison Fellow in Anthropology. He has recently been appointed instructor in Anthropology at the University of Pennsylvania, where he has now assumed his duties.

Not without ethnologic interest are the lists of books prepared by Mr George Parker Winship and recently published by the John Carter Brown Library of Providence, namely, "Books Printed in Lima, 1585-1800" (beginning with a *Confessionario en Quichua y Aymara*), "Books Printed in South America Elsewhere than at Lima before 1801," and "Books Printed at Lima and Elsewhere in South America after 1800." Most of the books in these lists were acquired by the founder of the library from Henri Ternaux-Compans.

CESÁREO FERNÁNDEZ DURO, president of the Royal Geographical Society of Madrid, died in June after a long illness, at the age of seventy-eight years. Retiring from the navy in 1875, Señor Duro devoted the remainder of his life to historical and geographical research, his most important production from an ethnological point of view being an account of the reputed journey of Don Diego de Peñalosa from New Mexico to Quivira in 1662, accompanied with a list of early Spanish manuscripts, bearing on New Mexican history and ethnology, from Spanish archives (Madrid, 1882).

RECENT word from Dr George A. Dorsey of the Field Museum of Natural History announces that he crossed afoot the island of Bougainville and had spent a month in Neu-Pommern, whence early in August he departed for New Guinea on his exploratory trip around the world.

MR EDWARD SAPIR, who received his degree of Doctor of Philosophy in Anthropology at Columbia this year, has been appointed Harrison Fellow in Anthropology at the University of Pennsylvania for the year 1908-09.

WE learn from *Man* that the Comité d'Organisation of the Congrès Internationale d'Anthropologie et d'Archéologie Préhistoriques has decided to hold the fourteenth session in Dublin in 1910 instead of in 1909 as originally arranged.

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THE MAIN FEATURES OF THE ADVANCE IN THE STUDY OF DANISH ARCHEOLOGY¹

By W. DREYER

Up to less than sixty years ago very little was known regarding prehistoric man. By "archeology" was meant, at that time, the study of Roman, Greek, Egyptian, and Phenician civilization. Beyond this the sober man of science hesitated to venture. That vast space of time in the history of man's development antedating written records, before any inscribed records whatsoever, was a playground for the imagination—the imagination that created the fairy tales and the myths. Here gods and demigods, giants and monsters, dwarfs and ogres, were allowed full play. Here were space and time for all that could not bear the strong light of the present or of the historic past. Here was placed that golden age to which man will steadfastly cling. Though he dare not hope for a future, here on earth, when the lion shall lie down with the lamb, yet he insists upon the darkness of prehistoric ages being illumined by rays of light from Paradise. And the poet seized this tempting material with a poet's cunning and a poet's license. He changed and added until childish myths and dark fables glittered with wisdom and beauty. He deepened that which was already deep, and adorned with a rich, profound, and mystic symbolism all that appealed to the imagination, all that was already veiled in parables, simple though not always easy to understand: a symbolism

¹Translated by Miss Elsie Warburg, and published originally in the *Saga-Book of the Viking Club*, this interesting memoir has been revised and is now made accessible to American students.

which gave to men's minds what they will ever desire — questions to answer and riddles to solve.

But the real riddle of the past was not solved, its difficult question was not answered; no one even tried in real earnest to do so. Learned men could not even view the childhood of the race dispassionately. They were too deeply entangled in the web wrought by priests and wise men through centuries of folklore and of ever-changing religions. True, the man of science knew that much of what was said and believed of the past was idealizing inventions; true, every now and then a gleam of light shone forth, but, on the whole, what met him when he turned to the veiled darkness of the past was not encouraging. Nowhere was there a distinct boundary between light and darkness; nowhere was there a separation of land and sea; nowhere could he trace a division of time or advance in development. All was chaos.

But, slowly and steadily, albeit quietly, a serious work had begun in this direction. One fine day the first light cast its flickering beam on the fogs and mists of the dark ages. From Denmark and Sweden its light shone forth to far-off lands, where answering beams arose, all having their origin in the little flame kindled in Thomsen's poverty-stricken museum in Copenhagen, and from Sven Nilsson's study in Lund.

What these men did was, to all appearance, not much — only the trisection of Northern prehistoric times into the simple divisions of the Stone, the Bronze, and the Iron Ages. But this was just what was needed, just as certainly as that the first thing that must be done to a large and chaotic collection of facts, whether historic or prehistoric, is to try to introduce some sort of order among them, founded on the chronological sequence of events.

It is certain that many before Thomsen and Nilsson had seen that man's development had passed from a Stone age to a Metal age; that there had been a time when the craft of metalwork was unknown, and that this time preceded the age in which metals were made into ornaments, weapons, and tools. But no one had endeavored to obtain universal acknowledgment of this truth, for no one had made a serious attempt to prove it by introducing order into the tales and by investigating the large collection of mytho-

logical fables. And no one had realized how important such a chronological division must be; even Thomsen and Nilsson can hardly have realized it in its entirety. What it means is simply this: The growth of mankind has been continuous. It has passed from dark to light; from brutality to gentler ways; from lower to higher stages in everything—in spiritual development, in morality, in religion. And the means to further this growth has been this, and this only: the energetic and untiring endeavor of mankind itself to obtain mastery over Nature, to learn her laws and to practise their use; to become master of all substances, to manipulate and use them in ever-increasing ways for the furtherance of man's innumerable aims. The object of the study of prehistoric ages must, therefore, be to grasp the tendency of all these efforts, so that we shall one day see the path along which the children of men have wandered clearly illumined before us in all its length and in all its windings.

The first step toward this goal was the trisection of the Northern prehistoric ages. For Thomsen and Nilsson did not only divide them into Stone and Metal ages, but they divided the Metal age at once into the Bronze and the Iron ages. Their hypotheses aroused great opposition, as all new ideas do: opposition not only from those who oppose every effort of science to shed light on darkness, but also from men of science. The point around which opposition after a time gathered was the division of the Metal age; all were very soon convinced that a Stone age had preceded that of Metal, not only in Scandinavia, but throughout the earth. But this served only to make the discussion as to whether a Bronze age had preceded the Iron age more bitter, especially as many tried to assert the same universality of this change as of that from the Stone age to the Metal age.

It was from Germany that the attacks on the Bronze age came. With wonderful persistency German men of science maintained that the use of iron *must* have been known before that of bronze; that the elementary metal *must* be older than the alloy, and that, therefore, the Bronze age was, and must be, a chimera. This discussion had great influence on the development of Northern archeology. For decades it forced its promoters to devote most of their work to

the support of the triple division ; it forced them again and again to rake up the question for renewed discussion, and always to seek new facts by the help of which they might successfully refute the continued attacks of the opposition. In this way a thoroughness was introduced into the work which has been extremely important. In Scandinavian archeology half-finished work, imaginings, and hasty conclusions are unknown. If such peep forth, they are promptly and completely suppressed. Tradition which, especially in Denmark, has descended from Thomsen through Worsaae to Sophus Müller has hitherto been strong enough to guard the banner.

In the seventies the strife at length subsided. The outcome was absolute defeat for the opponents of the Bronze age. The argument which was longest clung to in Germany by a number of men of science was that those decorations on the Northern bronze articles which were not produced by molding must have been made with tools of iron, perhaps even of steel, for nothing else would make the least impression on the hard bronze. Therefore iron, and even steel, must have been known in the so-called Bronze age, which, consequently, was in reality also an Iron age. To this the Danes for many years could make no reply other than that these decorations were not, and could not have been, produced with steel tools, as everything clearly pointed to the fact that these latter were unknown in the Bronze age. A goldsmith from Copenhagen — one Boas — solved the question. He was much interested in prehistoric metalwork, and often visited the Museum, where he was one day asked by Sophus Müller (now director of the Museum) for his opinion as to the decorations on the bronze articles. At first he said he could not imagine that they had been made by anything but steel-edged tools ; but on reaching home he decided to make experiments to test this question. The result was that the next day he showed a piece of bronze of the same composition as that of the Bronze age (90 % copper and 10 % tin), which he himself had decorated in the same style as the objects in the Museum with an instrument made of bronze — a small, hardened graving-tool. This ended the matter, and I mention it only because it is characteristic of the way in which Danish archeology works. The help which science has received from laymen in this direction is priceless.

Now, it is universally acknowledged that the development, at least in Europe and doubtless in the greater part of Asia, was in the following order: Stone, Copper, Bronze, Iron. For it has been proved that, in those places where it is most likely that the smelting of metals originated, a Copper age preceded the Bronze age, though this was probably of short duration, and there are very few traces of it in Scandinavia, where the craft of working in metal, and even the extraction of metals, was originally imported from other lands. The semi-civilized races of Central America seem to have been, even at the time of the arrival of Europeans on their shores, in a state of transition from the Stone to the Copper and Bronze ages. Nowhere have we found as yet any evidence that iron was known and used before copper. There are, of course, many races, including all the Negro races of Africa, which have passed directly from stone to iron, but that was due to the fact that this metal was introduced while they were still in the Stone age.

Though the Danish archeologists devoted so much time to the discussion of this question, they were still able to consider other questions. Side by side with this discussion there was another about the division of the Stone age, and this has been no less important to Danish archeology. The European Stone age is, as is well known, divided into the *Paleolithic* age, the age of the caves and river-gravel, an age in which nothing was known of *polishing* stone, and the *Neolithic* age, "*l'âge de la pierre polie*," as the French have unhappily called it. In the Paleolithic age Denmark can hardly have been inhabited. This was the time of the glaciers, in which the country assumed its present shape. It is just possible that it may have been visited by man in interglacial periods, but of that we have no proof. The whole Scandinavian Stone age is Neolithic, but in the early stages of it the polishing of flints was unknown. It is just this point that has been discussed for so many years. It was found at the very beginning of the search in the kitchen-middens of the sea-coast settlements in the early fifties, that in many of these there were neither polished flint articles nor any of the beautiful and delicately-made prehistoric objects which were so well known, having been found in large quantities in the surface soil and in the large dolmens. From this, and from several other things,

Worsaae concluded that the oldest kitchen-middens dated from an earlier period, in which the polishing of flints was unknown; whilst Steenstrup insisted that they represented only one special side of the life and culture of the Stone age, and that in reality they were contemporary with, and were made by, the same people that had erected the large dolmens, with their beautifully polished and finely carved stonework. Both views had supporters, and the strife continued—or, rather, flared up from time to time—till quite lately. It has ended, presumably, with the death of Steenstrup, and ended in the triumph of Worsaae's opinion. Many and detailed have been the investigations it has given rise to, but it has always been possible for those in favor of the division to refute their opponents' arguments. There was one particular implement found in the kitchen-middens around which, after a time, all the strife centered. This was the so-called triangular axe. Steenstrup's followers would not acknowledge these axes to be edged tools, much less axes, and then was asked, and rightly, "But where are the edged tools of that time? There must have been some, and until you can show them to us we must withhold recognition of your division." Well, after a time axes were discovered with marks of use upon them, and these always on that side which Worsaae rightly called their "edge," and one single specimen of them was found with the remains of a wooden handle attached to the side opposite to the edge, and finally it was practically demonstrated that they could very well be used to cut wood. This ended the discussion.

In 1886 I was fortunate enough to discover a very large kitchen-midden, hitherto unknown, situated by the little village of Ertebølle, in Himmerland, by the Limfjord. I explored it by myself at first, and afterward directed the attention of the archeologists to it. A commission of archeologists, geologists, botanists, zoologists, etc., was formed and sent to the place, where they have worked for several years, and examined a part of this, the largest kitchen-midden found in Denmark. When the results of the investigations so far concluded are published, it is to be hoped that the last doubts on the subject will have been disposed of, and that it will be proved that Denmark was inhabited before the art of polishing flint was known. Our archeologists will then have the task of locating this

period either in the Paleolithic or the Neolithic Stone age. It will most likely be shown to belong to a purely Scandinavian development, and it will probably also be proved that neither in England, France, nor elsewhere was the art of polishing stone known at the beginning of the Neolithic age, and that therefore the name "*l'âge de la pierre polie*" is most unsuitable.

Undoubtedly there was a time, extending over several centuries and lying between the old Scandinavian Stone age and that age in which cairns and dolmens were erected, in which there was an immigration of peoples, who brought with them polished implements of a Western European type; or a current of civilization must have proceeded from Western Europe and brought these implements to the country. For we find, especially in Denmark, very many pointed and sharp-edged axes of flint, many spearheads, etc., which are exactly like the English and French, but which are never or, at least, very seldom, found in our tombs.

We have here a period of which no burial places have been found (as is the case with the time of the kitchen-middens), but this period will be of vast importance to the correct understanding of our prehistoric times, as it forms in the first place one of the connecting links between Western Europe and Scandinavia, and in the second place the foundation for the great and peculiar development which the Stone age reached in Denmark.

Sophus Müller has succeeded in producing a reliable chronology of the Stone age—a space of time covering centuries, or even so much as a thousand years, must be capable of division. We must be able to distinguish between the ancient and the more modern, even in those times. The basis for such division must be sought, on the one hand, in the shapes of the graves, on the other hand in the different types of ancient implements; both have received the attention of Müller. As regards the graves, they start with the small square-chamber type, made of four stones with one flat stone on top. They gradually develop into the large "passage graves," consisting of roomy, in most cases oblong, chambers with entrance by a roofed and paved passage, which varies in length. Later these changed to stone cists, which gradually decrease in size, so that at the end of the Stone age we find them just large enough to contain the body in a recumbent position.

It was not wholly unknown that there was a group of graves in Jutland which differed greatly in character from the usual type of grave of the Stone age—the dolmen. They have been called "framed graves," because, as generally found, they consist of an oblong rectangular chamber framed by a single line of smaller stones. Very often the larger portion of this stone frame is missing, often the whole has disappeared, so that the grave can be traced only by the different color of the soil inside and outside of the grave chamber. These burial places are situated generally in the earth, not on the surface, and are sometimes covered by a tumulus. In the eighties, while working at the archeological discoveries in the Rinds and Gislum townships I called attention to the presence of such graves, whose chief distinguishing feature is that both the chamber and the coffin are missing, and that they are underground; but no research, either by myself or by others, was comprehensive enough to discover their real value.

When the Rigsdad voted an annual grant (a considerable one for Denmark) for a thorough archeological exploration of the country, and later on for the examination of the thousands of mounds scattered all over the country, most of which were already to a greater or less extent destroyed or disturbed, much light was cast on the subject by these investigations. Scores upon scores of these "framed graves" have been explored in southwest Jutland, whence they extend, though in more scattered numbers, north and east. Hundreds of them are marked by the round tumuli (generally quite small) covering them, and there must certainly be thousands which will be brought to light only by accident, because they are far below the surface, unmarked by a mound. It is likely that this kind of sepulture also was used outside of Jutland, at all events in Funen, where a certain kind of flint axe characteristic of the period is also found buried some feet deep. At any rate, the graves in Jutland form a large group by themselves, characterized not only by their arrangement, but by their contents, which consist almost exclusively of a certain late type of flint axes, of flint spear- and arrow-heads, also of a later date, and finally of battle-axes made of granite, sandstone, etc., generally extremely delicately made and bored through for the handle. Some of the finest things of this sort in existence

come from these "framed graves." We have from them relics of the latter part of the Stone age, which in a certain section of the country lasted so long that we can trace a definite development in it. But the origin of these articles must be sought for outside the country, toward the south and west. It is supposed that a tribe of people from those parts came to the country and wandered up the west coast of the Duchy of Schleswig, and of southern Jutland, or else that a regular trading road was formed there. Which of the two suppositions is right must be left to later discoveries to show.

In later years our previous ideas of the later Stone age of the North have been much broadened by research. Formerly it was thought that their culture was at a very low level, and that the people were hunters or fishermen without any knowledge of farming. It was known that it was not so in other countries, but it was long before any proof was found that even here in the North the people of the Stone age had domestic animals and tilled the ground. Without doubt, the people of the early Stone age lived solely on the proceeds of hunting and fishing, supplemented by the berries, fruits, and roots of the forest. But in the later Stone age, circumstances, even here in the North, had changed. Though we have not found a single bone belonging to a domesticated animal in those kitchen-middens in which are found no articles of polished flint, we find them in the middens of a somewhat later period. It has been shown that as early as that period marked by polished flint—animals of a Western European type—sheep and most likely oxen were kept; it is practically certain that in the time of the big stone sepulchers, of the "passage tombs," both goats and pigs were introduced, and most likely horses as well, so that even the people of the later Stone age knew and kept practically all the domestic mammals now known in Scandinavia. Dogs had been brought in by the first immigrants. In the cairns, and those kitchen-middens contemporary with them, are found bones of the domestic animals I have mentioned, and often also those of wild animals, sometimes shaped into implements.

But agriculture was also pursued in some degree, at all events toward the end of the Stone age. We come to this conclusion partly because we have found—sometimes even in the graves—the large stones, hollowed by friction, which were used here, as

everywhere else in the world, for grinding corn; partly because some of the corn, curiously enough, has been found preserved. Thus, a Jutland schoolmaster called attention to the fact that he had found some grains of wheat (now turned to coal), besides the impression of others, baked in the clay of which the vessels of the Bronze age were made. This gave the impetus to many investigations, by which it was shown that even in the clay vessels of the later Stone age these grains were found, though only of wheat; while in the vessels of the Bronze age grains of barley and millet seed were found as well, but no rye. Finally, in 1899, a most interesting discovery was made in a swamp, consisting of a sickle with a blade of flint and a handle of wood. This may well have been intended and used for harvesting grain. At any rate wheat must have been grown at the end of the later Stone age. As yet we do not know how far back the art of agriculture dates, perhaps it was even known at the beginning of this period, but certainly not in the earlier Stone age. Many things lead us to suppose that millet also was grown in the Stone age, although as yet we have no proof.

We must therefore correct our ideas about the Scandinavian people of the later Stone age. They were not savages who obtained from Nature a precarious existence by means of fishing and hunting. They were a comparatively civilized people who tilled the ground and bred many domestic animals, although they fished and hunted as well. They were undeniably expert in many arts (the making of clay vessels, stone carving, wood carving, etc.); they produced wonderfully well-made weapons and tools, and in great variety; the division of labor was fairly even; they had fixed residences, commercial intercourse, a religion whose standard was not low; their sense of beauty was great, as is shown by their ornamentation and the beautiful shapes of their weapons, which are sometimes almost refined in form. In short, they had attained a definite stage of civilization.

Thus we see that, in the last decades, much has been done by Danish archeologists to determine the conditions of our Scandinavian Stone age. And the same has in no less degree been done for the Bronze age. All investigators were obliged to occupy themselves

for some time solely with this period, and that has, of course, borne fruit.

One question that has been raised is still unanswered. It is this: Was the passage from the Stone age to the Bronze age in Scandinavia due to the immigration of a new race of people or to the regular currents of civilization without any immigration? The scarcity of objects that could be attributed to a transition stage point to the first solution, but the regular continuation into the early Bronze age of the method of burial peculiar to the later Stone age (stone cists with one recumbent corpse, not cremated) points to the second, or, at least, indicates that the immigrants were very similar to the original inhabitants in manners and customs. But it is quite clear that throughout the whole of the Bronze age there was commercial intercourse with southern countries, at first with the lands around the eastern Danube and Hungary, later with Italy. In this way much bronze and gold was brought to Scandinavia, most likely in the form of weapons, ornaments, and tools, which were, of course, melted down after a time to be remade according to the taste of the period. Comparatively few of the foreign-made articles have survived; among them are some originating in England and France, with which countries, there must, therefore, have been communication. The means of exchange in Denmark in all probability was, first and foremost, amber, which, though found in such imposing quantities among our relics of the Stone age, seems to have quite disappeared in the Bronze age—it was, of course, exported.

The Bronze age in Scandinavia extended over a long period; indeed, it is strange how long it took for iron to make its way. As a result, the Bronze age reached a higher state of development in Denmark than anywhere else on the face of the earth. This is what gives to this period its extraordinary scientific importance. For eight or ten centuries bronze and gold were the only metals known in Scandinavia. Such a long period must be divided into shorter periods, and it must be ascertained what belongs to an earlier or a later period, what is beginning and what is end. Here also a great work has been performed. In 1859 Worsaae divided the period into an earlier and a later Bronze age, having as early as 1843 come to the conclusion that those bronze articles which were decorated in spirals were the oldest.

It may be thought that such a common, simple, and elementary decoration as the spiral was rather a slender basis for such an important decision. Yet it is not found in our Stone age; it appears very often in the Bronze age, and can be traced through the east of Central Europe to the countries around the eastern Danube; to Mycenæ and Egypt; and it is a proof of Worsaae's penetration that he so quickly became aware of its importance. After a time there was seen to be a sharp division between two groups of bronze articles, an earlier and a later, and the division between the periods to which they belong is almost contemporary with a great alteration in the burial customs: the transition from the burial of unburnt corpses to cremation.

Throughout the Bronze age there is a clearly traceable development in the shapes of the graves. On the whole, those are the oldest which contain unburnt corpses, in stone cists or under heaps of stones covered by mounds, which are often of great size.

Contemporary with these are the famous graves with oak coffins, which have given us such priceless information about the manners and customs of the earlier Bronze age; about the costumes of men and women; about the way in which weapons and ornaments were worn, etc. We know, by this means, that the men did not wear beards; and by a minute microscopical inspection of the well-preserved locks of hair, it has been demonstrated that the race was fair.

Occasionally we find, in graves of the same shape and size, burnt bones, which point to a new way of treating corpses, namely, by cremation; and this finding almost marks the boundary-line between the early and later Bronze age. But a few burnt bones do not require a large grave, and so, gradually, the graves diminish in size, as do also their accompaniments. Very soon the custom arose of burying the carefully collected bones in a clay urn specially designed for the purpose, which also contains the small objects of bronze or bone which are buried with the corpse. These urns, surrounded by stones, are placed either in the old mound or in a new and smaller one on the top of it; they are also found singly in fields, or in large quantities in a graveyard.

Outside of the graves have been found many unused articles, both weapons and household implements belonging to the Bronze

and the Stone ages, which we presume must be hidden treasure or commercial stock ; some of them must also have been votive offerings and some intended as gifts, hid during the lifetime of the person in hope that they might be of use to him or her in the hereafter. In such ways the value of the grave-goods, so poor in the later Bronze age, is enhanced. The votive offering often consists of weapons, such as seven axes, thirteen spearheads, etc., which we must presume were buried in fulfilment of a promise to the gods, as a thankoffering for preservation in danger or illness, etc. It is a curious fact that this group of finds always, or almost always, presents objects of one kind, to wit : all spear-heads or axes, knives, etc., but rarely a mixture of different kinds of objects, as spears, axes, knives, etc.

Sophus Müller has proposed to divide each of the two divisions of the Bronze age into two, based on the differences in the decorative work ; but the typical differences will necessarily be less well defined, and the transition stages more vague, the shorter the periods into which the time is divided.

Among the detailed investigations pertaining to the Bronze age must be mentioned those to which the well-known "lurer," or war trumpets, have given rise. In the peat-bogs of Denmark and southern Sweden many large and beautiful trumpets have been found, a yard and more in length, and made of bronze. They are very thin, and made in several pieces, afterward fastened together ; they are richly ornamented, and often have chains and small pieces of brass attached. They are always found in pairs, which are seen to belong together owing to the bend in one of the pair being always in the opposite direction to that in the other ; in one case no fewer than three pairs were found together. Much was spoken and written about these instruments, but to little effect until the composer, Hammerich, examined them to find their musical powers and value. The six that were in the best state of preservation were restored, only very slight repairs being needed, and it was found that they were in excellent working order and really perfect.

Many carefully calculated peculiarities of shape and work contributed to give them a mildness and softness of tone, which was, nevertheless, powerful. Each pair is carefully tuned together, the

notes being C, D, E₂, E, and G. The instrument was held upward when played; in this position it is well-balanced, and the sound is carried to the audience. The notes are the so-called "natural notes," which are produced only by the lips. The register contains 12 notes in 3½ octaves; if the harmonic notes in the bass are included, it is increased to 22, but we, of course, do not know whether all were known in prehistoric times. The tone of the instrument is very much the same as that of a bassoon; as they are found in pairs tuned together, there is reason for supposing that they were used together. This is, quite briefly, the chief result of Hammerich's investigations; it is surprising that, at so early a period, we in Scandinavia had such highly developed musical instruments. But it agrees very well with our present knowledge of the Bronze age and its people. We knew that the people of the later Stone age had a comparatively high state of culture; we can, therefore, hardly call it surprising that we have found that the Bronze age was still farther advanced. It is an obvious result of the investigations of modern times that we have realized that the Scandinavian Bronze age was a period of extraordinary development, a period hitherto undervalued. The people bred cattle and were agriculturists. We have already mentioned the domestic animals and kinds of grain known to them. They had fixed dwelling-places, and cleared large expanses of forest. It is shown by the fact that the large groups of tumuli found all over the country are so often gathered around the sites of modern villages, that many of the latter were actually founded in the Bronze age. Long rows of these tumuli are also found stretching for miles across the heaths of Jutland, where they are in the best state of preservation. They often either begin or end at ancient fords, and there is no doubt that they ran by the side of old paths or roads. These, of course, followed the habitations, so that we can trace the course of the builders by means of these tumuli.

It is easy to show that the people of the Bronze age were commercial and seafaring men. The steady influx of metal must be due to commerce. It was paid for in amber, and perhaps also in hides and grain, and such things. Shipbuilding was fairly well developed; canoes hewn out of oak logs were no longer sufficient. On many bronze implements, especially razors, and on a certain kind of large

neckrings, we find engraved seascapes, showing us large vessels with a keel and a prow rising high from the bow which makes the vessel look as if it had a double prow. We find these ships again in the figures of the so-called *helleristninger* (rock-carvings), carved or scratched on large isolated stones in Denmark, and far oftener on the faces of cliffs in Bornholm, Sweden, and in southern Norway (fig. 110). But so far we had found no boat preserved from that remote time. Great therefore was the rejoicing when a few years ago a large num-

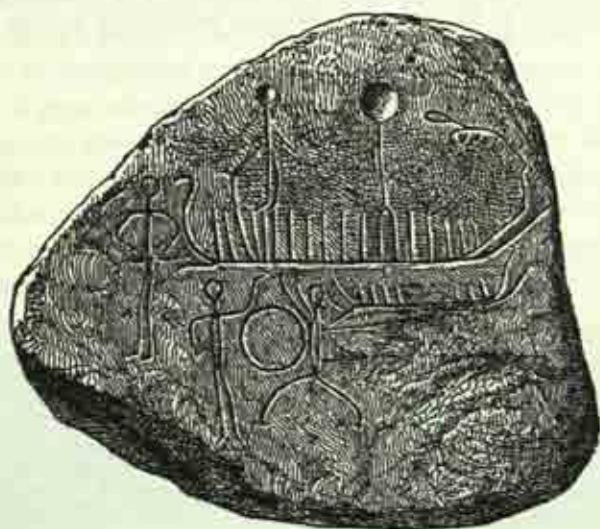


FIG. 110. — *Helleristninger*, or Rock-carvings. (Scale about $\frac{1}{2}$.)

ber of small models of the boats or ships of the Bronze age were discovered. Buried in a clay vessel were found more than one hundred small boats a few inches in length, made of thin gold sheets, beaten out with the help of bronze tools (fig. 111). It was clearly shown that they had, in the Bronze age, good seagoing vessels, built of laths fastened together with wooden pegs. The hoard must be considered as belonging to the aforementioned class of votive offerings. The gold boats must have been given or sacrificed to the gods as a thankoffering for success in battle, or a danger surmounted, or some such thing; either all at once or at different times. Perhaps here was the shrine of a god of the sea.

Industry had also reached an advanced stage. The art of working in bronze was highly developed; even now we cannot mold so finely or thinly as they did. The "lurer" and many of the bronze vessels must arouse the admiration of all who know anything about metalwork. Soldering was unknown; if an article of bronze was injured, they tried to repair it with melted bronze, or by putting on a thin plate. The rich ornamentation is executed with finished skill. We learn from various facts upon which we cannot here enter in detail that this industry was highly developed. For example, the textile fabrics found in the oaken coffins are beautifully woven, and to-



FIG. 111. — Gold Vessels of the Bronze Age, including some of the Tiny Gold Votive Boats. (Scale: Gold cups, $\frac{1}{2}$ to $\frac{3}{4}$; vessel with handle, $\frac{1}{2}$; gold boats, $\frac{1}{4}$.)

gether with them are found finely knotted hair-nets, and caps with an outer layer of some tufted stuff; it has been found impossible, hitherto, to discover how they were made.

Our knowledge of the time is, of course, fragmentary, and will always remain so; we know little of the undoubtedly highly developed craft of woodcarving; still less of the arrangements of their

dwelling, etc., but we have discovered enough, especially during the last decades, to make us respect the people of the Bronze age. Their weapons, ornaments, and tools, the shape and ornamentation of which are highly artistic, say much for their sense of beauty. The votive offerings, the grave-goods, show that they had a religion; a belief in gods and in a life after death; it is most probable that they had a more or less developed mythology, and many tales. The "lurer" testify to their being musical, and among a people who had cultivated and understood music so well the poetic muse cannot have been wanting. Writing was unknown, but the rock-carvings must be considered as a sort of pictorial writing, by which the memory of great men and great deeds was preserved to posterity.

The result, then, of Scandinavian research into the Bronze age is this: We now have a thorough outlook over the time, over its culture, the process of development, etc.; and, above all, we can with justice maintain that hardly anywhere else on earth has the culture of the Bronze age reached so high, so rich, and so peculiar a development as here in the North.

We have trespassed for so long on the time and patience of the reader, that we must be brief in our account of the Iron age, though there is much in it that is new and interesting.

Many years ago Worsaae showed that the Iron age could also be divided into, at least, "the earlier" and "the later." But subsequent investigations have shown that, at all events in Denmark, there are more and well-marked divisions:

1. The Pre-Roman, or so-called "Celtic" period.
2. The Roman Iron Age.
3. The Age of the migrations.
4. The Post-Roman Age.
5. The Age of the Vikings.

It is presumed that the Bronze age superseded the Stone age about 1,200 years before the commencement of our present era. Iron superseded bronze about 800 years later, so that we now place the commencement of the Iron age at about 400 B.C. We have found, very rarely, a small ring, a pin, or a knife of iron from the latter part of the Bronze age; but such finds are merely forerunners. The appearance of iron implements in any great number

coincides with the introduction of an entirely new style and shape of antiquities. The question as to whether this was owing to the immigration of a people to whom the use of iron was known, or to the importation of a new civilization, is still unsolved.

The whole character of the oldest iron articles, as well as those of bronze and gold of the same period, and the clay vessels contemporary with them, are of the so-called "Celtic" pattern, though with certain modifications that show that the imported patterns were altered (at least to some extent) to suit Scandinavian tastes.

The Celts, whose last descendants have been driven to the western extremities of Europe—to Ireland, Scotland, Wales, and Brittany—lived, in the last centuries before Christ, in central Europe, whence their influence reached Scandinavia, and was strong enough to end the Bronze age. The Iron age does not betoken a revolution in Scandinavian civilization. The change consists in the gradual superseding of bronze by iron in weapons, implements, and ornaments, and a consequent change of taste. People continued to use bronze, but "zinc bronze" (brass) instead of "tin bronze." The burial customs remained unchanged, at all events at first, and cremation continued to be the rule; our burial and "fire spots" (bones and coal from the pyre buried in a hole) continue through the earlier as well as the later age; but it became more usual for the graves to be gathered in one large space, either under a very low mound or with none at all.

The very earliest stage of our Iron age became known to science only by the explorations of Mr Vedel, a high government official in Bornholm, whose investigations are among the most admirable and thorough in the history of our archeology. Thousands of "fire spots" were excavated, together with small low mounds built of stones (*råser*) belonging partly to the later Bronze, partly to the Iron age. From among these Vedel speedily separated some, in which were found a very few and badly preserved antiquities differing from all others previously known. Similar ones have since been found in other places, particularly in Jutland, while the great Danish isles seem only to have been slightly affected by this advance of culture; the Bronze age seems to have continued there a century or two longer than in other parts of Denmark.

Those modifications in style which are also found in northern and central Germany at a corresponding period are soon lost; a home style is adopted, founded, however, on the imported one.

The "Celtic" Iron age in Denmark is still far from being so well known to us that we can see and comprehend it at a glance; we shall, therefore, not dwell long on it, but merely mention the chief discovery: the wonderful carts from Dejbjerg Mose in western Jutland. A few "rock-carvings," and a single small cart of bronze, on which a large bronze vessel was placed (for use in a temple or at the festal board of a chief), showed that carts were not unknown in the Bronze age. But no one thought that immediately after its close the people of the Scandinavian North were in possession of a conveyance so technically perfect, comparatively speaking, as the "Dejbjerg" carts, one of which, in a restored condition, is exhibited in the National Museum in Copenhagen, and is considered among that museum's chief treasures. These carts had four wheels, with nave and rim of ash. The latter was in one piece, which was bent round while in a state of heat, and covered with a heated tire. The sides, the shafts, etc., are of ash, richly ornamented with bronze, the ornamentation being of a foreign pattern, consisting also, in part, of human faces made of bronze. In the midst of the cart is a square stool, in which the chief, or, may be, the idol, for whose use it was intended, had his seat. They were arranged for two horses, which were harnessed by means of a yoke. Without doubt the workmanship (which is splendid) is Scandinavian, though the style is the so-called "Celtic."

Gradually, as the power and might of Rome increased, Celtic culture and the Celtic race had to bow before her, and soon we can trace the influence of Rome in the North, whither, however, as is well known, her political power never extended. The Celtic age was superseded, about the time of the birth of Christ, by a Roman, or rather an age whose style was strongly influenced by Roman culture, and in which Roman manufactures were largely imported. At the time when the Germanic tribes crossed the borders of the Roman Empire, classical imports and influence still continued, but the age was characterized here in the North by the influence of Germanic style, and therefore the time of the migrations in the third, fourth, and fifth centuries forms a special period by itself.

Within the last few years we have made two discoveries concerning this period: one in Jutland relating to the older Roman period, and one in Zealand relating to the time of the migrations, both characterized by their graves. In Jutland we have a group of graves from the Roman time, the so-called "urn-graves," to which, among others, I called attention in the eighties. We find in mounds, or buried in level ground, large cists made of slabs of stone, sometimes covered with one or several big stones, but generally open. At first glance they resemble the dolmens of the later Stone age, but



FIG. 112.—Clay Vessels from Jutland Graves.

there are peculiarities in their building which make it easy for us to distinguish them from these, even without reference to the burial accompaniments. The bodies are generally unburnt; they evidently belong to a period when cremation was giving way to burial; but the bones are generally decayed, because, as stated, most of the graves have not had any stone or slab cover, and are filled with earth. Generally there is only one body in each cist, and there are very few antiquities—nothing but a pin or ring of iron, or a knife of the same metal. But, by way of compensation, the departing one was given a whole set, as a rule, of beautifully finished clay

vessels, small and large, many of which are still unbroken — evidently a selection of household vessels, filled with meat and drink for the use of the deceased on his way to the other world (fig. 112). I have found as many as from twelve to fourteen unbroken vessels in one grave. There are often also heaps of broken ones, placed either in the coffin or buried quite close to it. There are great quantities of them: very often sherds of a score or more vessels, and yet the pieces never make up one single whole vessel. There seems to be no other explanation of this than that all the vessels, used at the funeral feast must have been destroyed, and some of the pieces gathered and buried with the departed, as a sort of memento of the great feast. In my collection I have a great many pots from these "urn-graves," mostly of delicate shapes borrowed from Roman metal urns, and beautifully ornamented. Similar urns are found in great quantities in the large burial places of the same date in Funen, where, however, cremation was still the rule.

The other group of graves is the so-called "skeleton graves" from the islands, especially Zealand. When digging in level ground skeletons are often turned up, buried from three to four feet down, generally several close together, but the groups are always very small. Very often there are no antiquities with them, but sometimes these small burial places have yielded an astonishing number of these, partly of Roman, partly of Germanic origin. Rich finds have been made, especially at Nordrup, near Ringsted, and Valløby. There are gold and silver objects, especially rings and wonderful buckles; bronze vessels; beads of glass and mosaic, but, above all, some especially beautiful and unique glass vessels, which make the "skeleton graves" famous and are peculiar to them. The name shows, of course, that the bodies were unburnt. The glass vessels are, in some cases, ornamented with artistically executed raised figures in colored glass, representing men and animals in the arena. Gladiators, bulls, lions, and tigers are seen in bold relief; the movements depicted are true to nature, and, strange to say, the vessels, though the workmanship is undoubtedly Italian, have rarely been found outside of Denmark.

From the time of the migration also date all the discoveries in the bogs — the Nydam and Thorsbjerg finds and others. They all

point to great battles, either intertribal or against invading tribes, whose manners and customs must, however, have been similar to those of the natives. It was supposed that the victors collected the spoils of war and sunk them in holy lakes or at the heads of the fjords as an offering to the gods.

But since Sophus Müller's latest investigations a different conclusion has been reached. The things cannot have been sunk in water, as is shown by the condition of the surrounding peat and of the articles of wood. They must have been left lying on the field

of battle, an open spot in the forest (a forest since become a marsh), or have been collected in a heap on the ground in the vicinity. After a time the bog has covered them; probably the local stream and surroundings have changed in course of time, so that the growth of the peat has been more rapid. It is not certain that this explanation holds for all cases, but it does for some. But the character of the discoveries is not changed. It is still possible that they are articles given to the gods as a thank-offering for victory.

The most wonderful antiquities that have ever been found in the Scandinavian North are the famous Schleswig gold horns which, unhappily, were stolen and melted down at the beginning of the last century. Heavily have all of us who take an interest in the early history of our country felt this loss; so much the more as the pictorial representations that so richly adorned them were unique, and there existed not even a rubbing of these.

There was, therefore, great joy when, a few years ago, it was announced that an article in the style of the gold horns had been found, just as rare and peculiar as these, though of a baser metal of less value (fig. 113).



FIG. 113. — One of the Gold Horns from Schleswig, with Runes. "Ek Hlewagaster Holt-ingar Horna Tawiðo" (I, Hlewagaster of Holt, made [?] the Horn). (Scale, about $\frac{1}{4}$.)

The big silver vessel, now already world-renowned, from Gundestrup marsh in Jutland (fig. 114), was a unique, and, to science, an invaluable discovery. It was found in pieces in a peat-marsh; the silver plates, of which the upper part consisted, were laid in the bottom of the vessel. It is richly decorated, partly with large, bold figures of men, gods, animals, etc., some of which make up pictures of processions, sacrifices, and hunting scenes. The lower part thus represents an ancient urus hunt, while the outer plates of the sides



FIG. 114. — Silver Bowl found in Gundestrup Marsh. (Diameter $26\frac{1}{2}$ cm.)

each represent a large head of a god or goddess, and the inside ones are covered with pictures, some of which are difficult for us to understand. Unquestionably the vessel dates from the time of the migrations; the figures are partly of classical origin, but barbarized; doubtless the influence was Gaelic. The evidence points to the fact that Gaul was the place from which were drawn the chief features in the style, etc., if it be assumed that it was made here in the North. Nothing further can be said about it at present, though of course conjectures, more or less fantastic, have not been wanting; among these, that of Professor Steenstrup, who endeavors to trace

its origin to the Buddhist regions of central Asia, is the most fantastic and improbable.

At the time of the migrations an ornamentation, founded on imported pictorial representations, and consisting of figures of animals, began to develop in Scandinavia. This continued and was further developed in the subsequent period, "the post-Roman," which is marked by the gradual rise of a style peculiarly Scandinavian, which continued to hold sway till well into the Middle Ages. Sophus Müller and Professor Wimmer especially have within the last few years produced important works concerning the post-Roman and Viking periods. The former has written the history of animal ornamentation, and shown how it arose and developed in Scandinavia, how in time new impulses were brought to it from England and Ireland, from Carolingian France, and even from Byzantium; how these importations influenced it, how it adopted them and changed them according to requirements, and how from time to time it stiffened and sterilized, only to reawaken into new life and power.

Wimmer, on the contrary, devoted himself to the task of deciphering Runic stones and Runic epitaphs, a field in which his work has been of great importance. However, very little of moment has been discovered about the last period of prehistoric times, that is to say, the Viking period, or the time just preceding it, at least in Denmark. We are poor in relics from that time in comparison with Norway and Sweden; Bornholm alone has yielded anything of importance in this direction. Recently, however, parts of Denmark, and especially Jutland, are contributing evidence; here one thing, there another. One special discovery has been made, namely, a few graves from this period which were hitherto lacking. Christianity was introduced earlier into Denmark than into the rest of Scandinavia; up to a certain point this would explain the scarcity of relics and antiquities from the close of these times, but it was, and is, a riddle, what has become of the riches which the Viking expeditions brought to Denmark, and where the graves of that period are. Would that time and patience might solve this, as they do so many other riddles.

Here I will close. Dare I hope that the reader has received the impression that we in Denmark, as throughout the Scandinavian

North, have labored hard and ceaselessly to shed light upon our early history? Our Parliament has liberally voted money for surveys, investigations, and excavations throughout the country, and for the preservation of relics discovered; also for purchases to enrich the collections in the National Museum at Copenhagen and in provincial museums, as well as for the acquisition of many large and important private collections.

The inhabitants all over the country have, on the whole, assumed an attitude favorable to archeological research. Permission to excavate mounds, graves, kitchen-middens, etc., has generally been willingly accorded. A great proportion of the non-excavated mounds, numbering altogether more than two thousand, has been *given* to the State, sometimes even by poor cottagers. The larger collections have been endowed with many valuable finds made by private people, and many extraordinary objects have been saved from destruction by the sensible and careful proceedings of laymen. It is becoming more and more the general practice when, in digging, articles of value are brought to light, to stop work until scientific assistance is forthcoming in order to secure the proper superintendence of the operations.

Throughout the country are now scattered many public collections, and a very large number of private collectors have assisted in saving much that would otherwise have been lost. Public and private collectors have in general worked well together, and it is seldom that the National Museum does not obtain whatever it wants.

Last, but not least, our archeologists have, as I have striven to show, worked hard and persistently, following in the footsteps of their great forerunners, Thomsen and Worsaae. To them, before all, we owe the fact that the prehistoric times of Denmark are uncovered to us and more clearly illumined than, I suppose, is the case in any other country. It is to them we who love our country and its memories owe an inestimable debt of gratitude.

Since the writing of this brief essay Danish archeologists have by continued explorations brought to light different facts which would indicate that Denmark was — even if sparsely — inhabited at a time preceding the "Kitchen midden period," namely, during the

so-called "Ancyclus epoch" when the Baltic was still a lake having its outlet through rivers situated where the belts and sounds now are. A large find in a bog near Mullerup, in the western part of Zealand, not far from the Big Belt, seems to indicate that those people whose remains we find in this dwelling-place were living on timber rafts in the lake which at the time covered the ground now taken up by the bog; also, that they made less use of flint and other stones for weapons and instruments than of wood, bone, and horn. The great number of elks' bones and horns found seems to indicate that the find is *older* than the oldest shell-heaps, and from the kinds of wood found it appears that *pine* was the prevalent forest tree. There were discovered at the same place a series of types of bone harpoons, horn axes, and similar objects, which up to that time were known only as individual finds in peat-bogs, at the bottom of lakes, and in similar places, and which, consequently, now prove to belong to a period of the Paleolithic age that has, so far, been overlooked.

Of reindeer no trace was found in the Mullerup marsh, and we have as yet no proof that man had come to Denmark and the rest of the Scandinavian North during the first post-glacial, arctic epoch; but it would hardly surprise any Scandinavian archeologist if continued explorations should prove man here also to have been the contemporary of the reindeer.

RESEARCH IN VIRGINIA FROM TIDEWATER TO THE ALLEGHANIES

By DAVID L. BUSHNELL, Jr

I. HISTORICAL SKETCH OF THE INDIANS FROM THE DISCOVERY OF THE VALLEY, IN 1716, TO THE CLOSE OF THE FRENCH AND INDIAN WAR, 1763

Alexander Spotswood, Lieutenant-Governor of the Colony of Virginia, and a party of friends, with four Meherrin Indians as guides, left the small frontier settlement of Germana, on the Rapidan, August 29, 1716, to begin their memorable journey over the mountains to the unknown country beyond. They crossed several spurs of the Blue Ridge, then descended into the valley and forded the Shenandoah; but soon they turned back, reaching Williamsburg on September 16.

The mountains in the southern part of Virginia had already been crossed some years before;¹ but the fertile valley of the Shenandoah had remained undiscovered until the journey of Spotswood.

One early writer states that² "in the Year 1714, he [Spotswood] went in Person, and, with indefatigable Labour made the first certain Discovery of a Passage over the great Mountains." . . . This either refers to a previous journey or is an error in regard to the date, probably the latter.

Soon settlers penetrated to the country beyond the Blue Ridge, and gradually the frontier of Virginia was pushed westward. In 1734 Orange county was formed to embrace all the lands, without definite bounds, extending westward from what is now known as the "Piedmont" district, between tidewater and the mountains. On November 1, 1738, the county of Augusta was established

¹ "Discoveries Beyond the Appalachian Mountains in 1671," *American Anthropologist*, N. S., vol. 9, no. 1, pp. 45-56.

² Sir William Keith, *History of the British Plantations in America*, part 1, London, 1738, p. 173.

to include all the vast territory extending from the Blue Ridge to the Mississippi.

Jefferson,¹ in his classification of the native tribes of Virginia, refers to "the Massawomees, a most powerful confederacy, who harrassed unremittingly the Powhatans and Manahoacs," and gives as their habitat the region extending from beyond the mountains to the Great Lakes. The name Massawomees, or Massawomecs, was derived from Smith's map and writings, and refers to the Iroquois; but instead of the region referred to having been occupied by a single tribe, it was probably frequented by many.

The valley of the Shenandoah was undoubtedly the scene of many encounters between the different tribes in the days before its discovery and settlement, and it is said "the two principal non-resident tribes who frequented this fine country 1716-1745, were the Delawares from the North and the Catawbias from the South. At the time Augusta was settled, 1732, a bloody war was progressing between these tribes, and the Valley was the theatre of action." . . .² Some have referred to the Iroquois as the northern tribe then at war with the Catawba; but it is probable that the two tribes, the Delawares and the Iroquois, were united against their common enemy.³

The year that Augusta county was formed was marked by trouble with the Indians along the western frontier:

"At a Council held at the Capital [Williamsburg] the 26th day of October, 1738.

"Mr. Thomas Howard having been sent to the Allaganie Indians upon occasion of the murders committed by the Indians last summer on the People settled beyond Sherrando [Shenandoah] this day made Report

¹ *Notes on Virginia*, Philadelphia, 1794, p. 136.

² J. Lewis Peyton, *History of Augusta County, Virginia*, Staunton, 1882, p. 8.

³ Governor Keith, in 1722, "being informed that the young Men of *Conestogo* were going out to War, he thought it necessary to hold a Conference with those Indians; and accordingly going to their Town, called a Meeting of the Chiefs of the *Mingoets*, the *Shawanees*, and the *Ganawoy* (Conoy) Indians, . . . In the Close of his Speech he informs them of the News he had heard of their going to War, and absolutely forbids them to go." . . . To this the chief replied "that tho' their Warriors were intended against the *Catawbias*, yet as the Governor disapproved of their going they should be immediately stopped." ([Thomson,] *An Enquiry into the Causes of the Alienation of the Delaware and Shawanees Indians*, London, 1759, pp. 7, 8.)

of his Negotiations there and brought in writing an Answer from the said Indians, wherein they alledge that the said Murther was committed by the French Indians living on the Lakes."¹ . . .

This is probably the earliest reference to the Alleghany Indians, a term used to designate the Delawares and Shawnee living on, or about, the Alleghany river. But it is not possible to identify the tribe, or tribes, to which they referred as the "French Indians"; they may have been Iroquois, Hurons, or some Algonquian tribe living farther west.

During the same year *The Virginia Gazette* contained various references to murders committed by the Indians along the frontier of the colony.

Some four years later, on December 18, 1742, a party of Iroquois, on their way southward to attack their inveterate enemies the Catawba, were met by a number of settlers, and during the fight that ensued many were killed or wounded on both sides. "The true history of this fight is of considerable historical importance, because it was the first battle of which there is record between the whites and Indians in all the vast territory then belonging to Virginia west of the Blue Ridge. . . ."²

By the year 1750 the frontier posts of the colony were some distance beyond the Shenandoah, and Jackson river, or, as it was then called, "Jackson's river," which together with the Cowpasture or "Wallawhutoola" form the James, was evidently the accepted boundary between the settlements and the Indian country.

To prepare against the expected attacks by the French and Indians from that quarter, a chain of forts, or blockhouses, were erected along the border. One of the most important of these was Fort Dinwiddie, which stood on the right bank of Jackson river less than a mile above where the Warmspring and Huntersville turnpike crosses the river, in what is now Bath county, Virginia. Until a few years ago it was possible to trace an underground passage that led from the blockhouse to a spring within the stockade; but now it is no longer visible.³ Washington, while on a tour

¹ *Virginia Magazine of History and Biography*, vol. XIV, no. 2, Oct. 1906, p. 116.

² *Virginia Magazine*, op. cit., vol. XIII, no. 1, July, 1905, pp. 11-12.

³ J. A. Waddell, *Annals of Augusta County*, 2d ed., Staunton, 1902, p. 137.

of inspection, once visited the fort and referred to it in a letter to Dinwiddie, a part of which is here given :

" WINCHESTER, Saturday, Oct'r ye 11th, 1755.

" In a journey from Fort Cumberla'd to Fort Dinwiddie, which I made purposely to see the Situation of our Frontiers, how the Rangers were Posted, and how Troops might be dispos'd of for the defence of the Country. . . . "

And three months later Washington again wrote to Dinwiddie, dated from " Alexandria, Janua'y 13th, 1756," at which time he referred to the building of other forts —

" which will be a means of securing near 100 Miles of our Frontier, exclusive of the Comand at Fort Dinwiddie, on Jackson's River, and, indeed, without a much greater number of Men than we have a visible prospect of getting, I don't see how it's possible to think of passing the Mountains or acting more than defensively. . . . "

And that the fort was deemed one of the most important of the colony's defenses, was shown July 27, 1756, when it was ordered that its garrison should be sixty men, with one exception the largest number allotted to any of the frontier posts.¹

During the year 1753, emissaries are said to have come from the tribes beyond the Alleghanies to persuade the Indians then in the valley of the Shenandoah to cross the mountains and join them along the Ohio. In 1754 all the valleys of the Blue Ridge were deserted and nothing more was heard of the Indians during that or the following year.²

Crossing the mountains and entering the Ohio valley they had met the agents of the French, by whom they were soon claimed as allies in the war that was about to be waged against the English colonies.

On January 2, 1756, Lieutenant-Governor Dinwiddie addressed a letter to Governor Morris of Pennsylvania, which throws much light upon the condition of affairs among the frontier settlements at that time. A part of the letter reads thus :

¹ The Official Records of Robert Dinwiddie, *Virginia Hist. Soc.*, Richmond, 1884, vol. II, p. 236.

² *Ibid.*, p. 315.

³ Waddell, *op. cit.*, p. 136.

⁴ Thos. Bruce, *Southwest Virginia and the Shenandoah Valley*, Richmond, 1891, p. 198.

"Some time since the Cherokees sent four of y'r Warriors to me assuring me of y'r steady F'dship to y'r Bros., the Eng. I sent them from y'r with new Cloaths and some Presents; sent a Person with them, and I represented the cruel Barbarities comitted by the Fr. and Ind's on our back Settlem'ts. W'n they were properly convinc'd thereof they took up the Hatchet and declar'd War ag'st the Fr. and Shawnesse and sent in to Augusta County 130 of y'r Warriors to protect our Front's. These People proposed going to attack the Shawnesse in their Towns, w'ch I approv'd of and order'd four Companies of our Rangers to join them, and sent up some Guns, Powder, Lead and Match Coats, and gave direct's for Provis's. . . ."¹

The letter, continuing, refers to the necessity of sending commissioners among the Catawba and the Cherokee to make certain of their loyalty to the English. The former tribe had already proposed sending a thousand warriors to join the English forces.

During the years of war which followed, the settlers along Jackson river often suffered from attacks by the Indians, and in September, 1756, the settlement at or near Fort Dinwiddie was attacked, thirteen of the settlers being killed, while twenty-eight were taken captive.²

In the spring of 1757 the Roanoke settlement, some miles below Jackson river, was destroyed by a party of Shawnee, and Governor Dinwiddie soon ordered out a company of militia, many of the members of which came from Fort Dinwiddie, to pursue the Indians. The campaign which followed became known as the "Sandy Creek Voyage."³ But the Shawnee evidently continued their attacks upon the scattered and often widely separated settlements.

There is an entry in the Journal of the Virginia House of Burgesses, dated October 15, 1760, stating that "it appears to the Committee that in the Month of October, 1759, a party of Shawnees Indians made an Incursion into the County of Augusta. . . ."⁴ This unquestionably refers to the murders committed by the Shawnee chief Cornstalk and his warriors in the vicinity of Carr's creek, east of Jackson river, on October 10, 1759.⁵

¹ *Dinwiddie Papers*, vol. II, pp. 309-310.

² Waddell, *op. cit.*, p. 139.

³ Alexander S. Withers, *Chronicles of Border Warfare*, Cincinnati, 1895, p. 81.

⁴ *Virginia Magazine*, vol. XV, no. 3, Jan., 1908.

⁵ Withers, *op. cit.*, p. 173, note.

Cornstalk, one of the greatest of the Shawnee warriors, belonged to that branch of the tribe then living along the Scioto, in Ohio. In 1763, during the Pontiac trouble, he again led a large party from beyond the Ohio against the Virginia frontier, which destroyed the settlements along Muddy creek and continued on to Jackson river; but finding the settlers prepared for attack, they again passed on to Carr's creek, the scene of the outrages committed by them four years before.¹

The following year some Iroquois and Delawares invaded the Jackson river valley, but were soon driven out by militia from Fort Dinwiddie. The Delawares at that time were living along the Muskingum and on other streams in eastern Ohio, having moved from the eastward some years before. At that time (1764) they were still under the influence of the French. And for many years the frontiers of Virginia were not safe from attacks by the western tribes.

About the year 1768 or 1769, the Lords of Trade and Plantations at London sent to Lieutenant-Governor Francis Fauquier of Virginia a series of seventeen questions relating to existing conditions in the colony.

The questions, and answers as returned by Fauquier, form a manuscript volume of 41 quarto pages which has never been published. Although no date is given, the replies were probably written during the year 1769.

The thirteenth question, relating to the Indians of Virginia, together with Fauquier's reply, is as follows:²

"13. What is the No. of Indians Inhabiting those parts of America lying within or bordering upon your Colony? What Contracts or Treaties of Peace or Friendship have been made with them, or are now in Force? What trade is carried on with them, and under what regulations, and how have those Regulations been established?

[Answer] "The number of Indians residing in the known parts of this Colony is very small, there being only some remains of the Eastern Shore and Pamunky Indians, who are so far civilized as to wear European dress, and in part follow the customs of the Common Planters. Besides

¹ Rev. W. H. Foote, *Sketches of Virginia*, Philadelphia, 1856, p. 159.

² The manuscript is now in possession of Messrs Dodd, Mead & Co., New York, by whom the writer has been courteously permitted to reproduce this section.

these there are some of the Nottoways, Meherrins, Tuscaroras and Saponeys; who tho' they live in peace in the midst of us, lead in great measure the life of Wild Indians. The number of all these decrease very fast, owing to their great fondness of Rum. The nearest Indians who do not live among us, are the Shawanese, situated on the N. West towards the Ohio; and the Cherokees inhabiting the South West in the Provinces of the Carolina's. The Shawanese are computed to be about 500 fighting men, the Cherokees about 4000 including the upper, middle, and lower Towns. There is a Treaty of Peace subsisting with the six Nations, and some assurances given to the Ohio Indians by the Commanders of, his Majesty's Forces in those parts. There is a Treaty made by the late Governor Dinwiddie, between his Majesty's Subjects and the Twightwees, living a great way to the Westward of the Inhabited parts of this Colony. There is also a Treaty of Peace lately made with the Cherokees by the Governors of the Carolina's. The Trade between this Colony and the Indians is at present inconsiderable, tho' it seems to be increasing. The Inhabitants of Pensylvania have the chief Trade with the northern, and those of Carolina with the Southern Indians. What Trade we have at present is open and under no regulations. The Legislature had prepared a large Cargo to Trade with the Cherokees under the public inspection, but on the late Rupture that Scheme was entirely dropt. All that is now done is the recommending it to our Traders to be cautious in supplying them with Ammunition. I did recommend it to my Assembly, to pass some Act, conformable to that passed by the Assembly of South Carolina, to regulate the Trade with the Indians, but they declined it."

II. INDICATIONS OF THE PERIOD OF INDIAN OCCUPANCY OF THE VALLEYS

From the above brief historical sketch it will be seen how, during the early historic period of what is now the western part of Virginia, many tribes traversed, or frequented, the valleys of the Blue Ridge; and it is not unreasonable to suppose that before the discovery and settlement of the region by Europeans, it had often been visited by bands from various Indian tribes while passing from one locality to another. Although no reference to permanent Indian settlements in the valley of Jackson river at the time of its discovery is known, it is nevertheless difficult to attribute all the remains found there to migratory bands: probably at an earlier time the section was the permanent home of some tribe.

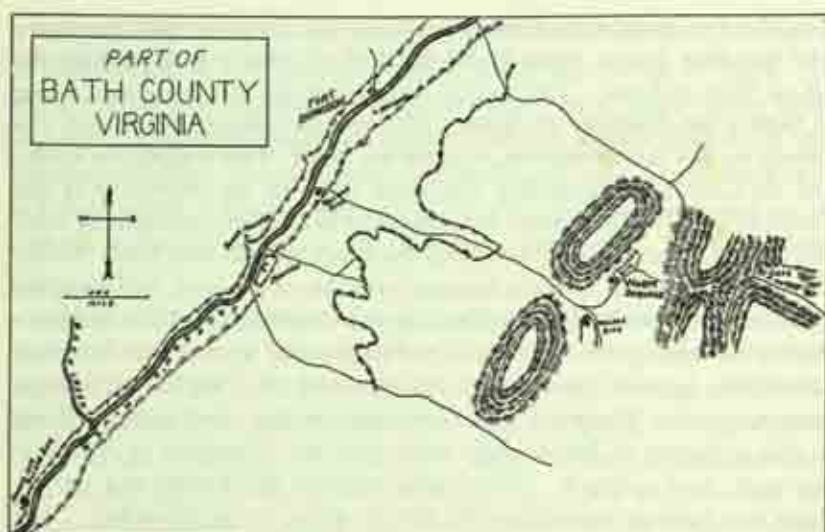


FIG. 115. — Map showing the site of Fort Dinwiddie, and mounds and village sites near Warm Springs, Virginia.

The old trail, along which war-parties from the North or South would pass, followed the valley of either Jackson river or the Cowpasture (Wallawhutoola); but it was probably the former, and over it Washington must have traveled when in 1755 he journeyed from Fort Cumberland to Fort Dinwiddie.

Kercheval has left a rather definite account of the trails in the northern part of the valley. He says in part :

"The author has seen and conversed with several aged and respectable individuals, who well recollect seeing numerous war parties of Northern and Southern Indians passing and repassing through the valley. Several warrior paths have been pointed out to him. One of them led from the Cohongoruton (Potomac), and passed a little west of Winchester southwardly . . . Another crossed from Cumberland, in Maryland, and proceeded up the Wappatomack or Great South Branch valley in the counties of Hampshire and Hardy. . . ."

Now, if this latter trail had continued in the same general direction, it would have led down the valley of Jackson river. Consequently that valley may be regarded as having been one of the principal thoroughfares between the northern and southern regions both before and during colonial days.

¹ Samuel Kercheval, *History of the Valley of Virginia*, Winchester, 1833, p. 51.

Sites of camps or settlements, and mounds of different forms, are quite numerous throughout the valleys, and, as would be expected in a region visited by various tribes, the objects lost or buried at different times are of many forms and materials.

In the vicinity of the Warm Springs, Bath county (at one time a part of Augusta county), Virginia, mounds and sites are rather plentiful. All that were identified or located are noted on the accompanying map (fig. 115).

The Warm Springs are about four miles due east from Jackson river. The water from the springs forms a narrow run which flows into the river; but between the springs and the mouth of the run there is a fall of nearly three hundred feet; the river at that point is approximately 2200 feet above sea-level.

The site of old Fort Dinwiddie is shown on the right, or north-west, bank of Jackson river. Opposite it, near the center of a broad bottom, is an artificial mound consisting entirely of earth. Its dimensions are about 45 feet in diameter and two feet in height, but it is said that years ago it was from five to seven feet high. The surface has been cultivated for nearly a century.

Quite a number of objects of stone have been found from time to time on the surface of the mound or in the surrounding field,

which was probably at one time the site of an Indian settlement. A few years ago a rather crude, and apparently unfinished,

stone object belonging to the general class designated as

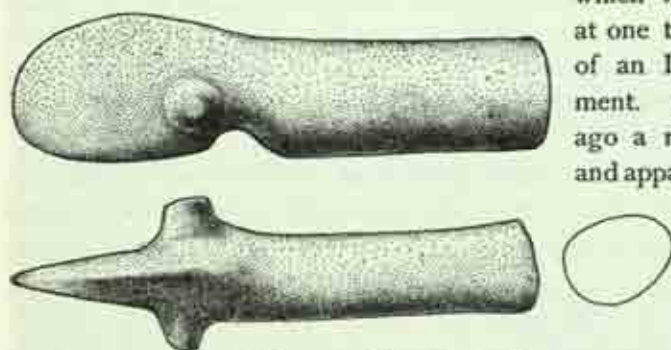


FIG. 116. — Bird-stone. (Three-fourths size.)

"bird-stones," was found upon the surface of the mound, having been exposed by the plow. This specimen, which is shown in figure 116, is made of a grayish slate and is of a rather unusual type. There is a more highly finished example of the same form

and of similar material in the Smithsonian collection (No. 34,857), which was found near Middleton, Dauphin county, Pennsylvania. In the latter specimen there are two perforations, one at each end of the flat base; these do not appear in the Virginia example, although they would probably have been added later.

A small chipped celt having a ground cutting edge was found either on or near the mound.

Throughout the valley arrowheads, drills, and other small chipped implements are quite numerous, especially in the bottom on the left bank of the river, extending a mile or more below the mound, opposite Fort Dinwiddie. They are of many types and materials. Seven specimens, all found within a short distance of the mound, are shown at the top of plate xxxi, 1. The drill, at the right (length $3\frac{3}{16}$ inches) is an especially fine piece of chipping.

Although many of the points found in that region may have been made elsewhere, there was evidently a quarry a short distance northward, whence the Indians obtained material for the making of implements. The locality was described in an article written about sixty years ago, and which was probably the earliest published account of the Indian remains in that part of Virginia:

"On the lands of Mr. John Sitlington, in Crab Bottom, Highland county [adjoining Bath county on the north], there is an area of perhaps a hundred acres, all dug over in pits. This was the great treasury of the dark clouded flint-stone, out of which the Indians made those arrow-heads of that color found all over our state. This rock is there in great perfection, and in inexhaustible quantity."¹

A camp site was located on the south side of Warm Spring run, on rising ground about a hundred yards from Jackson river. Many chips and some broken implements were found; but as the ground was thickly covered with clover it was difficult to examine the surface.

Near the southern end of the adjacent field, and only a short distance from the river, was discovered a fragment of a steatite vessel: the only example found in the valley. As steatite is not found in the mountains of Virginia, and occurs only in the Piedmont

¹ Article signed "Montanus" in *Virginia Historical Register*, vol. III, no. 1, Jan. 1850, p. 37.

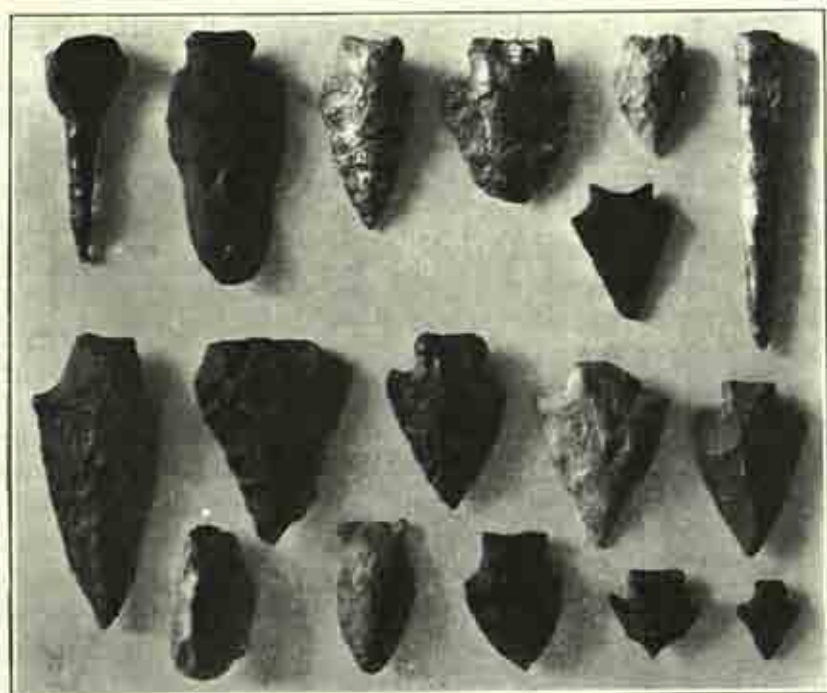


FIG. 1. — Above, seven specimens from near mound opposite Fort Dinwiddie. Below, ten pieces from near Warm Springs. (One-half size.)



FIG. 2. — Silexite boulder near Chula, Amelia co., Virginia

district, the utensil must necessarily have been carried a considerable distance.

Between the Warm Springs run on the north and Cowarden run on the south there is a small watercourse which enters the river about half a mile above the latter run. On the eastern side of the river, extending northward from Cowarden run, there is a very prominent ridge which rises about forty feet above the river. The top is approximately thirty acres in extent and is quite level; but on all sides it is rather abrupt, while in some places it is deeply gullied. Evidently the northern part of the level area was the site of an Indian settlement. Two artificial mounds are situated there, on the side toward the river, as may be seen on the map.

The more northerly of the two mounds was evidently formed originally solely of large stones, making a pile about two feet in height and ten or twelve feet in diameter. But the spaces between the boulders became filled with vegetal mold and earth, until it appeared as a mound with stones projecting from the surface. A trench was made from without the eastern edge to near the center, and extended well below the original surface, or sod line; but nothing was discovered to indicate a burial of any sort, nor were any objects of stone or pottery found.

The second mound had an elevation of about fifteen inches and a diameter of ten feet. Unfortunately the surface was covered with brush, and several small oaks were growing near the center, the mass of roots resulting from this growth making it rather difficult to excavate and to examine the contents of the mound. A part of it, however, was opened.

In the center of the mound there was a small space that had been covered with pebbles, probably carried up from the river; they were rather uniform in size, and averaged about six inches in diameter. These had evidently been placed upon the original surface and the earth thrown over them. The stones did not show any indications of fire, therefore they could not have served as a hearth. But the most interesting feature of the mound was the occurrence of many chips of flint and quartzite throughout the portion that was excavated, and the same condition may exist through the entire structure. It is difficult to explain this peculiarity, and the only

plausible theory is that the earth composing the mound had been scraped from the surrounding surface ; that implements had been made there, the chips from which had remained upon the surface, later to become mixed with the earth when the mound was formed.

The area immediately surrounding the mounds is covered with heavy timber, and the surface has probably never been cultivated ; consequently it is not possible to say what other evidence of an Indian encampment may exist there.

On the right bank of the river, a little above the two mounds just described, is a rather unusual form of stone heap, or, more correctly, double mound. It appears as two piles of stones, each about ten feet in diameter ; but the edges of the two parts touch, thus forming a structure in the form of a figure 8. The entire mound is composed of quite large stones, some of which weigh probably as much three hundred pounds. Many were removed and an excavation made ; but no evidence of a burial and no objects of any sort were discovered.

This mound is near the top of the first ridge rising from the river bottom. It is on a prominent point at the northern side of a ravine, and from it a magnificent view of the river valley is afforded. It is not possible to say for what purpose or reason the rocks were brought together ; but there is a tradition in the valley that it was erected to commemorate the meeting of two tribes which gathered there in council many years ago. The old trail between the South and the North probably passed between the river and the foot of the ridge upon which the mound is situated, consequently there may be some foundation for the legend. On the other hand the stones may have served merely to mark a trail over the mountains.

Some broken arrowpoints were found in the bottomland near the river.

Back creek, the largest tributary of Jackson river, joins that stream a few miles below the mounds. The country through which the creek flows is very rough and broken : at its mouth the cliffs rise several hundred feet above the water.

An Indian settlement is said to have been situated on or near the creek, some miles above its mouth, and many objects are re-

ported to have been found there, including a long copper needle. Copper objects have already been recorded as coming from that same general area.¹

Evidently one of the most important sites in the valley is situated about a mile and a half below the mouth of Back creek, on the right bank of Jackson river. At that point the cliff rises abruptly from the water to a height of about one hundred feet. The top is rather level, and at some time was occupied by an extensive village. Until a few months ago a very large stone mound stood upon the site, but it was removed to make room for buildings that have since been erected.

A large number of unusually interesting specimens have been found from time to time in the vicinity of the stone mound, but from all accounts nothing was discovered in the mound when it was removed.

A collection of implements and other objects, all found on that site, was made by the late owner of the property, but it has since become scattered and only a few pieces can now be traced: these are figured in the present article.²

Among the specimens is the unfinished pipe of grayish steatite represented in figure 117. It is of a type not unusual in that gen-

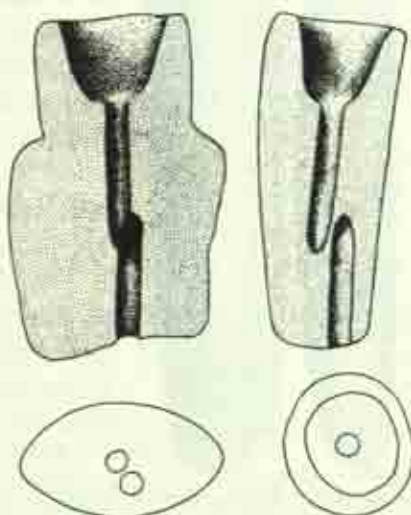


FIG. 117.—Unfinished steatite pipe.
(One-half size.)

¹ According to Professor Fontaine, of the University of Virginia, native copper occurs in a felsitic rock along foot-hills of the Blue Ridge: this would have been the Indians' source of supply. Thomas (*Mound Exploration*, in *Twelfth Ann. Rep. Bur. Ethnology*, p. 426) figures a copper bracelet and copper gorget from a mound in Kanawha county, West Virginia, and on p. 412 refers to "copper beads made of thick wire bent in a circular form" from a burial in a mound on Lins creek in the same county. Fowke (*Archeologic Investigations in James and Potomac Valleys*, *Bull. 23, Bur. Am. Ethnology*, 1894) figures a copper crescent from a mound in Page county, Virginia.

² The specimens referred to are now owned by Mr Boyd McDannald, to whom the writer is indebted for valued assistance.

eral region. In the drawing it will be seen that the perforation was not completed: it was drilled from both ends, evidently with a solid drill, but the two holes did not meet. This may account for the fact that it was never finished.

In figure 118 is shown a very good example of a type of pestle which may have been carried from either the North or the South. The material is brownish argillite. Its length is $12\frac{3}{4}$ inches.

But the most interesting specimen is that represented in figure 119. It is made of a dark greenish diorite, and the workmanship is exceptionally fine. It is what might be termed a double celt, as it has two cutting edges. The surface is well polished, and, with the exception of two small chips, one from either end, the specimen is perfect. The dimensions are: length $12\frac{1}{4}$ in., width $1\frac{1}{8}$ in., thickness $1\frac{3}{16}$ in.

Another example, similar in form, of equally good workmanship, and only two inches shorter, has already been figured.¹ It was found near the Susquehanna river, in Luzerne county, Pennsylvania.

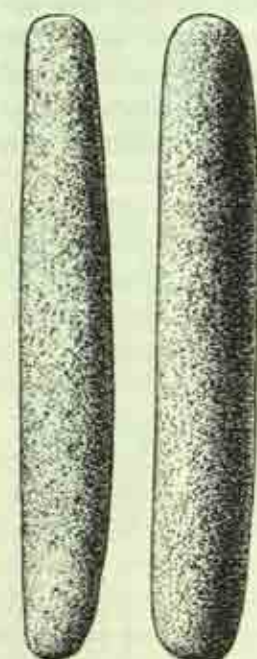


FIG. 118. — Pestle. (One-quarter size.)

It is an interesting coincidence that examples of the two unusual types—the "bird-stone" (fig. 116) and the diorite implement (fig. 119)—should also occur close together in Pennsylvania, within the territory at one time claimed and occupied by the Conestoga, or Susquehanna, and allied tribes. Arrowheads from the two regions are also quite similar in form.

A large stone mound, thirty feet in diameter and eight feet in height, similar to the one which formerly stood on the Jackson river site, is said to exist near Milton, Northumberland county, Pennsylvania, on the Susquehanna.²

¹ Christopher Wren, *The Stone Age*, *Proc. and Coll. Wyoming Hist. and Geol. Soc.*, vol. VIII, pl. 1, Wilkes-Barré, 1902.

² Thomas (*Catalogue of Prehistoric Works*, 1891, p. 192) also refers to a mound near Nanticoke, Luzerne county, Penn., quoted from the *Smithsonian Report*, 1881, p. 686.

The great similarity of objects of uncommon forms and the occurrence of stone mounds in both valleys may be only a coincidence, but more probably they should be regarded as having been made by the same people.¹

Only one small fragment of pottery was discovered during the examination of the sites in Jackson valley. This sherd, showing the impressions of cords, was found upon the surface in the bottomland, north of Cowarden run and only a short distance from the river bank.

As previously mentioned, the Warm Springs are about four miles east of the river, in a valley at the foot of a pass leading across the mountain to the Cowpasture or Wallawhutoola. The old trail, probably traversed during generations by the Indians, may still be traced over the mountain and down the eastern slope.

The first road over the mountains, leading from the east, was laid out in 1772 and extended from Jennings Gap—north of Staunton—to Warm Springs.

In the immediate vicinity of the springs many arrowpoints are and have been found, and two years ago, when an excavation was made less than one hundred feet from the largest spring, a number of specimens were discovered. A few years ago a cellar was dug on slightly rising ground just beyond this site, and several human skeletons were unearthed. Nothing appears to have been found in contact with the burials, but they are unquestionably the remains of Indians.

Just south of the springs, within the grounds surrounding the new Bath County court-house, were found a number of small chipped implements, ten typical examples of which are shown in plate xxxi,



FIG. 119. — Diorite implement. (One-quarter size.)

¹ Mr J. N. B. Hewitt, of the Bureau of American Ethnology, has suggested that probably the "French Indians" alluded to in 1738 (see p. 533) were the Conestoga; if so, it is another link between the occupancy of the two valleys.

1. The site was evidently occupied by a small village: it is rather high, well supplied with water, and occupies a commanding point.

There are several caves not far from the springs, the largest being across the mountain, toward the east, on the old trail; but none appears to have been occupied. No trace of wood ashes could be discovered.

And so it appears evident that before the coming of the European colonists the valley of Jackson river had been much frequented by the Indians. At an early day it may have been the permanent home of some tribe; but there are no records of native settlements in the valley at the time of its discovery, nor is it probable there were any after it became the highway between the North and the South. Consequently many of the broken arrowpoints and other objects, likewise the traces of small encampments which occur along the banks of the river, should be considered as having been left by migratory bands, or war-parties, while moving from place to place.

III. BETWEEN THE MOUNTAINS AND TIDEWATER

The valley of the James, between the mountains and the falls at Richmond, was near the middle of the territory of the Monacan confederacy, and it was of this region that Yardly wrote, in November 1610, when he alluded to an expedition "up unto a famous fall or, cataract of waters, where leaving his pinnasses & Boats safe riding, so purposely to loade up go into the Land called the Monscane."¹

As a detailed account of investigations in that region was published some years ago,² the present notes are merely intended to supplement the work already done.

Midway between Chula and Amelia, in Amelia county, Virginia, about a mile east of the railroad, is a large deposit of steatite whence the Indians obtained material for the manufacture of utensils.³ Over an area of several acres surrounding the outcropping, the sur-

¹ "Virginia from Early Records," *American Anthropologist*, 1907, vol. 9, no. 1, p. 37.

² Gerard Fowke, *Archeologic Investigations in James and Potomac Valleys*, op. cit.

³ Mr F. H. Cushing spent some time at the site in 1876, but no detailed account was ever published (Fowke, p. 10). For references to the steatite quarries of Virginia, see W. H. Holmes, *Stone Implements of the Potomac-Chesapeake Tidewater Province*, *Fifteenth Rep. Bur. Am. Ethnology*, p. 113 et seq.



FIG. 1.—Above, eight finished points. Below, four rejects from area shown in figure 2.
(All one-half size.)



FIG. 2.—Workshop: white quartz on the surface. Near Chula, Amelia co., Virginia.

face is strewn with pieces of the stone which had been carried there. Many are fragments of unfinished vessels, evidently broken during the process of making. Others are only rough blocks that had been removed from the quarry.

One large boulder, about six feet in height, remains near the edge of the old quarry and shows distinctly where many pieces had been removed by the Indians. A photograph of it is reproduced in plate xxxi, 2. A large piece had been removed from near the center of the side shown in the picture, and the spot, as well as several others, is clearly represented.

It is said that when the site was first discovered, many stone implements were scattered over the surface; but few are now found. One example, made of a dark quartzite, is shown in figure 120.

A short distance beyond the steatite quarry, across a small creek which flows into the Appomattox river, is an area about one hundred feet square that is covered with broken quartz. The greater part of the material was probably artificially fractured, and many of the more finished specimens are said to have been collected and carried away at different times. A photograph of the site is reproduced in plate xxxii, 2, and at the bottom of figure 1 of the same plate are four "rejects" found on the surface between the two trees. At the top of the same figure are eight finished arrowpoints that were found in the surrounding fields and which were probably made at that place.

There are several interesting sites not far from Charlottesville, Albemarle county.

Tradition places an extensive village on the right bank of the Rivanna, just north of Charlottesville, near an old ford. But as the bottomlands have often been overflowed, and also cultivated for many years, it is now quite difficult to find material of any sort. Some chips of flint and quartz, and a few fragments of pottery, were found on a slight rise. Many perfect implements are said to have been recovered from the site in former years.



FIG. 120.—Implement from the steatite quarry. (One-half size.)

A space of several acres in the lowland is even now known as the "Indian Grave," and one old negro relates that she remembers when a child, living on the old plantation, seeing several bands of Indians, at different times, camping on the site. Indeed it is highly probable that at one time a large town belonging to the Monacan confederacy was situated there. From that point down the Rivanna to its confluence with the James is a distance of about thirty miles, and there, in 1608, was *Rasaauweak*—one of the principal Monacan towns.

WASHINGTON, D. C.

ETHNOLOGICAL AND ARCHEOLOGICAL NOTES ON MOOSEHEAD LAKE, MAINE

By JOSEPH D. McGUIRE

Moosehead lake is the largest of the many great lakes in Maine. Lying between the counties of Somerset and Piscataquis, it has a shore-line of several hundred miles, and innumerable islands varying in size from a few square rods to hundreds of acres. There are two outlets to the lake, known respectively as the eastern and the western. The flow of water at each outlet is regulated by a dam provided with a sluice and numerous gates that may be raised or lowered at will. The water below the outlets forms the source of Kennebec river. The eastern outlet of Moosehead is much the larger, and through it the winter's cut of logs from the wooded shores is sluiced as soon as the ice disappears in the spring, and is floated down the Kennebec to the sawmills and pulpmills two hundred miles below. The timber thus handled during the last season exceeded eighty million feet, board measure.

The territory under discussion has been from time immemorial the home apparently of Abnaki tribes. The name Abnaki was used by the English and French of the colonial period to designate a confederacy centering in the present state of Maine, and was used by the Algonquian tribes to include all those of their own stock resident on the Atlantic seaboard, more particularly the Abnaki in the north and the Delawares in the south.

It has been supposed by some that the Abnaki were originally residents of Canada; but this is an error, as indicated by the name itself, which signifies "country of the east," or, as a tribal appellation, "easterners." According to Maurault¹ the Abnaki called Moosehead lake *Mousinibes*, or, according to the English, "Moose lake." The ending *-es* in all Algonquian dialects signifies 'small,' 'little,' and would therefore indicate that the definition of *Mousinibes* is 'little lake of the moose,' possibly referring to Indian pond, lower

¹ *Histoire des Abenakis*, 1866.

down the Kennebec. In the Jesuit Relation of 1647, Lalemant says, speaking of the Abnaki: "At the beginning of the year, when these good people were preparing themselves for their great hunt. . . So there they were in the field; they ascend eight or ten days' journey along the river of Kinibeki. They enter a great lake, where they appoint their rendezvous after their hunt. Having separated into several bands, they declared war on the deer, the elk, the beaver, and other wild beast."¹ Though this reference may be to Moosehead lake, the name does not occur in the Jesuit Relations, nor does it appear on Champlain's map of 1632 or indeed on maps as late as 1750.

At a later period the term Abnaki was employed, in a still more restricted sense, to designate the natives along the Kennebec. The word Kennebec signifies "at the long water," and might apply with equal force to the lake, to the Kennebec or the Penobscot, or in fact to any of several lakes in this immediate region.

The upper part of the Kennebec has a very rapid current; in fact it may be described as torrential, for it would be a matter of the greatest difficulty to navigate it with an Indian birchbark canoe. Its waters are so clear that one may readily distinguish bowlders from broken stones lying on its bed; the contrast between the light yellow, often approaching white, of the rhyolite, and the somber hue of the much more numerous primary rocks is remarkable; yet neither in the bed of the stream nor in or on its banks were implements of any description found, though they were abundant along the shores of the lake.

A short portage from the upper end of the lake brings one to the Penobscot river, the difference in elevation between the lake and the river being slight. The Penobscot tribe formed a part of the Abnaki confederacy. Its name, according to Vetromile, is derived from *Pannawānskek*, meaning 'it forks on the white rocks'; or from *Penaubsket*, 'it flows over rocks.' This tribe was probably the most populous of the Abnaki confederacy, and was closely related in language and customs to the Norridgewock who lived on the Kennebec. A band of the Penobscot formerly lived on Moosehead lake, for which reason they were known as Moosehead Lake Indians.

¹ *Jesuit Relations and Allied Documents*, vol. xxxi, pp. 194-95.

Another short portage from upper Penobscot river brings one into the Allegash, down which a canoe may be floated into the St John, where, according to Maurault and the earlier maps, there lived a tribe known to the French as "Etchemins," another Abnaki group. On Owen's map of 1750 there is no indication of Moosehead lake, though the Etchemin are located beyond the headwaters of the two great rivers of Maine. On this map the name is spelled "Flechamins," as if to signify that these people were arrow-makers *par excellence*; the spelling however is evidently a misprint. Implements made from the rhyolite of Mt Kineo at Moosehead lake are said to be found as far north as St John, New Brunswick. Near the mouth of the Penobscot and on the shore at Castine, as well as in the shell-heaps near by, implements of dark green rhyolite are found, and also bowlders of drift material of apparently the same mineral, weighing in some cases as much as a ton or more.

Mr C. C. Willoughby, of the Peabody Museum, Harvard University, has located and described¹ four aboriginal workshops existing in the talus of Mt Kineo, where implements have been made. He refers also to the finding of implements of the same material on all the camp-sites and in all the shell-heaps examined by him in the state, as well as in the graves which he examined in Hancock county. Mr Willoughby found no evidences of quarrying in the mass of the mountain, all indications pointing to the talus at Mt Kineo as the great source of the material for implement-making. Although erratic bowlders are abundant about the shores of the lake, in Mr Willoughby's belief they furnished only a limited supply of the raw material.

Mt Kineo rises 1700 feet above tide, and 1000 feet above the lake. The whole mass appears to be composed of a felsitic rhyolite, erratic bowlders of which are widely distributed throughout Maine, New Brunswick, and even beyond. The name Kineo signifies 'great eagle' in the Abnaki language, probably from some fancied resemblance of the mountain itself, or of some part of it, to the bald eagle. On the southern side the mountain is about a mile in length, and has a talus from two hundred to three hundred feet in width, the slope of which is composed of small fragments inter-

¹ *American Naturalist*, Mar., 1901, pp. 213-216, with three plates.

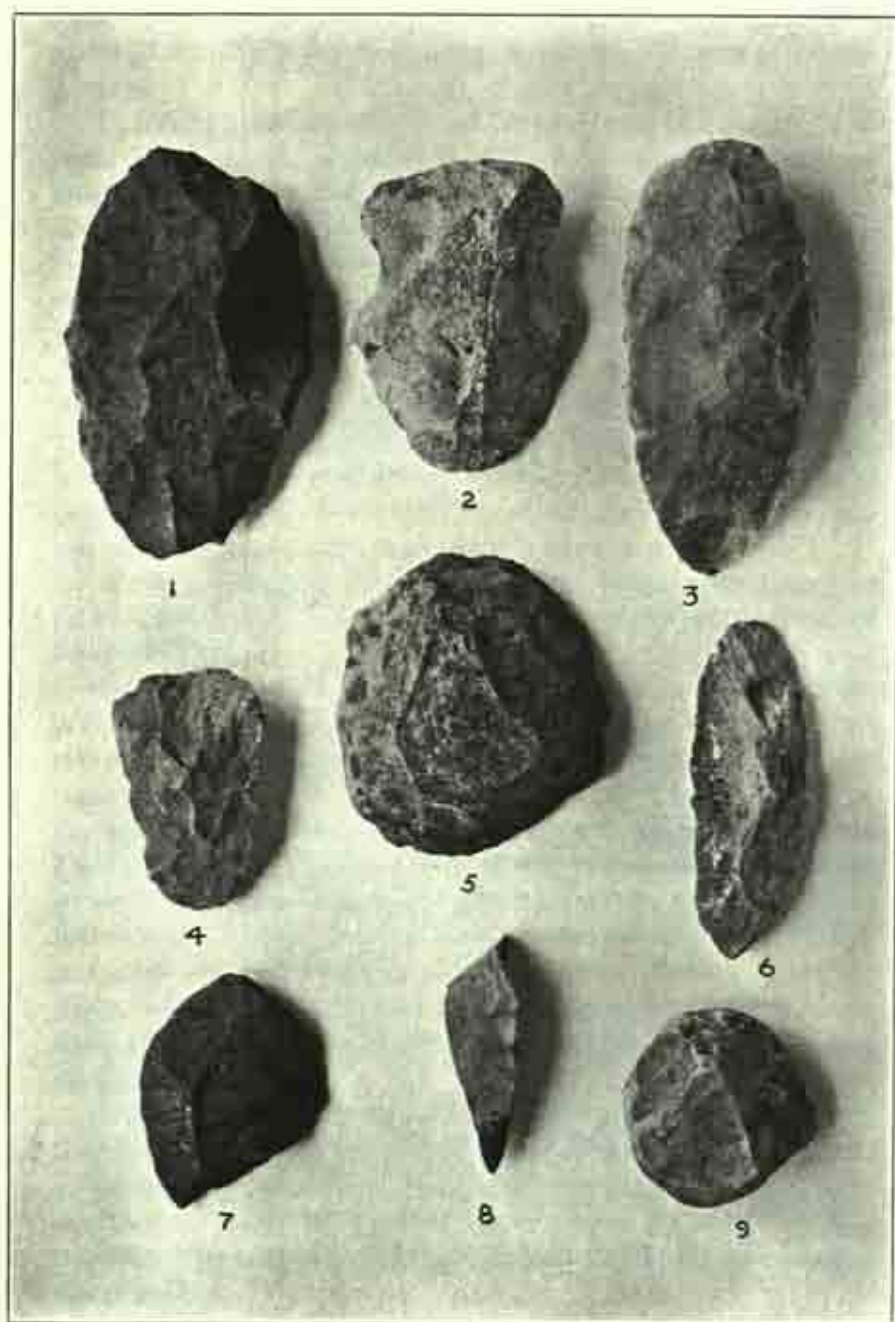
mixed with larger masses of the rock that have fallen from above. On the precipitous southern side of the mountain are seen numerous bald patches of the rhyolite in places where the cliff is too precipitous to support vegetation or where the frost has loosened the stone. The distance from the outlet to Mt Kineo is nine miles in an air line.

A visit extending over two months during last spring and summer, at the eastern outlet, offered unusual opportunities for archeological investigation of local conditions, owing to an exceptional period of drought.

During the latter part of May and in early June the water of the lake was at an unusually high stage, no beach being anywhere visible; in August and September, however, owing to the lack of rainfall, the depth of water was lowered as much as an inch a day. Due to the very gradual shelving of the bed of the lake, a rocky beach developed and finally attained an average width of a hundred feet or more. On the beach and in the immediately adjacent water numerous aboriginal stone implements in various stages of development were found. Of four hundred specimens picked up, all but four are of rhyolite; associated with these were numerous fractured pieces, as well as boulders, many of which latter had been purposely broken in order to test their suitability for producing spalls for subsequent flaking into implements. The rhyolite boulders are generally of small size when compared with the boulders of primary rocks, which occur in infinitely greater numbers, the former weighing tens and the latter hundreds of pounds.

The color of the rhyolite in the bed-rock is dark green, but along the shores of the lake and in the Kennebec river it has weathered until it is almost white. In a number of cases implements taken from the water were light yellow on their upper surface, whereas the under-side was light gray or green, as though they had lain unmoved for centuries. The numbers of rhyolite boulders lying along the beach would indicate that erratic blocks have been more extensively employed for implement-making than has been supposed.

The specimen-yielding area is limited to a few hundred yards along the lake shore, beginning a hundred yards from the dam on both sides of the outlet; and to less than fifty yards of beach at



RHYOLITE OBJECTS FROM MT KINEO, MAINE

Squaw point, a mile from the outlet. The uniformity in material and workmanship being similar, the collection is treated as homogeneous.

On the beach southeast of the Outlet Hotel, and two hundred yards from the point where most of the implements were found on that side of the lake, and away from other pieces of the rhyolite, a cache of twenty-nine pieces was unearthed, the specimens ranging in color from almost white to a dark gray. The lighter color being uppermost, it appears likely that the weathering is due to light rather than to chemical action of the water.

Practically all these specimens exhibit more or less artificial work. The largest one in the cache is of the type shown in figure 1 of the accompanying plate, measuring about seven inches in extreme length. The cache was situated within a natural circle of boulders, and could have been found readily by the owner who had piled the implements so neatly one upon another.

A single spearpoint in two pieces was found upon a rock at Squaw brook, with the refuse chips from its manufacture lying on the ground below.

Figures 1, 3, and 6, of plate XXXIII, and figure 11 of plate XXXIV, represent specimens belonging to the well-known lanceolate type, probably better known to some as the "cache" type. Of these, one hundred and five were found, ranging in length from $7\frac{1}{2}$ in. to $1\frac{1}{2}$ in., and in width from $4\frac{1}{4}$ in. to $1\frac{7}{8}$ in., with a thickness of from $1\frac{1}{4}$ in. to $\frac{1}{4}$ in. Twenty of these specimens, all entire, were found within a space of fifty yards on the eastern side of Squaw point, near a huge boulder, through which runs a vein of quartz, that to an Indian might well suggest an idol to which offerings should be made. A single broken spearpoint was found here, and it is said that an ax and a gouge, as well as arrowheads, were also picked up years ago.

Certain of the characteristics of the type illustrated connect them apparently with the so-called "turtlebacks," although figure 11 is a perfect specimen of the type commonly known as "cache implements," and which in the Middle States are often found in numbers together. A similar implement on the Pacific coast is found hafted.

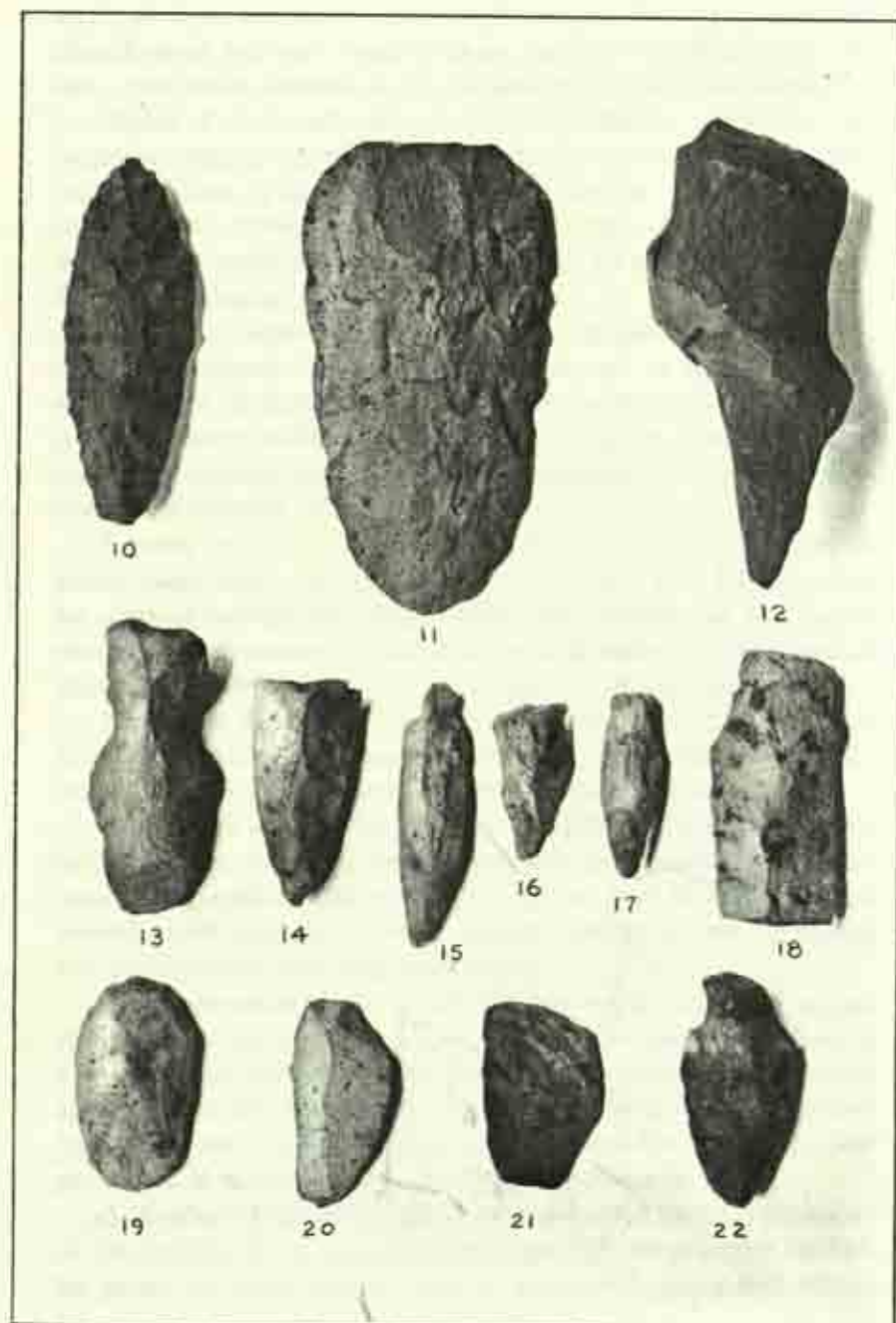
Of the objects found at Squaw point, that represented by figure 6 is most typical. The objects from this particular locality were, as a rule, somewhat water-worn.

Figure 9 illustrates one of ten hammer-stones, which range in shape from spheroidal to discoidal. The illustration shows one of the latter type. The texture of the material renders these implements admirably suited to the battering of other stones. They vary in their greater diameter from $5\frac{1}{4}$ in. to $1\frac{3}{4}$ in.

Figure 4 represents the "turtleback" type, of which sixty-eight specimens were collected, ranging in greater diameter from $4\frac{1}{2}$ in. to $2\frac{1}{2}$ in., and having an average thickness of $1\frac{1}{2}$ in. Some of the specimens are flat at base, while others are convex on both sides. In the Peabody Museum at Cambridge, Mass., there are four specimens of this type, measuring ten inches or more in length, that were found in one of the workshops in the talus of the mountain.

Figure 2 shows a specimen that appears to be *sui generis*, having been originally flaked, or chipped into form, and subsequently hammered for hafting, as the two notches and the face of the illustration indicate. The part that may be designated the blade seems to have been intended for use as a hammer rather than for any other purpose. Its length is $5\frac{3}{8}$ in., its width $3\frac{3}{4}$ in., and the thickness $1\frac{5}{8}$ in. Two other objects, somewhat similar but without the grooves, were found. The specimen shown in figure 12 was found under a stone with that represented by figure 2, on a house site above high-water mark. Both appeared to have been hidden as if to be again used. Under the same stone was also a pile of small spalls, or chips, — refuse from implement-making. The object illustrated (fig. 12), which appears to be unlike any implement known elsewhere, is made from a schistose mineral, and is the only specimen that appears to have been entirely shaped by hammering. It fits the hand comfortably, and may have been employed as an awl for enlarging holes in leather. The object is $5\frac{3}{4}$ in. long, and $2\frac{1}{4}$ in. in maximum thickness.

Figure 5 illustrates an object of problematical use; it can scarcely be called either a turtleback or a core. It is flat at both bottom and top, is chipped around the sides, and appears to have been used possibly as an anvil, or a lap-stone, as it was found close to



RHYOLITE OBJECTS FROM MT KINEO, MAINE

a pile of chips, and has a slight roughening on the upper surface as though stone had been chipped on it; but this is mere surmise. It has a maximum diameter of $5\frac{1}{2}$ in., and is $1\frac{3}{4}$ in. in thickness.

Figure 7 represents one of a hundred similar specimens, the largest averaging $4\frac{1}{2}$ in. in length and $3\frac{1}{2}$ in. in width; some are not more than $\frac{1}{4}$ in. thick. This type may be classed as knives, or flakes with cutting edges, and although most of them have been undoubtedly artificially worked, some show no evidence of artificial flaking or chipping.

Figure 8 exhibits a singular specimen, triangular in cross-section, in which a natural form has been helped out by delicate flaking along one of its three facets. This object is $4\frac{1}{4}$ in. long, and $1\frac{3}{4}$ in. in maximum width; the point is as sharp as a needle. This implement reminds one of certain bayonet-pointed objects of slate found at Ellsworth, Maine.

Figures 10, 13-18, and 22 are illustrative of the projectile points which range in length from 1 in. to $5\frac{1}{2}$ in. They present no unusual features, but they exhibit the character of the Kineo rhyolite, which appears to lend itself to more varied artificial fracture than that of almost any of the great quarries of the continent.

Figure 19 illustrates one of twelve scrapers found, a single specimen of which is of quartz. They vary in length from $1\frac{1}{2}$ in. to $3\frac{1}{2}$ in., and in width from less than 1 in. to $1\frac{1}{2}$ in.

Among the stones scattered on the beach, quartz is not uncommon, but it is usually in broken, angular pieces, and of a texture unsuited to artificial fracturing. On house sites there were found several small pebbles of white quartz, similar to the polishing and gaming pebbles of Indians of to-day.

The implements herein referred to vary in color from the natural dark green of the freshly fractured stone to chocolate color shading into light gray, light cream, or yellow. The weathering depending apparently on the period of the exposure, in broken objects, where both pieces were found, the fracture shows that the weathering had penetrated in certain cases to the depth of half an inch.

A number of specimens preserved exhibit the varying character of the rhyolite in its natural cleavage, which ranges from smooth flat plates to pieces having convex or concave blades, and others

with straight edges, turning, in certain instances, from straight to an angle of thirty degrees, all with sharp blades. Whether the remains found were the implements of a sedentary people is a question. The region of the lake must always have been a paradise for fisherman and hunter, as lake and brook trout are still to be found in abundance, in addition to moose, caribou, deer, bear, bobcats, beaver, and otter.

Figure 121 illustrates a natural concretion, totally unlike anything observed on the beach. The only indication of artificial work appears on the upper end of the specimen, where the top appears



FIG. 121. — Natural concretion with artificial markings in depression at top.

to have been artificially excavated to the depth of $\frac{1}{8}$ in., in which are cut or scratched a number of straight lines. This object belongs to a class that has been encountered by most archeologists throughout the country. They are still in use among the Pueblos, and have been found in pueblo ruins of the Southwest, in the mounds of the Mississippi drainage, and in shell-heaps of eastern United States. Such objects were sometimes the personal fetishes of their owners, and served either for protecting them from harm or for bringing good fortune in the hunt or in war. Such fetishes were sometimes painted to strengthen some fancied resemblance to the owner's tutelary, or were otherwise marked by adding a mouth, an

eye, or other feature. Schoolcraft describes certain "image stones" which "the native tribes who occupy the borders of the great lakes are very ingenious in converting to the uses of superstition, such masses of loose rock or boulder stones as have been fretted by the

action of water into shapes resembling the trunks of human bodies, or other organic forms. There appears, at all times, to have been a ready disposition to turn such masses of rude natural sculpture, so to call them, to an idolatrous use." Of these figures Schoolcraft illustrates five specimens.¹

Lalemant, referring to Dreuilletes' conversion of the Abnaki on the Kennebec, in the *Jesuit Relation* of 1647 says that one of the evidences that the Father obtained was that the Indians "should throw away their manitou, or demons, or fantastic charms. There are few young men among the savages," he says, "who have not some stone, or other thing which they keep as a dependence upon the Demon, in order to be happy in the hunt, or in play, or in war. . . . Those who had some of these charms, or manitous, drew them from their pouches; some cast them away, others brought them to the Father."²

WASHINGTON, D. C.

¹ *The Indian in his Wigwam*, p. 290, 1848.

² *Jesuit Relations and Allied Documents*, vol. xxxi, pp. 183-95.

TOTEMISM IN CALIFORNIA¹

By C. HART MERRIAM

That totemism exists among the Indians of California seems to have escaped the notice of ethnologists. This may be due to the less conspicuous part it plays in the lives of the people compared with its high development in some other regions, notably Alaska and British Columbia. Nevertheless totemism not only exists in California, but is rather widely prevalent; it is present in many tribes — tribes distributed among widely different stocks; and, when one comes to understand something of the inner life of the people, it is found to be as deeply rooted, and in some cases as important, as in other regions.

It is not my object to discuss the subject totemism, but to record the widespread prevalence among California Indians of certain totemic beliefs and practices which, apparently, have not been previously observed. And it is interesting to note that of the several degrees and phases of totemism, at least three occur in California, namely: (1) The non-hereditary *individual totem*; (2) the hereditary *patriarchal totem*; and (3) the hereditary *matriarchal clan totem*.

I am aware that some ethnologists would restrict the use of the term totemism to the class of cases ordinarily known as *clan totemism*; but clan totemism is so obviously only a higher development of *personal totemism* that such restriction would seem hardly to serve a useful purpose.

In California the totem is always an object in nature — usually an animal, but sometimes a tree or a rock.

Among the several tribes of Mewan stock totemism forms a fundamental part of the religion, and throughout life is a controlling

¹ Read before a joint meeting of the Anthropological Section of the American Association for the Advancement of Science, the American Anthropological Association, and the American Folk-Lore Society, in New York City, December 27, 1906; and briefly noticed in the *American Anthropologist*, vol. 9, p. 168, Jan.-Mar., 1907.

factor in the conduct of the people. The form it takes varies greatly. Thus among the Southern Mewuk (Mewwah) it governs marriage and the choice of partners in games, and also determines the placing and treatment of visitors; while among the Northern Mewuk, where its power over the individual is even more marked, no such social restrictions exist.

In the Middle and Southern Mewuk the totem is hereditary and passes from father to child; the mother's totem is not carried down. If the father is a Deer, all the children — boys and girls alike — are Deer.

In the Northern Mewuk on the other hand the totem is individual, not hereditary. The father may be a Bear, the son a Gray Tree-squirrel, the grandson a Lizard, the aunt a Yellowjacket Wasp. In reply to inquiries as to how one finds out what his totem is, I was told that a young person, on reaching the age of puberty, goes off alone in the forest and wanders for days without food — save such green stuff and roots as he may gather and eat raw. He wanders *hang'-e-lah* (like a lost man) for a period which may last for two weeks. After a time, when asleep, he sees the animal he came from; it or its spirit comes to him and brings him food. After this he goes home but says nothing about what has happened. If on the first or second night it again appears and brings him food, he lives, and throughout life it befriends him; but if it does not come to him and he eats cooked food, he dies.

In this tribe — the Northern Mewuk — the totem may be an animal, a tree, or a rock. The commonest animal totems are the Bear, Deer, Raccoon, Gray Tree-squirrel, Golden Eagle, Lizard,¹ and Yellowjacket Wasp. Certain animals are never totems. Conspicuous among these are the Coyote and Fox. The only tree totem is the Black Oak.

My list of Northern Mewuk totems is only fragmentary and does not include the Great Horned Owl; but a member of the tribe once told me a story which at least implies that this owl is one of them. He said: "One winter a few years ago a sick man near Oleta was on his way home when he fell and could not get up. He lay there

¹ The Northern Mewuk have two Lizard totems: *Pe-lá'-li-te* the Little Lizard, and *Suk'-ká-de* the Black Lizard.

on the ground all night. It was a cold winter night and he would have frozen to death, but *Too-koo'-le* the big Owl saw him and came and lay down on his breast and spread his wings over him and stayed there all night, keeping the man's *wus'ke* (heart) warm and saving his life."

Among the Middle and Southern Mewuk the totem may be either an animal or a tree, but never a rock—in which latter respect they differ from the Northern Mewuk, many of whom came from rocks. If a tree, it must be either the Black Oak or the Sugar Pine, as these are the only trees from which people ever came. The most usual totems are: the Grizzly Bear (but no other bear), Coyote, Deer, Gray Tree-squirrel, Bat, a considerable number of birds, the small lizard called *Pe'-chik-kah*, the Frog, the water Salamander, the Salmon, and the Yellowjacket Wasp. These people say they never came from the Elk, Black Bear, Mountain Lion, Bobcat, Raccoon, Big Wolf, Fox, Badger, Otter, Shunk, Marten, Ringtail Civet (*Bassariscus*), Porcupine, Groundhog, Ground Squirrel, Chipmunk, Rabbits, Rats, Mice, Gopher, Mole, certain birds, Snakes, the larger Lizards, the Toad, Fish (except the Salmon), or insects (except the Yellowjacket Wasp).

Among the Middle and Southern Mewuk the people group themselves in two great classes or "sides"—the Land Side and the Water Side—designated respectively by the names of characteristic land and water animals. Thus among the Middle Mewuk, *Oo'-yah* the Deer stands for the people of the Land Side; *Lo'-tah* the Frog for those of the Water Side. Similarly, among the Southern Mewuk, *Ti'-es-moo* the California Bluejay stands for the Land Side, and *O-sa'-le* the Coyote for the Water Side.¹ Even to-day, in some parts of Southern Mewuk territory, the first question a strange Indian (speaking the same language) is asked, is, *Man-nan'-ne Ti'-es-moo, O-sa'-le?* (Who are you, Bluejay or Coyote?). His reply determines the place assigned him and his subsequent relations and treatment. In love affairs and marriage, and also in games,

¹ That the Coyote, a land animal, should have been chosen to represent the Water Side seems strange at first, but is understood when the *oot'ne* or mythology of the tribe is known, for in the beginning Coyote-man came out of, or from beyond, the sea. This aquatic assignment of Coyote does not affect his near relatives the Dog and Fox, both of whom are classed on the Land Side.

the partners must belong to opposite sides. The Northern Mewuk do not have this custom, but use the direct terms, *Kik'-ka-mud'-de*, water side, and *Wal'-le-mud'-de*, land side. The Middle and Southern Mewuk who came from trees (Black Oak and Sugar Pine) were classed naturally on the Land Side.

The three tribes of Mewan stock living north of San Francisco bay are ardent totemists, but the full details of their beliefs are not known. The *O-lā'-yo-me* of Coyote valley on Putah creek say that they came from the Bear, Deer, Coyote, Gray Tree-squirrel, Ground Squirrel, Owls and a few other birds, but not from the Raccoon, Fox, Duck Hawk, Crow, Bluejay, Meadowlark, or Woodpecker. Their totem is hereditary on the father's side, and appears to be called *O'-ke-ap'-po*.

The *Hoo'-koo-e'-ko* of the coast region immediately north of San Francisco bay, and the *Olamentko* of Bodega bay, say that every person was once a bird, and that they came from Owls, Eagles, Hawks, Quails, Ducks (the Mallard in particular), Bluejays, Woodpeckers, and some other kinds. But no *Hookooeko* or *Olamentko* ever came from any mammal. This is a highly important feature in which the two coast tribes agree among themselves and differ from the related *Olā'yome* of Coyote valley.

The tribes of Midoo stock also came from animals. The *No-tō-koi-yo*, or Northeastern Midoo, state that they came from various birds and mammals; and the *Pa'-we-nan*, or Southwestern Midoo, have the same belief. These people, the *Pa'-we-nan*, appear to call their totems *Kaht'-dik-kah*. They are the Deer, Antelope, Wolf, Coyote, Fox, Mountain Lion, Raccoon, Skunk, Beaver, Rabbits (three kinds — Jackrabbits, Cottontails, and Brush Rabbits), Ground Squirrel, Gopher, White-footed Mouse, Bald Eagle, the large buzzard hawks of the genus *Buteo*, the Duck Hawk, Condor, Turkey Buzzard, Great Horned Owl, Raven, Crow, Valley Quail, California Bluejay, Meadowlark, Flicker, Blackbird, Pelican, Cormorant, White Goose, Swan, Great Blue Heron, Kildee, Lizard, and Salmon. The *Pa'-we-nan* did not come from Elk, Bears, Wild Cat, Badger, Otter (there is doubt about the Otter), Gray Tree-squirrel, Wood Rat, Ducks, Divers (Grebes), Gulls, Mudhen, Sandhill Crane, Gray Goose, Canada Goose, Barn Owl, Ground or Burrowing Owl,

Pigeon, Dove, Roadrunner, Kingfisher, Magpie, California Woodpecker, Robin, Swallow, Hummingbird, Turtle, Frog, Snakes, Sturgeon, or Sucker; neither did any of them come from insects or trees.

It is interesting to note that with the *Pa'-we-nan*, as with the Southern Mewuk already mentioned, the totem is hereditary and descends from father to children of both sexes.

Passing south to the Yokut stock of the Southern Sierra foot-hills, totemism is present in some and probably all of the tribes. In the *Kosh-sho'-o* tribe of Table mountain, on the south side of the San Joaquin river, it is more highly developed than noted elsewhere. An old woman of this tribe told me that *Yi'-yil* the Falcon was her family or clan totem — the totem of her mother and her mother's



FIG. 122. — *Kosh-sho'-o* basket with *Yi'-yil* (Falcon) design.

mother and so on back, for in this tribe mother right prevails and the line of descent carries the mother's totem instead of the father's. This woman showed me two baskets, made by her mother and grandmother, on which the clan totem, *Yi'-yil*, is represented by a symbol

consisting of two parallel oblique bars, which stand for the two dark bars on the side of the Falcon's head (fig. 122). In the oldest basket, a small low bowl, slightly choke-mouthed, this symbol is the dominant design and is repeated in two circles around the circumference. The basket was by far the most precious one remaining in the tribe, and when brought from its hiding place was full of large stone beads and long cylinders of the old-time shell wampum. The owner told me that in making ready for dances and other ceremonies the women of her clan used to paint the *Yi'-yil* bars on their cheeks.

WASHINGTON, D. C.

BONTOC IGOROT GAMES

By S. C. SIMMS

The games and pastimes of Bontoc Igorot children are very few. The most peculiar and the least like any other ever seen among primitive peoples by the writer, is a more or less acrobatic game which is played usually by groups of three little girls about twelve years of age, or older. Frequently when playing they are naked; at other times they wear only a very short woven cotton skirt, open at one side from waist to hem, and fastened about the waist by means of a belt or the ends of the skirt tucked in over each other.

Just after the rainy season, when the crop of pigweed has attained a harvestable growth, little girls are sent to gather this weed for food for the highly esteemed pig. It is after each girl has gathered a large tray of the weed, seemingly too large and heavy for their slender figures to support, and while returning to their homes, that their desire to play this game seems keener than at any other time—why, I was unable to learn. It may be said in connection with this game that the pueblo of Bontoc, unlike any other Igorot village of Lepanto-Bontoc province, has grassy streets shaded by large trees.

Placing their burdens of pigweed upon a grassy plot, three of the girls arrange themselves in a triangular grouping, back to back and about a foot or so apart. At an uttered signal from one of the players, each bends forward and rests her head and hands upon the ground, and with a simultaneous springy shove of their feet at the beginning, and often an indiscriminate scramble of legs and feet, the attempt is made to assume a vertical position of the body supported by the head and hands upon the ground, with legs inclining forward to the center and feet touching and assisting in supporting and balancing each other (see fig. 123). When they have steadied themselves in this position after many unsuccessful attempts, amid much hearty laughter among their companions and themselves, one

of the three begins to sing a very pretty song, in which the other two join.

During the singing, and at a particular word or sound of a note, the right leg of each girl is withdrawn from the central grouping and held in a widely separated, almost horizontal, position, while the singing continues until another signal is given, when each

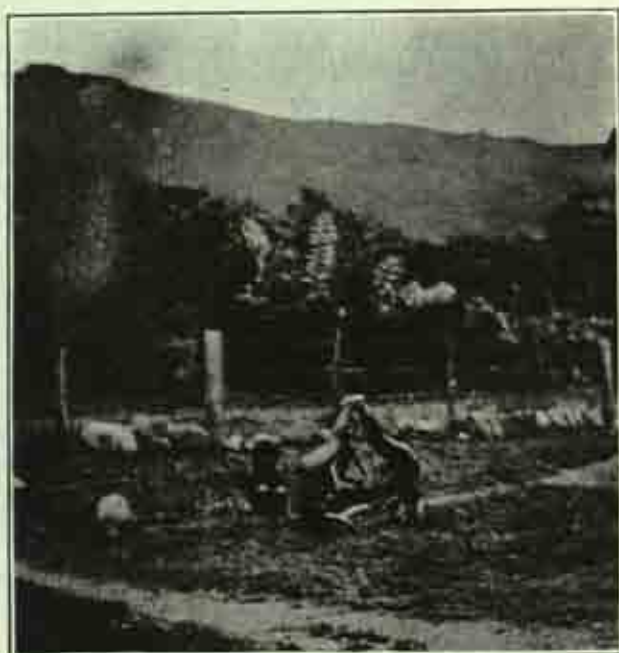


FIG. 123. — Game of Bontoc Igorot girls.

right foot is replaced in a concerted move to its former position in the center. The left leg is next withdrawn, and the same position assumed as when the right foot was withdrawn.

There appeared to be several verses to the song, or repetitions of a verse, for the right and left feet were alternately withdrawn several times during the singing.

When skirts are worn, efforts are made by the girls to hold them tightly between the legs. Should they become freed or disarranged, the game is not stopped, but goes merrily and innocently on, until the participants are compelled to desist through fatigue or the remembrance of unfinished tasks.

At Sagada, in Lepanto-Bontoc province, Luzon island, I witnessed a game consisting of a combat with missiles of mud and earth, played by about thirty young men and boys from Sagada and a like number from the nearby town of Balugan.

The game was performed on a flat harvested rice field, soft with mud and surrounded by high hills forming a natural amphitheater, from which followers of the contending sides cheered or jeered as their champions advanced against their adversaries or were repelled by them. Great clods of earth as well as balls of soft clay were dexterously thrown and with astonishing accuracy.

Many of the contestants, mostly the men, did not condescend to use any means of protection, each trusting solely to his ability to dodge the missiles. Those who did endeavor to protect themselves were principally the younger boys, who used shields about thirty inches long and fifteen inches wide, roughly made for the occasion of vertical stalks of *runo* grass with horizontal bindings of rattan. Considerable skill was displayed in their use.

Frequently when a side was being routed a number of women spectators would urge their male companions to join the losing forces. The additional recruits would be noisily welcomed and jeered by the adherents of the contending sides.

After each side had been routed a number of times, the fight came to an end by the Sagada men chasing the Balugan men to their town amid a shower of missiles and a chorus of derisive yells.

Another combative game observed at Sagada was a kicking fight, played between individuals of two contending sides composed of boys about seventeen years of age.

In kicking, the body is bent sideways at the waist, so that at times the head is lower than the waist, and the blow of the foot is dealt with considerable agility and force by a sudden upward and slightly backward kick, which frequently finds the body of the adversary. This mode of kicking is adapted in order that the striking may be done with the flat hard sole of the foot, rather than with the unprotected and almost universally spreading toes.

After a brief spell of playing, the kicking became seemingly indiscriminate, for at times two boys of one side made a combined attack on one of the opposing side, who in turn would be reinforced, and soon the game developed into a confusion of kicking legs.

A number of young boys at Sagada were seen spinning tops made of hard wood with flat heads, about 5 cm. in diameter, and an irregular semi-globular body with sharpened spinning end. Short thin spinning strings of twisted fiber were used, and the tops were spun with a quick underhand draw near the ground.

While the tops were spinning, usually two at a time, each of the two players placed his open hand palmward to his own top and gave it a slight touch for the purpose of causing the tops to collide, in order to knock the opponent's top over.

A unique game was observed near Danu, while the writer was journeying from Balbalassan to Bontoc, several of the *cargadores* from Banged being the competitors.

A narrow platform-like structure, consisting of six upright sticks, was constructed. The upper end of each was forked, while the lower end was sharpened and driven in the ground. Of the six supports, two were at each end and one on each side about midway between the end supports. A number of sticks cut from branches of trees, of sufficient strength for a man to sit upon, were laid longitudinally on the crotches of the supports. A challenge was issued, and accepted. One of the players (there were but two at a time) seated himself sidewise on the platform, with his left leg slightly bent and the foot placed firmly on the ground. The right leg was drawn up and the foot placed against the crotch of one of the end supports. The left hand passed under the upper part of the right leg and pulled the fleshy part of the thigh toward the left leg, thereby reducing the striking surface and at the same time making it more firm. The position thus assumed gave the striking contestant an unobstructed space upon the seated man's leg to inflict the blows with his open hand.

The striker advanced with his striking hand outstretched, as if to measure the distance suitable for delivering the most effective blow. After one or more practised swings of the arm, as though to obtain momentum or force, he suddenly whirled and brought the palm of his hand upon the unflinching target with a resounding smack. As soon as the blow had been delivered, examinations were made by friends of each of the players to determine the result. The character of the visible evidence, if any, of the hand upon the leg, and

the manner with which the blow was received, governed the decision of the judges as to the superiority of the striker or the stricken. Several pairs of men participated in this novel game.

Simple games, such as blowing out a lighted candle, when blind-folded, were also played by several of the *cargadores* while camping on the trail.

In another, a stalk of runo grass between four and five feet long was stuck upright in the ground. The upper end was slightly slit, and into it was placed a pebble about the size of a small hickory-nut. The object was to fillip the pebble from the stalk. A certain number of trials for each player, as well as a common starting point, was agreed upon. With one hand held tightly over the eyes, the other outstretched with the index or second finger in readiness to fillip the pebble, each individual advanced continuously in the direction of the stalk. Of ten or twelve players, only one succeeded in accomplishing the feat, which in a measure illustrates the fairness of the participants in not peeping.

Another game of a juvenile character was played among the *cargadores* while camping. About twenty sticks, seven or eight inches in length, were laid upon the ground in a row side by side and several inches apart. The player assumed a low squatting position at the extreme right end of the row of sticks, and picking up the end stick placed it at the extreme left end of the row, going from one end to the other by hopping sidewise with both feet, and not pausing while placing the sticks at the left end. He then hopped back to the right end of the row, picked up the end stick, and hopped again to the left end, where, as before, he deposited the stick.

The act of picking up the stick, hopping away with it, placing it upon the ground, and returning to the right end was repeated until each stick had been removed from its original position and placed at the extreme left end of the row, or until the player succumbed from fatigue. That a considerable amount of strength in the legs was required to play this game through was clearly shown by the failure of several muscularly built men to complete it.

FIELD MUSEUM OF NATURAL HISTORY,
CHICAGO.

THE ACCOUNT OF LAMHATTY

By DAVID I. BUSHNELL, JR

An old manuscript of unusual interest, relating to the Creek Indians in 1706 and 1707, is preserved by the Virginia Historical Society at Richmond. It forms No. 13, vol. iv, of the Ludwell Papers, and is now printed for the first time.

The manuscript is an account of an Indian from the town of Towasa who was taken captive by a band of "Tusckaroras" and carried northward through many Creek towns; later he was sold to the Souanoukas [Shawnees], whose village was across the mountains toward the east. Still later he accompanied a party of Shawnee on a hunting trip northward along the foot of the mountains. They evidently entered the valleys of the Blue Ridge and the Alleghanies in Virginia, beyond the headwaters of the streams flowing into the Atlantic. Soon he escaped from the Shawnee and made his way down the Mattapony to the English settlements.

The account was either written or dictated by Robert Beverley, the historian, two years after the first edition of his *History of Virginia* was published. It is written on a single sheet of paper, and on the reverse is a map of the country through which Lamhatty passed, his route being shown by a dotted line. The map is reproduced in facsimile, though slightly reduced, in plate xxxv.

The manuscript reads as follows :

" M^r Robert Beverleys Acco^t of Lamhatty

" Lamhatty an Indian of Towassa of 26 years of age comeing naked & unarmed into the upper inhabitants on the north side of Mattapany in very bad weather in y^e X^t mass hollidays anno 1707 gives this acco^t

" The foregoing year y^e Tusckaroras made war on y^e Towasas & destroyed 3 of theyr nations (the whole consisting of ten) haveing disposed of theyr prisoners they returned again & in y^e Spring of y^e year 1707 they swept away 4 nations more, the other 2 fled, not to be heard of 'twas at this second comeing that they took Lamhatty & in 6 weeks time they caryed him to Apeikah from thence in a week more to Jābon,

from thence in 5 days to Tellapousa (where they use canoes) where they made him worke in y^e ground between 3 & 4 months. Then they carryed him by easy Journeys in 6 weeks time to the Opponys, from thence they were a month crossing y^e mountains to Souanouka's where they sold him.

"A party of y^e Souanouka's comeing northward under the foot of y^e mountains took him with them, there were of y^e Souanoukas, 6 men 2 women & 3 children, he continewed with them about 6 weeks, & they pitched thier Camp on y^e branches of Rapahan: River where they pierce y^e mountains, then he ran away from them keeping his course E b S & E S E. Crossing 3 branches of Rapahan: River & thrice crossing Mattapany till he fell in upon Andrew Clarks house which he went up to & surrendered himself to y^e people they being frightned Seized upon him violently & tyed him tho' he made no manner of Resistance but shed tears & shewed them how his hands were galled and swelled by being tyed before; where upon they used him gentler & tyed y^e string onely by one arme till they brought him before L^d Coll^l Walker of King & Queen County where is at liberty & stays verry contentedly but noe body can yet be found that understands his language.

"Postscript [1000] after some of his Country folks were found servants [1000] he was sometimes ill used by Walker, became very melancholly after fasting & crying several days together sometimes using little Conjuratⁿ & when warme weather came he went away & was never more heard of."

Many of the towns through which the path led have been identified; but others cannot be traced.¹

The towns, beginning with Towasa, are:

1. *Toívasa*. The narrators of the De Soto expedition relate that on the 12th of September, 1540, they reached the town of Toasi, at some point eastward of where it was situated in 1707. "Too-wosau, is three miles below E-cun-cha-te, on the same side of the river [A-la-ba-ma] a small village on a high bluff." — Hawkins, p. 36.
2. *Socsoóky*. Not identified.
3. *Apéicah*. "Au-be-coo-che . . . This town is one of the oldest in the nation; and sometimes, among the oldest chiefs, it

¹I desire to express my indebtedness to Mr James Mooney of the Bureau of American Ethnology, for assistance in the identification of the various names. The works quoted are: A. S. Gatschet, *A Migration Legend of the Creek Indians*, vol. 1, Phila., 1884; vol. 11, St. Louis, 1888. Benjamin Hawkins, *The Creek Confederacy*, in Coll. Georgia Hist. Soc., vol. III, pt. 1, Savannah, 1848.

gives name to the nation, Au-be-cuh." — Hawkins, pp. 41-42. "Ábi'hka . . . one of the oldest among the Upper Creek towns. . . . It certainly lay somewhere near the Upper Coosa river." — Gatschet, vol. 1, p. 124.

4. *Jábon*. Not identified.

5. *Alabáchehati*. Not identified.

6. *Tallapoúsa*. Tallapoosa, a term usually applied to the Upper Creeks, although there may have been a town of that name.

7. *Tockhóusa*. Not identified.

8. *Cheerwóole*. Probably *Ho-ith-le Waule*, which stood on the right bank of the Tallapoosa. — Hawkins, p. 32.

9. *Caúeta*. "Kawita, a Lower Creek town on the high western bank of Chatahoche river, three miles below its falls. The fishery in the western channel of the river, below the falls, belonged to Kawita, that in the eastern channel to Kasi'hta." — Gatschet, vol. 1, p. 134. "Cow-e-tugh, on the right bank of Chat-to-ho-che, three miles below the falls, on a flat extending back one mile." — Hawkins, p. 52.

10. *Awhissie*. Not identified.

11. *Onquáney*. Possibly the Okoni, who appear to have moved from place to place and to have lived, at an early time, on Oconee river, in the eastern part of Georgia.

12. *Okfusky*. "Okfuski (better Akfaski), an Upper Creek town, erected on both sides of Tallapoosa river, about thirty-five miles above Tukabatchi. . . . In 1799 Okfuski (one hundred and eighty warriors) with its seven branch villages on Tallapoosa river (two hundred and seventy warriors) was considered the largest community of the confederacy." — Gatschet, vol. 1, p. 139.

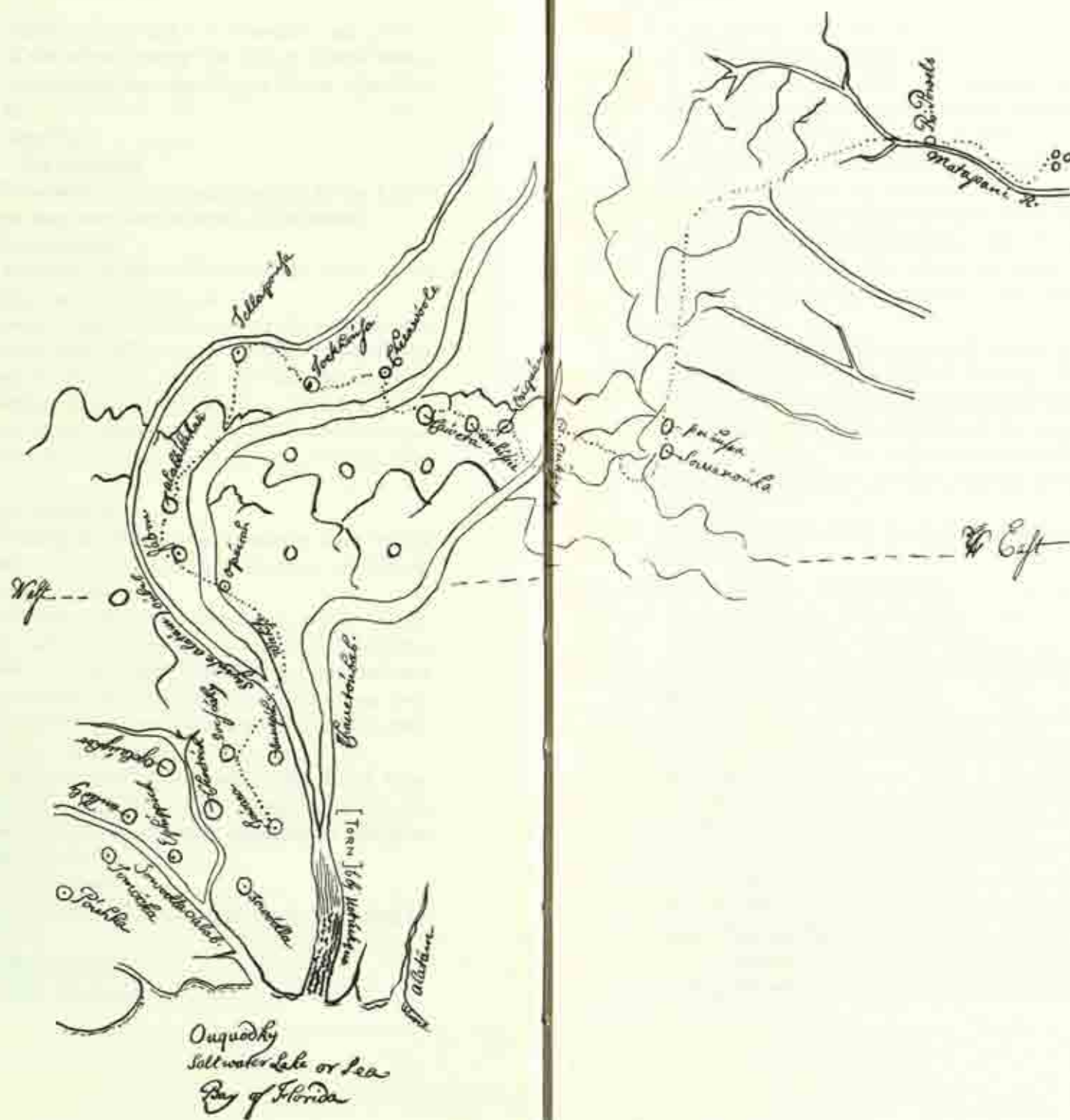
13. *Sovanóuka*. Referring to the Shawnee. (The Creek form is *Savanogi*, the Cherokee *Sawanuki*.) The village is shown on the map east of the mountains and evidently represents a Shawnee settlement on upper Savannah river.

14. *Pochússa*. Not identified.

The towns through which Lamhatty passed, were, according to the text:

1. *Towassa*. (On map Towasa.)

2. *Apeikah*. (On map Apéicah.)



MAP SHOWING THE ROUTE OF LAMHATTY FROM TOWASA IN 1707.

(From the Original Manuscript in possession of the Virginia Historical Society.)

3. *Jābon*. (On map Jābon.)

4. *Tellapoúsa*. (Same on map.)

5. *Opponys*. (Possibly the Oūquāney on the map. They may also have been the Saponi of North Carolina.)

6. *Souanouka's*. (On map Sowanoúka.)

In addition to the towns already mentioned as having been on the route followed by Lamhatty, there are eight others bearing names. As all are shown to have been situated in the southern part of the country, they, together with Towasa and Socsoóky, may have constituted the ten nations, or rather bands, of the Towasa which are referred to in the text. The names of the eight towns are :

1. *Poúhka*. Hawkins (p. 36), refers to a small town called *Pau-woc-te* near the later site of Towasa. This may be the same as Poúhka, and if so the two were probably removed at the same time, as they are shown close together on the map in 1707.

2. *Tomoóka*. This may refer to a settlement of the Timucua, originally resident in northern Florida, known to the English as Tomoco.

3. *Sowóolla*. May possibly be Saw-woo-ge-lo. (Hawkins, p. 65.)

4. *Aulédy*. Not identified.

5. *Ephippick*. Not identified.

6. *Ogolaúghoos*. Not identified.

7. *Choctóuh*. Possibly the village of the Chato or Chatot tribe, afterward settled near Mobile.

8. *Sonepáh*. Not identified.

Several other towns are indicated on the map, but no names are attached to them.

Ouquódky is given as the name of the Gulf of Mexico.

Names are given various streams as :

1. . . . *bly Netúckqua*. Evidently the Appalachicola.

2. *Chauctoúbab*. The position of this river on the map corresponds with that of the Flint, which, together with the Chattahoochee, forms the Appalachicola.

3. *Wichise*. If the hypothesis be correct regarding the two preceding streams, this must necessarily refer to the Chattahoochee.

The name is probably identical with that of Ochesí, a Lower Creek or Seminole town of the lower Chattahoochee region.

4. *Sowóolla-óubab*. Not identified.

5. *Sayehle Alatám óubab*. Not identified.

6. *Alatám*. This may be Duck river, on later maps.

7. *Matapani*. The Mattapony, which, with the Pamunkey, forms the York river, in Virginia.

8. *Rapahan*. Probably the Rappahannock.

The names are in the Hitchiti dialect, the suffix *oubab* evidently meaning river, or water.

The principal value of the manuscript, aside from its general interest, is the reference to the dissolution of the Towasa tribe, which in Hawkins' time (*ca.* 1799) we find incorporated with the Creeks. Also it throws new light on the size of that nation. It is said that during the year 1705 the Towasa moved to Mobile, to be near the French:

"At the beginning of this year 1705 a savage nation called the Touachas came to M. Bienville at Mobile to beg of him a place in which to establish themselves; he marked out for them a place at a distance of one league and a half below the fort where they remained as long as we were established at Mobile."¹

The slight variance in dates does not detract from the value of the manuscript: it must be remembered that it was written by an Englishman, as told by an Indian, far from the places mentioned.

II. CAWETA IN 1740

As Caweta was mentioned as being on the route followed by Lamhatty in 1707, the following brief account of a visit to that town thirty-three years later is of special interest. The description forms part of an unpublished manuscript in the British Museum (Stowe, 792), which is a journal kept by a member of General Oglethorpe's expedition to the Creek towns in 1740. Only the portion relating to the Indians is quoted:

"We camped at Ocmulgas River where are three mounts raised by the Indians over three of their Great Kings who were killed in the wars . . .

¹ Margry, *Decouvertes*, Paris, 1883, pt. v, p. 457.

"Aug 8th We encamped about two miles from the Indian town. The Indians sent Boys and Girls out of their Town with Fowls, Venison, Pompions, Potatoes Water Melons & Sundry other things.

"About ten of the Clock we set forward for the Indian Town & were met by the Indian King and some of their Cheifs. The King had English Colours in his hand. We Saluted them & they returned our Salute and then shaking hands with the General & Company. The King very gracefully taking him by the Arm led him towards the town & when we came there they brought us to Logs which they had placed for that purpose covered with Bears Skins and desired us to sit down which when we had done The head Warriors of the Indians brought us black Drink in Conk shells which they presented to us and as we were drinking they kept Hooping and Hallowing as a Token of gladness in seeing us. This Drink is made of a leaf called by the English *Casena* (and much resembles Bohea Tea)¹ It is very plenty in his Country, afterwards we went to the Kings House or rather Hut where We Dined. at night we went to the Square to see the Indians dance.

"They dance round a large Fire by the beating of a small Drum and Six men singing, their Dress is very wild & frightful, their faces painted with several sorts of colours, their hair cut short except three locks one of w^{ch} hangs over their Forehead like a horses fore top. They paint the short Hair and stick it full of Feathers. They have Balls [? bells] and rattles about their Waist and several things in their hands.

"Their dancing is of divers Gestures and Turnings of the Bodies in a great many frightful Postures.

"The women are mostly naked to the waist wearing only one short Peticoat w^{ch} reaches to the Calves of their Legs. Their Houses or Hutts are built with Stakes and Plaistered wth clay Mixed with Moss which makes them very warm and Tite. They dress their Meat in Large pans made of Earth and not much unlike our Beehives in England.² They do not make use of Mills to grind their corn in but in lieu thereof use a Mortar made out of the Stock of a Tree which they cut and burn hollow and

¹ *Casena*, or Black drink, was prepared by many Southern tribes from the leaves of *Ilex cassina*. Conch shells, large univalves, were used as drinking cups. Mr Clarence B. Moore found remains of such cups in mounds in Alabama (*Moundville Revisited*, 1907, p. 395). Many writers refer to the use of shells and the drink, and one of the best accounts is in Haywood's *Natural and Aboriginal History of Tennessee*, Nashville, 1823, p. 156.

² Mr Holmes has illustrated various examples of large earthen vessels, from the southern Appalachian area, with rounded or pointed bottoms. These, if inverted, would closely resemble the old style conical beehives even now used in rural England.

then Pound their Corn therein and when its pounded sufficiently they separate the husks from the meal by Sifting thro' a Sieve made of Reed or Cane . . .

"Aug the 12th We set out from this Town which belonged to the *Couettan's* [*Cow-e-tuh*.—Hawkins, p. 52] to go to a Town of the *Causettans* [*Cus-se-tuh*.—Hawkins, p. 57]."

WASHINGTON, D. C.

SOME SENECA CORN-FOODS AND THEIR PREPARATION

By M. R. HARRINGTON

The object in preparing this paper is to set forth the principal native methods of corn preparation still in use among the Seneca Indians, as told me by the people themselves during my various sojourns among them on their reservations in western New York, without any attempt to treat the subject from the historical standpoint or to make a compilation from various authors.

Our earliest evidence of the use of corn among the Iroquois, of whom the Seneca form a part, is found on their ancient village sites, occupied before the white man came; and consists of abundant charred corn, with occasional cobs, husks, and stalks, found in ash-pits and other places favorable to their preservation. Then we have the historical accounts from the early missionaries, traders, and soldiers who passed through the Iroquois territory; and finally the work of more modern students, such as Morgan, writing in 1850, who briefly describes or alludes to several recipes which differ little if at all from those in use to-day.¹ Taking into consideration the nature of the recipes given in this paper, the conservative habits of the Indians, and the facts alluded to above, it is probable that many of them may reach back into prehistoric times.

Several distinct varieties of corn (maize) are commonly used by the Seneca, and I have found at least nine kinds of beans, all claimed by the Indians to be of native origin. Their great staple is *onñhoñgān*,² or 'white corn,' sometimes called Tuscarora or "squaw" corn. The ear is often of good size; the grains white, smooth, of dull luster, and rather soft; the taste delicious when eaten green on the cob, cooked as hulled corn, or prepared in the

¹ *Regents' Report on New York State Cabinet of Natural History*, 1850, pp. 73-75.

² In transcribing Seneca words I have endeavored to use the Iroquois alphabet published in J. N. B. Hewitt's *Iroquoian Cosmology*, *Twenty-first Ann. Rep. Bur. Am. Ethnology*, pp. 139-140.

numerous other ways known to Seneca cooking. Similar, but red in color, is *gwé' dā'*, or *wé' dā'*, generally used for the same purposes; while another form ripens earlier and bears shorter ears than either the white or red varieties. On account of its frequent dark, almost black, color this is called *onèn' oñdjt'* ('black corn'). In his article previously referred to Morgan writes of red corn as being used especially for parching in preference to the other soft varieties; but of this I heard nothing among the present Indians.

The fourth variety, *hégowa*, or flint corn, while very different from the preceding, is much esteemed by the Indians, who use it for making hominy. It is white or variegated in color, with very hard lustrous grains, while the ears are inclined to be dwarfish. As in the other varieties of corn it is braided into strings by means of the husks shortly after harvesting, and in this form hangs picturesquely from the owner's roof-beams until used. Among the Oneida the husked ears are sometimes kept in a tall egg-shaped storage basket. At the time of some of the more important Iroquois ceremonies one may sometimes see a string of flint corn hung as an offering outside the "long-house" where the dances take place.

The nine or more varieties of beans vary in size from that of a small pea to a large lima bean; in shape some are globular, some flat, some long and cylindrical, some ordinary bean-shape; while in color some are solid blue, others brown or yellow; some are blotched, and others are striped or speckled with reddish or bluish tints. Each variety has its own name, and some are considered especially valuable for certain purposes. One rarely sees beans worked alone; they are usually mixed with corn foods, which fact leads me to mention them here. Fresh wild strawberries, or dried blackberries, elderberries, or huckleberries are often similarly employed to give zest and flavor to hominy or to corn bread.

As one walks about near the "long-house" on any of the reservations, in the vicinity of which the more conservative people like to make their homes, a monotonous hollow thumping is frequently heard—the sound of the Indian grist mill, the great wooden mortar which is one of the most important utensils of every "pagan" family and is frequently found even in the more progres-

sive households. It is a section of a tree trunk of some tough wood and stands about two feet high. In one end a deep symmetrical cavity has been excavated with the aid of fire, and in this the women pound their corn by means of massive four-foot wooden pestles (*he'tgên'khā'*), preferably of maple. When not in use the *ga'niga'ta'*, as the Indians call the mortar, stands near its owner's door, inverted to keep out the rain and dust. Both mortar and pestle are shown in use in figures 125, 130.

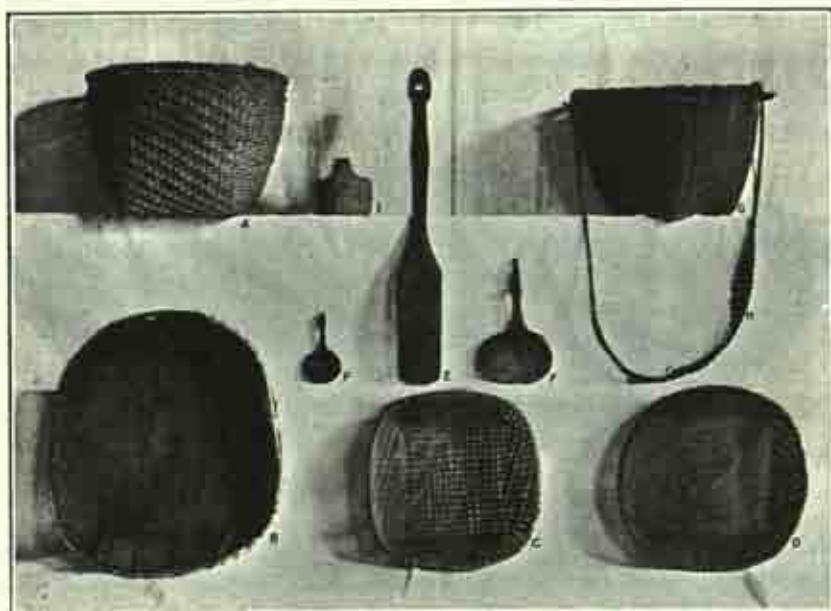


FIG. 123. — Seneca utensils for preparing corn. (A, Hulling basket. B, Elm-bark tray. C, Hominy sieve. D, Meal sieve. E, Stirring paddle. F, F, Ladles. G, Harvest basket. H, Burden strap. I, Salt basket.) Peabody Museum collection.

Another important utensil for corn preparation is the hulling basket, *yegai'doā'thā'*, a somewhat cylindrical affair of narrow thick splints well put together, with the bottom of openwork too small to permit a grain of corn to pass through (fig. 123, A). The twilled weave of the sides is not only ornamental but forms a corrugated surface which helps to remove the hulls from the grain in the process to be described later. Figures 128-131 also show the hulling basket.

Two gaps on opposite sides just below the rim usually serve for handles; but at Tonawanda a regular wooden basket handle is often put in — apparently a modern innovation. A hulling bag of archaic form, used in a similar manner, still survives among the Mohawk of the St Regis and Caughnawaga bands. It is made of three sets of bass-wood bark strips, woven together so as to produce hexagonal openings like those in the seat of a cane-bottom chair, but too small for corn to pass through. The rim of this bag is either a thick hoop of bark fibers firmly bound together, or a hoop of splints.

Of construction similar to the splint hulling basket, but with low sides, is the hominy sieve basket (fig. 123, C), *oné'yastowánēs*, the bottom mesh of which will permit only cracked corn of a certain size to pass through. At Allegheny reservation this is sometimes

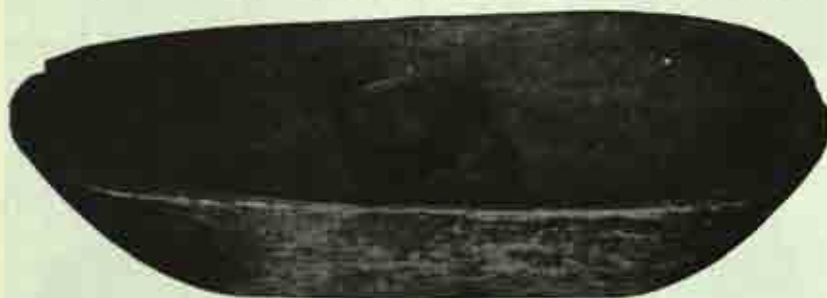


FIG. 124. — Stone corn crusher with wooden bowl; Oneida. (Collection of E. T. Tefft.)

made in hexagonal form with a different weave, resembling, although splints are used, that of the Mohawk bark hulling bag just described, which is itself sometimes used as a hominy sieve. Another sieve (fig. 123, D), called *nyo'nyo'sthasā'*, which has now almost universally given place to the ordinary wire article, was made like the first hominy sieve mentioned, only very fine, and was used to sift the corn flour when taken from the mortar, as shown in figure 131. Both sieves may be seen in figures 129 and 130, while in figure 125 the modern wire sieve is shown on the heap of flour in the wooden bowl to the left.

A flat stone slab and a rounded cobble are sometimes used as mortar and poulder for crushing green corn, as will be described later. Probably the shallow stone mortars and cobblestone mul-

lers frequently found on ancient sites sometimes served the same purpose. When in use these stones were placed in the middle of a wooden or bark bowl. In the collection of E. T. Tefft, Esq., of New York City, is a complete set of this kind (fig. 124), comprising bowl, mortar, and muller, collected by the writer from the Oneida Indians, near Oneida, New York. The bowl is of the oval wooden variety, the mortar a rectangular slab measuring about 6 by 4 $\frac{1}{2}$ inches, and 1 $\frac{3}{4}$ inches in thickness, while the muller is circular, about 4 inches

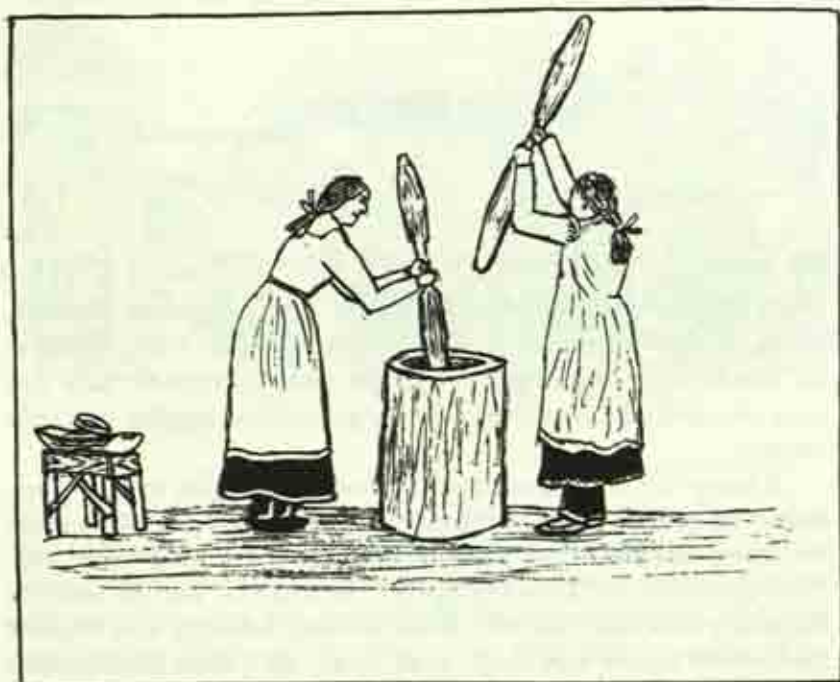


FIG. 125. — Indian women pounding corn. (Drawn by Jesse Cornplanter.)

in diameter, and resembles those commonly found on Iroquois sites. This has been carefully worked into shape. Both slab and muller show indications of long use. The bark and wooden trays, both called *gā'ōn'wā'* in Seneca, were also used for mixing and serving corn bread. The bark tray or bowl (fig. 123, B), now becoming rare, is made of a piece of elm-bark neatly folded at the ends to make a shallow bowl, sometimes round, sometimes long, held firm and rigid

by sewing to a double hoop at the rim. The wooden *ga'on'wa'*, rarer still, is generally oval in shape and usually carved from "cucumber" wood. One of the former may be seen on the mortar in figure 131, while the wooden variety is represented on the stand to the left of figure 125.

Another implement used in the preparation of green corn was the scraper (*yega'so'gāya'tha'*), made from one of the rami of a deer's lower jaw by simply removing the projecting processes back of the teeth (fig. 126). This was for scraping the corn from the

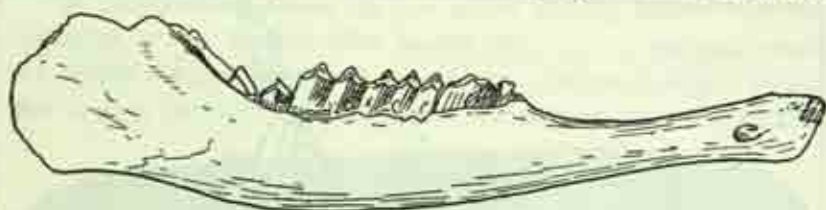


FIG. 126. — Scraper for green corn; Cayuga.

cob. It is frequently found in ancient Iroquois refuse deposits. Mr A. C. Parker, the State Archeologist of New York, who was the first to bring this implement to the writer's attention, says that corn prepared with its aid is called by a name that signifies "already chewed."

Among the other accessories of corn preparation may be mentioned the *gatgūn'iashā'*, or paddle (fig. 123, E), often used to move the loaves of corn bread when boiling and for stirring corn soup. Plain specimens are shown in figures 127 and 128, but the article is frequently elaborately carved. Broad wooden ladles (fig. 123, F) called *ado'gwashā'*, some very large, some small, with short handles often surmounted by bird or other animal carvings, are used, the former for dishing, the latter for eating some corn foods; and there are still extant a few bark spoons and scoops, and small dishes of elm-bark or wood that doubtless served similar purposes. A bottle-shaped basket called *yedjikhē'da'kwā'* (fig. 123, I), made of corn-husks by the twining process and furnished with a corn-cob stopper, was used for holding salt in former days, but now has passed nearly out of use. Small wooden salt bowls are sometimes seen.

Corn is still planted from a little basket called *yāndūshinun'da-*

khwa', slung from the shoulder or tied around the waist by a strip of cloth; and is often harvested in a larger "pack-basket" (fig. 123, G; also shown on the bench in fig. 127), carried by means of a burden



FIG. 127. — Preparing for the Green Corn dance. (Drawn by Jesse Cornplanter.)

strap, *gus'ha'* (fig. 123, H), made of slippery-elm bark cord by twining, and passed across the chest, forehead, or shoulder of the harvester. This basket, called *yāntge'dastha'*, is usually very well made, with graceful curves, and, especially in the older specimens, with very narrow cross splints on the sides. The long tapering ends of the burden strap are tied through two holes placed near together just below the rim of the basket, generally (at Tonawanda) by means of a special variety of bow-knot.

In a Seneca corn series furnished to the American Museum of Natural History I included a square, low-sided basket tray, made of very broad splints, and used to hold berries and green corn set out to dry in the sun.

All boiling of corn foods is now done in iron kettles (figs. 127, 128) or even tin wash-boilers when it is handiest to use a stove and



FIG. 128.—Seneca woman boiling corn, showing use of paddle, crane, and wooden pot-book.

there are many to provide for ; but in former days the pot of baked clay prevailed, as may be seen from the thousands of pottery fragments and occasional perfect specimens found on the ancient village sites. Another modern innovation is the substitution of pork for venison and bear meat, and of common for maple sugar, as ingredients for corn foods.

The most popular Indian dish among the Seneca to-day is undoubtedly *o'no' kwa'*, or hulled-corn soup. Seldom do the Indians, sagan or Christian, meet for any function, be it a session of the pecret medicine society or a church social, a war-dance or a Sunday afternoon gathering, without a great kettle of *o'no' kwa'*, hot and savory, to regale the crowd. Everyone comes provided with a pail or pitcher to "old style" religious dances and ceremonies, knowing that when all is over the pails will be ranged around the great kettle and will be filled, a ladleful at a time, each in turn around the circle until the *o'no' kwa'* is exhausted. A stranger boarding with an

Indian family often gets his first notice of a ceremony the night before from the *o'no'kwá'* served at breakfast. The recipes for making this dish vary slightly; but the following, collected at Tonawanda from Mrs Peter Sundown (*Géht'dé'*), will serve as a model.

A crane is first put up, either three poles leaned together in classical Gypsy style, as shown in figure 128, or more frequently two uprights and a cross-piece arranged as in figure 127. From this a large iron kettle, previously thoroughly scoured, is hung by a chain or by a pot-hook made by twisting the small end of a water-beech sapling into a withe to go over the crane, while the other end, with its projecting stumps of branches, serves as a hook, as shown in the illustrations above referred to. When the water in the kettle begins to bubble, shelled white corn is put in and allowed to simmer until it is well swollen. At this point, sifted hardwood ashes are put in, the proportion being about one quart of ashes to a gallon of water. An old hominy sieve basket is frequently used to sift the ashes. The mass is then boiled until the black pips of



FIG. 129.— Seneca woman washing corn, showing use of hulling basket.

the corn loosen and may be seen floating about in the kettle, and the hull slips easily when the grain is rolled between the fingers. Now comes the work of the hulling basket, into which the mass is poured and allowed to drain; then put into a vessel of fresh water, or a running stream, basket and all, as seen in figure 129, and vigorously shaken and stirred with the paddle until the hulls and pips have floated away and the corn is sufficiently washed.



FIG. 130. — Seneca woman pounding corn for bread. Both kinds of basket-sieve and the hulling basket are shown, besides the mortar and the pestles.

Again the kettle is cleaned, filled with fresh water, and the corn put in and boiled until fairly soft, when it is washed again, removing the last trace of lye. At this stage the hulling process is complete and the corn is ready to be made into either bread or *o'no' kwa'*, which latter process will be described first.

During the last part of the process pork or beef has been cooking, and is now combined with the corn, broth and all, and beans added as desired, after which all are cooked together until the meat and beans are done. The result is *o'no' kwa'*, or corn soup, which is

then seasoned to taste and eaten—a delicious if troublesome dish. I have known the first boiling, including the lye, to take three-quarters of an hour; the second, half an hour: about an hour and a half in all for the hulling process. A Cattaraugus variant, obtained from Mrs Thomas Silverheels, states that the ashes should be boiled in the water first, and the corn not put in until the water loses its slippery feel and acquires a sharp biting taste. In other respects the formula is the same, except that Mrs Silverheels specifies that while the first boiling ought to be slow, the second should be fast. She is the woman seen in figures 128-131.

Next to *o'no' kwa'* in importance is *gagai'te' oā' kwa'*, or boiled corn bread, whose base is the hulled corn first described. *Gēh' dē'* (Mrs Sundown), my Tonawanda informant, hulls the corn in just the same way for both *o'no' kwa'* and bread, except that she puts the ashes in *before* the corn when making bread, as in the Cattaraugus recipe noted above. Mrs Silverheels makes no distinction between bread and *o'no' kwa'* when hulling corn. Once hulled and washed, the corn is put in the mortar and pounded into flour, as shown in figures 125 and 130. As the work progresses the fine sieve comes frequently into play, as seen in figure 131, and the coarser part put back in the mortar each time to be still further reduced. When the flour has become soft and fine—as nearly as possible under the circumstances—it is placed in a bark or wooden tray (see figures 125 and 131), or, more commonly nowadays, a tin pan, and mixed with hot water until it becomes a thick dough; then the hands are moistened with cold water and used to slightly knead and mold it into discoidal loaves, or "wheels," each about six inches in diameter and two inches thick. Each loaf is then lifted upon the wooden paddle and lowered into boiling water, where it is turned on edge and supported until it becomes firm enough to hold its shape in the bubbling fluid. Three loaves may be cooked at once in a six-quart kettle. The cooking lasts about an hour, or until the loaves show a tendency to leave the bottom of the kettle and float—an indication that they are done. The bread is sliced and eaten hot or cold with meat gravy, maple syrup, or butter, which last is now commonly used by the Indians. Frequently dried huckleberries, blackberries, or elderberries, or, still more

often, beans, are cooked and mixed through the flour before it is moistened, adding much to the flavor of the finished bread. The Cattaraugus recipe from Mrs Silverheels is similar to the above, with the exception that cold instead of hot water is used to moisten the flour before kneading. While boiled bread is of course absolutely heavy and can be eaten only in limited quantities, it has



FIG. 131. — Seneca woman sifting corn flour through fine sieve-basket into a bark tray.

more of the pleasant flavor of corn than any other dish I have ever tasted.

Most popular among the Seneca after *o'no'kwā'* and corn bread is *onon'dā'*, or hominy, an article infinitely superior in taste to anything of the hominy sort that can be bought at the stores. At certain feasts, such as the Strawberry Dance, *onon'dā'* takes the place of *o'no'kwā'*. Flint corn forms its base, and the recipes are the same at both Tonawanda and Cattaraugus. A hominy basket full of shelled flint corn is put in the mortar and moistened with a cup

of cold water; then the pounding begins, slowly at first, to loosen the hulls, then fast and hard until the corn is broken small enough to go through the coarse sieve basket seen in figure 123, c. It is then shaken in a pan or a bark tray until the hulls come to the top and for the greater part can be removed. From this the corn is thrown into a kettle of boiling water and cooked slowly for about four hours, with frequent stirrings and occasional skimmings to remove the hulls which still come floating up from time to time. At the end of two hours beans are put in, preferably the slender cylindrical yellowish variety, with purple spots, called *degáhahad*. For the feast of the Strawberry dance, the wild berries are added somewhat later. The hominy is sometimes sweetened before eating.

Parched corn, or *oshú'wā'*, was in former days a very important article of Iroquois diet; but at the present time it is used mainly at certain ceremonial functions, such as those of the *Djadego'sasó'*, or False-face Company (an Indian society), and but rarely at other times. White corn, or one of its two before-mentioned substitutes, is shelled, shaken in a basket to remove dust and husk chaff, and browned in a hot dry kettle or pan, when it is constantly stirred with the paddle to prevent burning. After this the mortar and fine sieve make short work of reducing it to meal, *oshú'wā'*. In the old times this meal, mixed with maple sugar and carried in a pouch, formed the great staple of warriors and hunters on long marches, on account of its portability, sustaining power, and pleasant flavor. A little *oshú'wā'*, the Indians say, eaten by the side of some spring or brook which could furnish water for mixing and frequent drinks, would give almost the effect of a hearty meal. When used at the False-face functions the parched-corn meal is made into a mush or pudding (*oshú'wā' odjt'skwa'*) by stirring it into previously sweetened boiling water, slowly to avoid lumps, and cooking for fifteen or twenty minutes. Not infrequently fried meat with its gravy is added to the mush while cooking; in which case, I understand, the sweetening may be omitted.

A variant of corn bread, but less frequently used, is *degand'ho's-dya'ko'*, or Indian wedding bread, made like the ordinary variety; but instead of being shaped into the usual round loaves it is molded into the form of two smaller ones, covered and fastened together

wheel-fashion with corn-husks as shown in figure 132, *c*. A number of these are made by the bride's mother at an Indian wedding, and are intended for a sort of feast at which the bride's parents and the young couple eat together. Perhaps the two little loaves bound together were originally symbolic of marriage, but I have no definite evidence on this point.

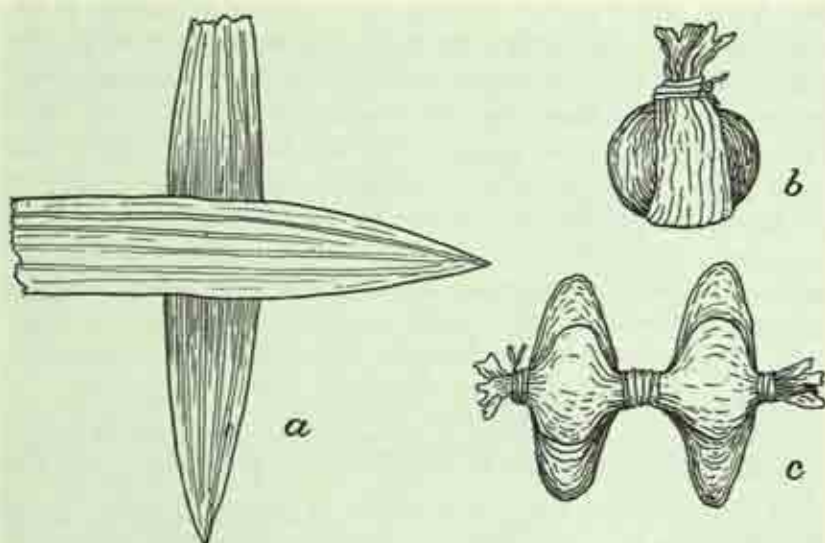


FIG. 132. — *a*, *Onú'tcida'* package of corn-leaves begun. *b*, *Onú'tcida'* package finished. *c*, Wedding-bread package.

Still another variant, now rarely used, is called *ogé' go'ka oá'kwá'*, and is made in the same way as corn bread but without the admixture of beans or berries. When the loaf is shaped, it is placed in a cavity prepared for it in the bed of an open fire, and covered with coals and ashes to bake. I did not learn how long this process takes, nor how the cook knows when the bread is done.

Gantó'té'dó' oá'kwá' is another very rare form of Indian corn bread, and is the variety most resembling that of the whites. In this case white corn is pounded to a meal in the mortar without previous preparation, and sifted through the fine sieve, then mixed with water and buried in a covered pan among hot ashes until done.

This finishes the recipes obtained for preparing ripe corn; the remaining dishes are made only with green or just ripening grain.

For the first of these, *uista'onon'dä'*, an interesting combination of primitive utensils is used—a large elm-bark or wooden tray in the middle of which is placed a flat stone some eight or ten inches square (fig. 124). As might be expected, the bark tray is now frequently supplanted by a large tin pan. Shelled white corn, just ripe enough to be fairly firm, is crushed on this stone, a few grains at a time, by means of a rounded cobble of proper size to fit easily in the hand. As fast as the grains are crushed they are swept off into the tray until a sufficient quantity is obtained, when they are placed in boiling water with sugar or meat and cooked about half an hour. The meat if used must be pretty well cooked before the corn is put in.

Another green-corn dish is *onñ'tcīda'*, made when the corn is somewhat younger than in the last case. After husking, the corn is removed from the cob with the deer-jaw implement before described (fig. 126), the toothed part being used for the rough scraping, the sharp-edged anterior portion for removing the leavings. This was the old style. At the present time the rows of kernels are usually split and shaved off with a knife. Once removed from the cob the corn is then pounded a little in the mortar. Two broad corn leaves are crossed (fig. 132, *a*), and three of the ends drawn together to form a sort of pocket, which is filled with crushed corn and tied into a little package (fig. 132, *b*). Many of these are made and put in hot water to boil half an hour or more, after which they are allowed to cool somewhat, then are opened and eaten with butter, which doubtless takes the place of the fats and oils of earlier times.

A very simple soup is also made by boiling green corn cut or scraped from the cob in a similar manner.

When the *onññgān'*, or white corn, is well in the milk a trench is sometimes dug, about ten feet long, eighteen inches wide, and a foot deep, in which a good fire of small wood is built. Over the ditch near its ends are placed two green cross-pieces of wood, upon which the two lengthwise poles are placed, as shown in figure 133. Against these longitudinal poles are laid many ears of corn to roast, which are kept turning until thoroughly done. Then the kernels are shelled off and dried perfectly hard, sometimes with the aid of the flat basket previously mentioned, and stored in bags until needed. From this roasted dried green corn a dish called *onon'dä' o'no'kwä'* is

prepared by boiling the hardened grain about three-quarters of an hour, then putting in some kind of meat and boiling for an hour or more until done. All this boiling must proceed slowly. The Indians claim that this kind of corn soup is especially good in cold weather.

The last recipe obtained was for a green-corn dish called *ogo'sā' oā'kwa'*, which is prepared as for *ona'tida'*, with the exception that the pounded green corn when taken from the mortar is not done up in corn leaves, but is baked brown in a common baking dish placed in the oven of a modern stove, now owned by most of the Indians. The cake is removed from the oven, dried, and broken

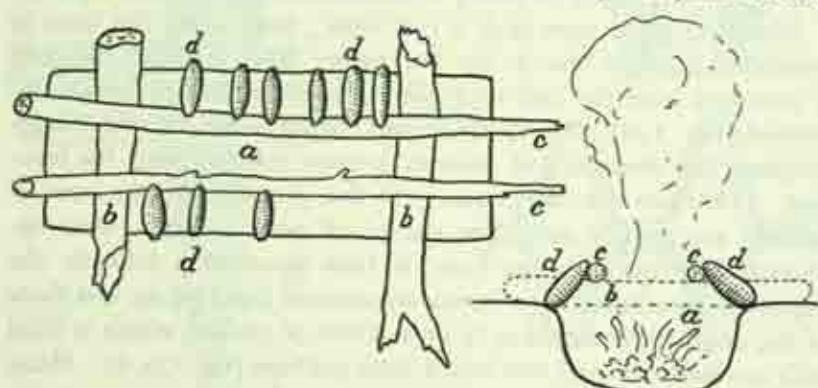


FIG. 133. — Ground plan and section of roasting pit. (a, Fire-pit. b, Cross-logs to support longitudinal poles. c, Longitudinal poles to support corn. d, Roasting-ears of corn.)

into small pieces, which are stored for future use. When needed the corn is boiled soft and eaten with meat gravy as one would eat beans. This recipe seems at sight to be of modern invention, but a glance at Morgan's article, before mentioned, shows that it was extant in his time, about 1850. It appears that the modern oven baking, however, has supplanted baking in pans or in earthen dishes placed directly on the fire — probably in the ashes.

It cannot be denied, in concluding, that the Iroquois as a people are rapidly discarding what remains of the old life and customs. For this reason it would seem that any remnant of information that may still be obtained, especially when it relates to such an important matter as their ancient use of corn, their great staff of life, and the Indian's best legacy to civilization, is well worth the saving.

NEW YORK CITY.

THE GROUNDWORK OF AMERICAN ARCHEOLOGY

By EDGAR L. HEWETT

In American Archeology man in the cultural process is the unit of investigation. This establishes the limits of the science. Its subject matter lies mainly in the prehistoric period, but this must be studied in the light of auxiliary sciences which have for their field of investigation the living people. It necessitates the study of all phenomena that will add to our knowledge of the intellectual attainments of the native American races or illustrate the evolution of their culture. It aims at a reconstruction and interpretation of the order of civilization existing in America before the Caucasian occupancy.

Nowhere had these races attained to the art of literary expression, though in Central America they were verging upon it. The record of their progress must be sought, first, in the remains of their material possessions; second, in survivals of their intellectual achievements written and unwritten, and, third, in the recorded observations of eye-witnesses to scenes and events of the historic period. Their arts afforded a means of lasting self-portraiture. These display the common abilities and common beliefs of the people and reflect the racial progress. They illustrate the gradual conquest of mind over natural forces and materials. Architectural and industrial remains illustrate the evolution of the social order. Sculptural and pictorial remains display the stages of development of the esthetic sense, and, through the symbolism in which they are expressed, embody the common conceptions of things spiritual, the early phases of the upreach of mind, the first efforts to enlist the aid of supernatural beings—in short, all the primitive methods of attacking the fundamental problems of existence. While entirely racial at this stage, results in individuation are foreshadowed. In primitive arts we have the mirror of the racial mind.

There are also recoverable remains of the intellectual possessions of the ancient Americans in the form of survivals of archaic cere-

monies, rituals, and traditions of living tribes. These are vital to the understanding of the life and history of the people, and because they reflect the inventional, esthetic, societary, and sophic processes through which the highest cultural achievements of the past were reached, they furnish keys to the interpretation of conventional modes of expression. For the same reasons it often becomes necessary to investigate the history and structure of languages among living tribes situated in such proximity to ancient cultures that historical relationships may be suspected. For information on questions of racial affinity, the aid of somatology may be invoked. However, our province is mainly the study of cultural phenomena and limits.

The history of any surviving group of native American people may be divided broadly into two epochs. The first represents a vast reach of time, during which the autochthonic character of the race was unfolded, a period of racial isolation, of unadulterated culture. The second begins when the group is touched by outside racial influences. This represents at most a period of four centuries, its beginning depending upon the time when Caucasian influence penetrated the group in question. Until the racial isolation was broken by the coming of the Spaniards, bringing in new industrial methods, new incitements to activity, and new ideals of achievement, the simple ethnic mind had not been an object of contemplation to itself. Unconscious of its limitations or of its status in culture, because ignorant of any other, its expressions in the form of arts, ceremonies, and symbolism were perfectly naïve. With the coming of the Spaniards a period of racial self-consciousness began. The simple process of unfoldment of culture gave place to the complex phenomena of ethnic mind acted upon for the first time by external stimuli of a most violent sort, and thus suddenly aroused to consciousness of its own operations and limitations. The quality of mind developed under such conditions is radically different from that developed under the influence of a definite natural environment only. There was immediate selection of esthetic, industrial, societary, and religious elements from the conquering race. Arts, industries, and social conditions underwent vital modifications. The ancient social and religious order was broken down and reorganized along new lines.

Ceremonies disintegrated with the passing of the clans in which they were developed. Primitive ritual took on numerous aspects of Christian worship which immediately resulted in the corruption of symbolism. The term acculturation, an adding to culture, describes the process that resulted in the present condition of the American aborigines.

The study of the phenomena of this epoch is more complex than that of the earlier period. The process of separating the recently acquired from autochthonous elements is laborious, and the chances of error numerous. Traditionary episodes, ceremonies, rituals, and symbolism must be subjected to critical analysis. However, there is a valuable residuum of facts of archaic culture resulting from the sifting.

The study of prehistoric archeology presents less complexity. Definite external surroundings give rise to definite efforts of the human mind to utilize, to overcome, and to account for them. The result is certain activities, the dynamic expression of the cultural process. The study of this process in the stage prior to the intrusion of any foreign elements, in the light of facts which ethnology lends to the interpretation of archaic phenomena, is a field comparatively free from the necessity of conjecture. The service which prehistoric archeology is capable of rendering to anthropology is comparable with that which paleontology renders to biology.

In the study of the historical development of the native American races, it becomes necessary to eradicate all political divisions and to find cultural limits instead. These coincide to some extent with natural boundaries giving rise to "culture areas." This term is used to designate a region in which some dominant type of cultural phenomena prevails to the subordination of all other types. Such an area is the so-called Pueblo region in the southwestern part of the United States. Numerous areas of this character are more or less clearly defined from Alaska to Central America.

All information that we possess at the present time tends to establish the fundamental unity of the American race and points to an evolution from lower to higher civilization. The time element in this process is by no means constant. The gap between the lowest and the highest ethnic groups might have been closed by a

generation or two of influence under favorable surroundings, or it might have required many centuries in the absence of such stimuli. In the flowing of populations that prevailed in prehistoric as in historic times, groups were segregated from parent stocks, carrying with them the ancient traditions, and as a result of isolation new and distinct seats of population arose, flourished, swarmed, and degenerated. While there were no means of storing up knowledge such as we possess, yet in the form of tradition it was transferred, replanted, and engrafted to such an extent that it may reasonably be doubted if any vital possession of the ancient races of America has passed into total oblivion.

It is necessary to investigate the fundamental causes of these specializations in culture, to ascertain and follow the direction of waves that flowed out to occupy new localities and influence other communities. The determination of affinities between widely separated regions requires long and laborious study of fixed remains in the field as well as of the movable antiquities to be found in the museums of the world, and together with the no less important investigation of the religious and social traditions which survived the shock of the conquest, calls for the correlated activities of many students and institutions.

Another important line of research in American Archeology is that of archive work. The records of those who had the opportunity to observe the native races at the beginning of the period of acculturation through contact with the intrusive race are of such a character as to be of great service. Voluminous as has been the publication of historical works on aboriginal America, there are yet archives of great extent in Mexico and Spain which have never passed under the eye of the historian. It cannot be doubted that much valuable material relating to the early historic period awaits discovery. The present time seems particularly opportune for undertaking the examination of the unpublished material in the Archives of the Indies and for the reëxamination of much that has been published in the past. In the early literature on America there is little that comes up to present-day standards of historical research. There is now great need for a reëxamination, in the light of present-day ethnological knowledge and by the critical methods

of modern historical research, of source material that has been much used in the past in historical and archeological interpretations. It is not sufficient that the archives be explored and unpublished documents correctly copied and given to the public. Discriminating analysis and critical comparison are necessary, if the truth about ancient America is ever to be recorded. It must be remembered that these are not the records of trained scholars seeking to make known actual facts. They are, on the contrary, the accounts of untrained observers biased by the excitement of conquest and moved to exaggeration by the desire to influence royal and ecclesiastical action at home.

The first task of the archeologist is to rescue the material and intellectual remains of the people whose history he is seeking to restore. It can never be hoped that a continuous record will be recovered, but the greater the amount of material secured the more nearly complete can it be made. But archeological research is more than the recovery and study of material. As history is not only a recital of events but an inquiry into their genesis, it is imperative to investigate and describe all phenomena upon which such events are conditioned. Therefore it is the belief of the writer that physiographic conditions are essentially correlative with facts of culture, that physical and psychic causes are to be held in the closest possible relation if we are to correctly interpret the intellectual remains of the native races of America, whether in the form of myth, ritual, and symbolism of plains and desert tribes, or in architectural, sculptural, pictorial, and glyphic remains of the Mexican and Central American civilizations.

ARCHAEOLOGICAL INSTITUTE OF AMERICA,
WASHINGTON, D. C.

THE EXCAVATION OF THE CANNONBALL RUINS IN SOUTHWESTERN COLORADO¹

By SYLVANUS G. MORLEY

The region of the Four Corners, that geographical monument which has the distinction of marking the only spot in this country where four states, namely, Colorado, Utah, Arizona, and New Mexico, meet at one point, is interesting also because of the surpassing opportunities which it presents for archeological research. The San Juan river and the cañons which its tributaries have cut for themselves in this part of the Great American Plateau offered a more suitable environment for the development of a primitive culture than for the support of our own race, of which a few stragglers only have been able to win a doubtful foothold in the arid cañons and on the barren mesas in which this region abounds. On every side, sometimes a two or three days' ride from known water, one encounters the shapeless piles of fallen masonry overgrown with sage, cactus, and piñon, which so eloquently testify to the former density of the aboriginal population: a density which the cattlemen of the country do not hesitate to affirm outnumbered that of the present day ten to one.

The several cañons of the San Juan drainage afforded in earlier times shelter to as many peoples, differing from each other in the minor points of their culture, such as the development of pottery decoration, the restriction of design to the geometric in one region, the tendency toward the realistic in another, but all resembling one another strongly in the broader lines of their culture, such as the technical processes employed in the making of pottery, and the fundamental principles of their architecture. This fundamental unity, which seems to underlie the different groups of peoples that

¹ Mr Morley's paper is a preliminary report of the field work of the Colorado Society of the Archaeological Institute of America for the season of 1908. The work is conducted by the School of American Archaeology in coöperation with the State University and the State Historical Society of Colorado. — EDGAR L. HEWETT, *Director*.

inhabited these cañons of the San Juan drainage, is seen to advantage in the ruins of the northern tributaries of that river. The treatment of building materials and the selection of building sites, on the architectural side alone are only two of many points that show the broad similarities of the different groups. And yet such are the differences, due to isolation and to local dissimilarities of environment, even between peoples of adjacent cañons, that it has been possible to classify the primitive inhabitants of this region into different culture groups, each characterized by certain distinguishing features that differentiate it sharply from all the others.

McElmo creek, on one of the tributaries of which the Cannonball ruins are situated, rises in southwestern Colorado and after flowing due west to the Utah line turns somewhat south and gives into the San Juan about fifteen miles below. The most striking characteristic of the ruins of the McElmo area, which differentiates them at once from those of the Mesa Verde immediately to the east and Montezuma creek to the west, is the peculiarity of their location. While the buildings of the Mesa Verde on the one hand are situated in natural caves or under overhanging ledges left by some freak of erosion, those of Montezuma creek, on the other, occupy the centers of the mesas that separate the cañons one from another. The structures of the McElmo area are essentially rim-rock dwellings; that is, they are built on the very edges of the mesas and overlook the cañons, the sides of which are frequently so precipitous as to be well-nigh inaccessible.

The Cannonball ruins are situated at the head of a small cañon of the same name, which empties into Yellowjacket cañon, the most considerable northern tributary of McElmo creek. This group is composed of two pueblos on the opposite rims of the cañon from each other, and a square tower built upon a detached rock in the bed. The two pueblos are built upon the very edges of the mesa. The cañon wall below them drops twenty feet or more sheer. This huddling close to the rim insured impregnability from any attack that might have been directed against the settlement from enemies in the cañon itself, while the watchtower was so placed as to give ample warning of invasion from that side and thus afforded an additional element for safety. It was from the mesa side — the back-

yards of their houses, so to speak — that danger from without was chiefly to be apprehended; and the manner in which this difficulty was overcome illustrates well the architectural adaptability of this people. They built no first-floor outside doorways in walls facing upon the mesa, a practice that holds true not only for the two pueblos of the Cannonball group, but also for all the more important ruins of the McElmo area. Indeed no example of a first-floor doorway facing on the mesa side was observed in any of the ruins of this region. Entrance to structures was effected by doorways in the sides that front on the cañons. These open upon narrow ledges between the house walls and the cañon edges, varying from two to three feet in width. Flanking walls from the corners of the houses nearest the cañons cut these spaces off from the mesas. To reach them from below, ladders or notched trees doubtless had been employed, all traces of which, however, have long since disappeared.

The Southern and smaller pueblo of the two, was the one selected for excavation by the Colorado Branch of the Archaeological Institute of America during the field season of 1908. It stands on the southern side of the cañon, facing north, with its long axis east and west. The ground rises gently from the back of the structure for about two hundred yards to the summit of the mesa, and then falls off gradually for the same distance on the other side to the southern edge, there breaking off sharply into McElmo cañon. In the course of time the rocky top of the mesa has become covered with a red soil into which the red sandstone of this region disintegrates. This supports a sparse growth of sage, cactus, greasewood, scrubby piñon, and a limited quantity of tuft-grass. Originally, at the time of the occupancy of the pueblo, the mesa top had been under cultivation. There seems to have been a considerable irrigation system, consisting of a reservoir and several irrigating ditches east of the pueblo. Quantities of corn cobs and the seeds of a species of squash found in abundance during the course of the excavation indicate at least two of the crops harvested by the aboriginal inhabitants.

The Southern pueblo is close to the edge of the rimrock, as may be seen in plate xxxvi, *a*, with its long axis parallel to the cañon edge. The maximum length is 114 feet, the maximum breadth



SOUTH PUEBLO, SHOWING PROGRESS OF EXCAVATION



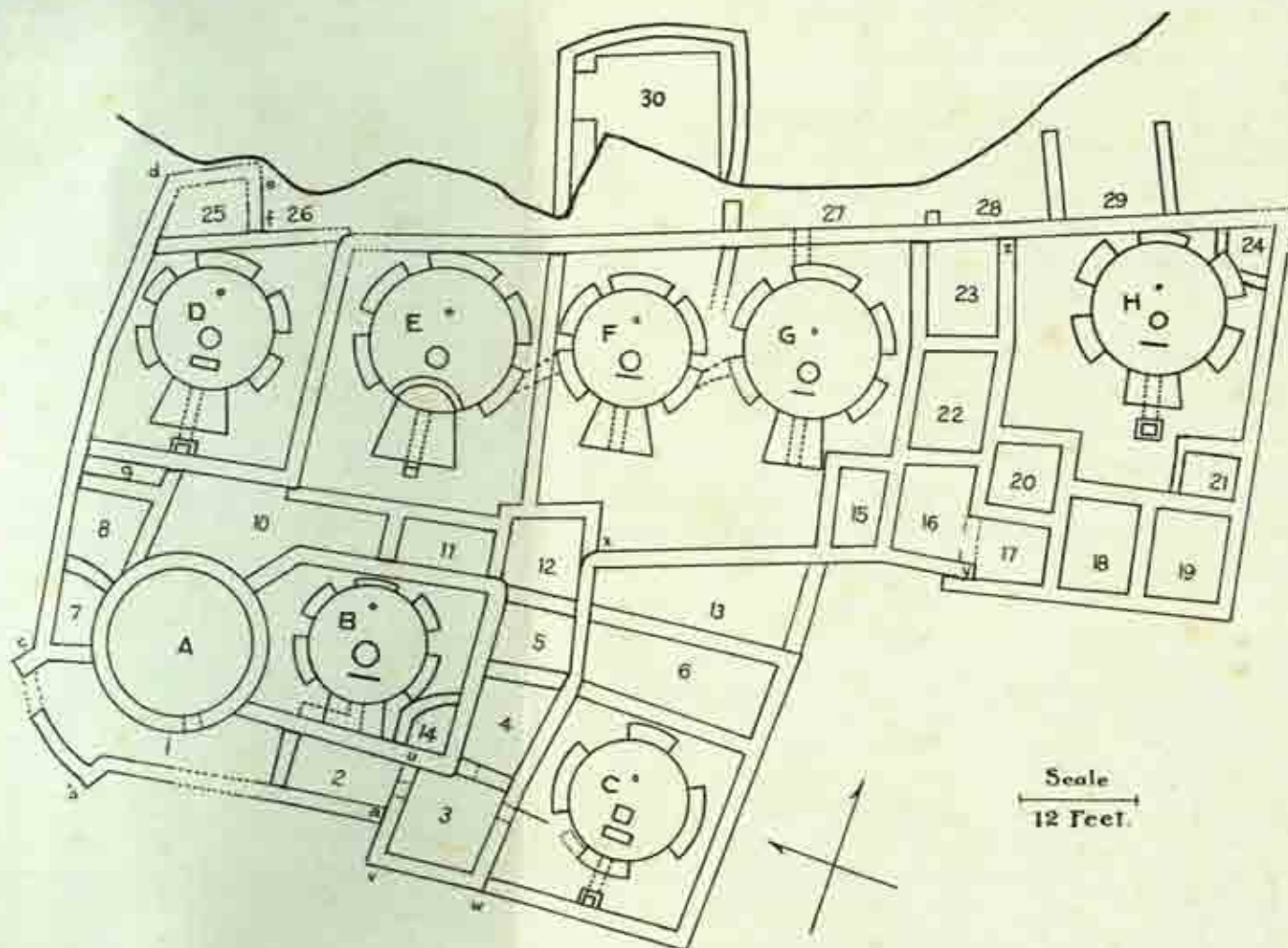
INTERIOR OF KIVA E

72 feet. The walls, for the greater part, are broken down to within three or four feet of the ground, though the tower seen in the photograph to the right in the background still stands to a height of ten feet, and a section of wall at the left rises five or six feet higher. The floors of the building are on two different levels, the front range of rooms being lower by some eight feet than the back range. The lower range (see plan, pl. xxxvii) is composed of five kivas, or circular rooms, excavated in the soil of the mesa to such a depth as was necessary for the utilization of the rim-rock as the flooring. The upper range of rooms have their floors on the same level as the roofs of the five kivas of the lower range, that is, on the same level as the mesa outside the walls. In addition to this step-like arrangement proceeding from the rooms fronting on the cañon to those on the mesa side, the rooms are progressively lower from west to east, or from right to left in the illustration. This latter difference in floor level (that from west to east) is due to the configuration of the rim-rock, its gradual descent toward the head of the cañon, and is wholly accidental; but the other inequality, the step-like arrangement from front to back, is due to the necessity which these people apparently felt for having their ceremonial rooms, the kivas, subterranean or semi-subterranean. All examples of this type of room found in the McElmo area were either wholly subterranean or nearly so.

One interesting point that developed from the work is the fact of growth by accretion through which this pueblo attained its ultimate size. That it was not originally conceived as it now stands, but was expanded and enlarged as the demands of a growing group necessitated, rather than according to a predetermined scheme of development, appears from a glance at the accompanying plan. The ground-plan of the ruin is singular: rooms are of irregular shape, their relation one to another apparently haphazard, exhibiting no conformity to a preconceived plan. Walls are not always straight, but abound in curves and offsets. Such irregularity could have arisen only in a building that grew by accretion, where rooms were added when needed, and needed only when the natural growth of the group filled to overflowing the older rooms. Such a growth by gradual accretion would well account for the observed irregularity of the ground-plan. Some parts of the building may have

been added scores of years after the first rooms were built. The strongest confirmation which this theory of growth by accretion has, however, is not derived from the observed irregularity of the ground-plan, but from the character of the masonry at corners and points where walls intersect. In most places where two walls intersect, the masonry of the walls intersecting is not bonded, but one wall simply abuts against the other. This abutting of one wall against another, and the absence of any intertying walls, is a practice which inevitably would have resulted when new walls and rooms were added to those previously existing. The various places in the building where walls and rooms have been added to others already standing is clearly distinguishable in the masonry. In some cases the abutting walls have sagged away from the wall against which they abut, to such an extent indeed that it is possible to thrust an arm into the resulting crack. In other places the abutting wall has separated from the other so slightly that it would be difficult to insert a knife-blade into the opening. But always the line of intersection is sharply drawn, and never is it broken by stones which bind both walls together by having an end laid in each. This question of growth by accretion, a fact which holds true for the other larger ruins of the McElmo area, seems to go back for its explanation, in part at least, to the probable sociological organization of the ancient builders.

The kiva, or circular ceremonial room, of which every ruin in the McElmo area, great and small, has one or more, is the place in and around which the religious life of every pueblo community centered. In the case of the single family, the unit of every social organization, a kiva with several attached living-rooms sufficed for the needs of the group. But when the group expanded, when the daughters of the family grew to womanhood and drew husbands from other groups—for in the matriarchal system of descent prevalent among the Pueblo Indians of the Southwest such is the practice to-day—one kiva eventually proved too small to accommodate the people of the group, so that others with their dependent living-rooms were added. Thus the building expanded to house the growing population. Succeeding generations necessitated, from time to time, more or less extensive additions, so that the pueblo as we find it to-day is the result of gradual growth.



GROUND PLAN OF SOUTH PUEBLO
(Surveyed and Drawn by J. H. Marley.)

The presence of the abutting walls, just mentioned, throughout the building has made it possible to trace the steps through which the structure passed to reach its final proportions, and to show relatively the differences in age between its several parts. From all indications Tower A (shown in plates xxxvi, *a*, and xxxviii) is the oldest part of the settlement. All five of the walls that radiate from it merely abut against, and do not penetrate its curving wall at any point. Tower A stands as the nucleus of the pueblo around which the building grew from time to time. The first addition to this seems to have been Kiva B and the wall that encloses it on the eastern side. This enclosing wall touches the tower wall at two points, but does not penetrate it at either, showing thereby that it is of later construction than the tower, though it is impossible at the present time to estimate the actual time difference between the two. Some time after Kiva B was built, wall *u-v-w-x-y-z* was constructed, and rooms 3, 4, 5, 15, 16, 22, and 23 were added to the pueblo. Subsequently wall *a-b-c-d-e-f* was built, and rooms 1, 7, 8, and 9 were added. Still later Kivas D, E, F, and G, and rooms 25, 26, 10, 11, and 12 were added, and lastly, on the northeast corner, the addition which contains Kiva H and rooms 20, 17, 18, 19, and 24. What place the section that contains Kiva C and rooms 6 and 13 occupies in this scheme of development, it is impossible to say, except that it is of a later period than the addition containing rooms 3, 4, 5, 15, 16, 22, and 23. Just how long a period elapsed between the building of Tower A and the finishing of the latest room, perhaps room 13, is a matter of conjecture only. It may have been two or three decades or as many centuries. The time element seems unimportant beside the fact that the growth was gradual, an architectural adaptation to the requirements of social organization.

The most important development of the architecture of these ancient inhabitants is the kiva, their ceremonial room, of which there are seven examples in the Southern pueblo of the Cannonball group. These are in the main of uniform type in this ruin, differing from one another only in unimportant details. They are circular and subterranean, ranging in diameter from eleven to thirteen and a half feet, and in depth (i. e., height) from six to seven feet. About three feet above the floor there projects from the vertical wall, which forms

the sides of the kiva, a slight ledge. Above this the wall has six panels, or recesses, which range in width from three to five feet, and in depth from one to four feet (pl. xxxvi, *b*; pl. xxxviii). These recesses, which reach from the ledge just mentioned to the roof-beams, are symbolical of and were probably consecrated to the six primal directions — the four cardinal points, the zenith, and the nadir. The orientation of these recesses, while far from astronomically accurate, conforms roughly in all the kivas of this pueblo to the cardinal points: north, northeast, southeast, south, southwest, and northwest. The south recess was probably the most important. It is always very much deeper and usually a trifle wider than the other five, and also it is beneath the south recess that the horizontal passage leading to the vertical exterior shaft passed. The other features in the bottoms of the kivas of this pueblo are even more uniform than the above division of the upper half of the wall into six recesses, since one of the kivas, Kiva C (see plan), has but four recesses, one for each of the cardinal points. Just south of the back wall of the south recess there is a vertical shaft (present in all seven of the kivas), about a foot square, reaching from the surface of the ground (i. e., the roof level of the kiva) straight down to the level of the kiva floor, where it gives into a passage underneath the sill of the large south recess and opens into the kiva wall through an entrance about two feet high and a foot to a foot and a half wide. About two feet in front of this, and in a line joining the middle points of the north and south recesses, is a slab of sandstone three feet long by two high and two or three inches in thickness. This was found in four of the seven kivas examined. Another type of the same device, found in the remaining three, is of masonry — squared faced blocks of stone laid in adobe mortar. These vary in height from one to two feet, and in length from two to three feet; the thickness however is uniformly one foot. Immediately north of the object just described is the fire-pit, usually round, but square in two of the seven kivas. It was invariably found filled with fine white wood ashes, closely packed. The adobe sides of the pit in all instances had become vitrified to brick by constant use. The remaining feature of importance in the kiva is a small round hole in the floor, averaging in the kivas of the Southern pueblo three and a quarter inches in diameter and slightly



WEST END OF SOUTH PUEBLO, PARTLY EXCAVATED

under seven inches in depth. These holes, which have been identified by Doctor J. Walter Fewkes of the Bureau of American Ethnology with the *sipapu*, or ceremonial entrance to the underworld, as used by the modern Hopi Indians of Arizona in their kiva worship, are of two types: a straight cylindrical excavation in the floor, with vertical sides, and diameter at top and bottom the same; the other a bowl-like excavation with narrow neck bellying out below. This latter type frequently had its narrow opening made from the neck of a broken bowl, which was simply plastered into the opening of the sipapu. The sides of these sipapus are of well-smoothed adobe. The edge made by the hole breaking through the surface of the floor has in all cases been rounded off. One curious point in connection with the sipapu as found in the Southern pueblo is, that when uncovered, every one of them was found to be filled with red soil closely packed to the floor level—the same red soil that covers the mesa top outside the building. Whether they had been intentionally filled by the ancient inhabitants before the structure was abandoned, or whether the choking up was accidental, it is impossible to determine positively. However, the most logical explanation seems to be that dirt and dust had blown in through the door in the roof or through the vertical shaft and had choked up the sipapu before the roof fell in and filled the entire kiva with dirt and masonry debris. Each of the seven kivas examined has at least one niche and most of them two niches, or small recesses, doubtless used for storing prayer-meal and other articles connected with the kiva worship. These are situated in the sides, below the slightly projecting ledge which marks the sill level of the six large recesses, consecrated to the six directions. These small niches, if present, are always found in the same location in every kiva. The larger one, about ten inches high by twelve inches wide and deep, is always found just under the northeast recess. The smaller niche, about six inches high, wide, and deep, is the less common of the two, and, when present, is found underneath the north recess.

Turning now to a discussion of the masonry of the Southern pueblo. The building blocks are found to be of red sandstone, a material particularly well-adapted to the needs of the aboriginal mason by reason of the ease with which it could be reduced with

primitive stone tools. The character of the masonry differs widely in the several parts of the building. Some sections, particularly the tower and the kiva interiors, show fine workmanship. The tower wall, perhaps the best in the entire building, is constructed of two courses of masonry, an outer and an inner layer of dressed stone. The stones of the outer layer appear to be square, or nearly so, but in plan they are sectors, the better to fit the curve of the wall. The stones of the outer layer are more neatly dressed than those of the inner one, and show clearly the peckings of the tool with which they were faced. They are more carefully fitted to conform with the curve of the tower than those of the inner layer, probably because the curve of the former is less sharp than that of the latter. The inner layer is composed of flatter stones, sufficiently smaller than those of the outside that the curve of the tower could be followed without the necessity of giving the inner stones concave faces. Within and without the masonry is fairly accurately coursed, but no breaking of joints is apparent. Indeed it may well be doubted whether the principle of breaking joints as we understand it was ever practised in any of the aboriginal masonry, and such of it as does occur here and there sporadically throughout the ruins seems to be rather more the result of accident than of design. The binding material was an adobe mortar, made, judging by its color, from the red soil found in abundance on the mesa top nearby. The spaces between the stones of the walls were filled with small rock spalls, which, when in place, forced the mortar closer against the wall stones; rain, however, has long since washed most of these away. It is a characteristic of this masonry that the outside walls are much more neatly dressed and coursed than the inside walls. The reducing, pointing, and facing of the rough sandstone seems to have been accomplished with a sharp implement. The small pits made by it are clearly distinguishable in any number of the carefully dressed stones used in the kiva interiors. Side by side with this high-class work of superior finish are found other sections where the building stones have received no dressing, having been fitted into the wall in the rough as they were broken by the stone mauls of the long-forgotten builders.

The greatest elements of weakness in the McElmo buildings

were: the failure to break joints, and the absence of a suitable mortar. These two causes more than all others combined have contributed to the masonry disintegration which is so widespread in this region; and yet notwithstanding these grave architectural defects, many buildings now fallen would still be standing had they not been overthrown by the vandalism of the modern digger in his unscrupulous quest for so-called "Aztec pottery."

One rather remarkable feature of the Southern pueblo is the rarity of doorways. In the entire building but four are intact, though the demolition of many of the walls may account for this comparative scarcity of entrances. The best doorway is the one in the southeast side of the tower. It is three feet three inches high, by one foot six inches wide, and its threshold is one foot two inches above the floor level. The jambs are of the same well-dressed stone as the outer layer of the tower masonry, showing the same surface peckings of the reducing tool. The lintel had been composed originally of seven small sticks, each about two inches in diameter, which rested upon the top stones of the jambs. The interstices are filled with adobe. The threshold is composed of several stones, none of which shows signs of any considerable wearing. This, coupled with the rather considerable height of the doorway (three feet three inches), lends color to the idea that the original sill is missing. A heavy stone just the width of the doorway, highly polished as if from long wear, and smoothed flat, found just in front of the door, gives confirmation to this assumption. There are two other inside openings in a room east of Kiva B. The first of these is one foot five inches high and two feet three inches wide. The lintel is composed of five cedar sticks, each about an inch and a half in diameter; these formed the support for a super-numerary lintel, a sandstone slab two inches in thickness. The other opening is two feet ten inches high, and one foot nine inches wide. The lintel is of stone and the sill is missing. The fourth and last doorway is in the front of the building, giving access through a passage into Kiva G. It should be noted that the first three of these doors are inside and that the fourth opens on to the narrow ledge between the building and the cañon.

Floors throughout the building were made of adobe. In the

kivas this was rather gray in color ; in other rooms it had been much blackened by fire. Floor excavations showed superimposed floor levels ; and from some rooms bowls and bone implements (awls, needles, etc.) were taken from beneath the upper floor level.

All traces of the roofing have long since disappeared, except perhaps a rotting beam here and there. The method practised, however, was doubtless the same as that which may be seen to-day in some of the structures of the Mesa Verde — main beams, across the short dimension of the room, upon which rested a layer of split cedar or of small sticks an inch in diameter. Upon these were spread the inner bark of the cedar, and lastly adobe poured generously on top to the depth of three or four inches. The fiber prevented the adobe, when wet, from leaking through the layer of split cedar or small sticks. This covering, once the main beams had fallen, rapidly disintegrated ; the adobe, fiber, and small sticks rotting into and forming the soil, which, mixed with the fallen walls, filled all the rooms.

The specimens found during the course of the excavations are those of objects such as might be expected to have been used by primitive people. Stone axes, corn grinders (*manos* and *metates*), and worked stones for other uses, bone awls and needles, and a good representative collection of pottery. As was to be expected in the excavation of a house-site, few human remains were found, eight skeletons only, some incomplete, having been discovered, of which five were adults and three were children between one and two years of age. The skull of one of these latter, the best preserved, appears in the accompanying illustration (pl. xxxix). Of the five adults, the entire skeletons of three were recovered. Assigning to the femur a proportion of twenty-seven percent of the entire length of the body, these three are found to be : 5.2 feet, 5.28 feet, and 5.47 feet in height, or all under five feet six inches. These values are doubtless a little low, but even discounting the slight shrinkage which inevitably takes place between the living body and the skeleton, the heights thus attained are surprisingly low. While three skeletons are far too few to form the basis for sweeping generalizations, there seems to be here, nevertheless, the possible indication that the height average among the builders of these structures was considerably



OBJECTS FOUND IN THE EXCAVATIONS

below that of our own race. All the skulls of the adults are artificially flattened at the back. The teeth in most cases showed excessive wear, doubtless due in part to the fact that many particles of sand or pulverized stone became mixed with the corn in the grinding and were eaten along with the meal. One skull is interesting because of an indentation, about a quarter of an inch deep, in the middle of the frontal bone. This had been caused by some sharp weapon, but that it had not caused the death of the individual wounded is seen from the manner in which the rough edges of the wound on the inside of the skull have been smoothed and rounded by the filling in of bony tissue after the wound had been inflicted.

Of stone implements by far the most common are the axes, of which there are thirty-two in the collection. These form a series ranging from crude rejects, which had been thrown aside for some defect or other after having been roughly blocked out, to finely executed, sharp-edged axes in hard materials. All the axes save two are of one type: a single sharpened edge with a single hafting groove in the middle. The larger of these two is fully nine and a quarter inches in length and must have been a formidable weapon when hafted to a long handle. Of other stone implements five stone disks were found, ranging in thickness from one-half to one and a quarter inches, and in diameter from four and a half to eleven inches (pl. xxxix, *a*). Their use is unknown, but it is not improbable that they may have served as lids or coverings for the sipapus, when these ceremonial entrances to the underworld were not in use. Three of the five were found in kivas. The collection contains a few ceremonial axes, or skin-scrapers as they have been identified by some (pl. xxxix, *o-r*.) A few small cylinders (*l, m*) from one-quarter to one and three-quarters inches in length and of uniform diameter, one-half to nine-sixteenths inches, were found. The use of these is unknown, though it has been suggested that they are paint-sticks, as the hematitic red rubs off if drawn across a rough surface.

One rather remarkable feature of the finds is the scarcity of objects of the projectile-point type, seven only being found. Of these four are blades (*f-i*) and three arrowpoints. One of the blades, as may be seen in the photograph, is notched on one side.

Few specimens of wood were recovered, because of the extreme perishability of that material. Two spindle-whorls of wood, however, were found, one round and the other square (*k*), and also a wooden form (*n*) for stitching skins, used after the fashion of modern darning balls.

Only a single fragment of basketry, of the coiled type, was found. The technique is finished, and it is to be regretted that more remains of this character were not recovered.

By far the most interesting and at the same time artistic class of objects recovered is the pottery. Of the ceramic art of this people one cannot speak too highly. In technique, execution, and artistic effect, they excelled. The application of geometric designs in black to a smooth surface of gray-white makes a harmonious contrast of background and decoration most pleasing to the eye. All of the pottery taken from the Cannonball ruin falls into one of two types, with an intermediate type — comparatively rare — connecting the two.

The first and by far the more common type is the black and white ware, seen in the accompanying photograph (pl. xxxix), made by all the peoples of the San Juan drainage. This is found in a variety of shapes: mugs, shallow basin-like bowls, lids, ladles, jugs, and large ollas, or water-jars. The decoration of this black and white ware is almost exclusively confined to geometric forms in this ruin, the fragments of one bowl only being found which exhibits a realistic motive — a conventionalized bird. This restriction of designs to the geometric in one region and the prevalence of realistic forms in another perhaps but a few miles distant, and the sharp differentiation between the two are matters of common occurrence throughout the San Juan drainage. These very facts, no doubt, when the archeology of the region shall have been more thoroughly studied, will shed much light on the movements of the groups of peoples in this region.

The second type is the coiled pottery used chiefly as cooking pots or water-jars. A single example of this ware may be seen in the middle of the accompanying photograph. The example here represented is a small bowl, with slightly narrowing neck terminating in a lip, and is rather an uncommon shape for this coiled ware.

The regular and apparently the only other shape into which the coiled ware was fashioned is the olla, or water-jar. The clay which went into the making of these coiled pots is greatly inferior to that used in the black and white ware, and has resisted the action of the elements much less successfully; so that perfect pieces are extremely rare, and the reconstructed pieces difficult to assemble because of the extreme friability of the sherds. The coiled ware bears no decoration other than the indentation of the coils at short intervals, applied in the making, so that each coil will adhere firmly to the coil next below it; and a scroll appliqué attached near the rim of the olla in four places, ninety degrees apart.

The third type, mentioned above as occurring but rarely, combines the other two. The bodies of the pieces of this type are like those of the black and white ware in every detail. The necks, on the other hand, show the corrugated effect made by the indented coils of the second type. It is a combination ware, wherein the body of the piece is drawn from one type and the neck from the other. No perfect piece of this ware was recovered, and only a few sherds of two or three fragmentary bowls.

Ceramics and architecture: these are the two lines along which the aboriginal inhabitants of the McElmo and adjacent areas, the Mesa Verde, Montezuma creek, and doubtless the entire San Juan drainage, reached their highest development. The importance of the kiva and the part it played in the life of the aboriginal inhabitants, not only of this restricted area of the McElmo drainage, but also of the entire Southwest, cannot be overestimated. Even to-day, after more than three centuries of white domination, during which period the region has been overrun and persistently Christianized, the dwindling remnant of the Pueblo Indians still clings tenaciously to its kiva mysteries. Every pueblo has at least one kiva, and sometimes several, as Taos in northern New Mexico. These are the rooms where preparations for the dances are made, where councils are held, and where the ceremonies of the pueblo take place — where, in short, the religious life of the group centers, and from which emanates the influence that regulates all the affairs of daily life as well as defines man's duties and obligations to his Makers. A closer study of modern kivas will no doubt shed much

additional light upon those of ancient times, and at the same time dispel in large measure much of the darkness that shrouds the life of the aboriginal inhabitants of the Southwest. Indeed contemporaneous studies among the Pueblo Indians must go hand in hand with archeological research if we are to clear the mystery that surrounds the ancient civilization—contemporaneous studies which must be made in the near future if we are to preserve the ancient life and learning before its customs and traditions have been snuffed out by the advances of a higher and more aggressive civilization. Already tribal ties are breaking down, and the day is not far distant when the Pueblo Indian and his civilization will have fallen into a decay for which there is no future and only a silent past.

PEABODY MUSEUM, HARVARD UNIVERSITY,
CAMBRIDGE, MASSACHUSETTS.

SURVIVORS FROM THE CARGO OF THE NEGRO SLAVE YACHT *WANDERER*

By CHARLES J. MONTGOMERY

WITH A NOTE BY FREDERICK STARR

The story of the *Wanderer*, which began its career as a pleasure yacht and ended as a slaver, has been told before ; but little has been said of that human freight which it brought to this country from the coast of Africa, and it is to this that our attention is here directed.

It may be recalled that the year 1858, when this yacht sailed across the Atlantic with the only cargo that it ever secured, was little more than half a century after the importation of slaves into the United States had been prohibited by Congress, and at a time when it was treated as piracy by civilized nations, especially by Great Britain and this country. During this period, however, numbers of vessels were engaged illegally in the African slave trade, frequently crossing the Atlantic from the shores of some of our enterprising maritime states, to obtain cargoes from the African coast, at the risk of seizure and confiscation of the vessels so engaged by men-of-war of the governments seeking to prevent it, and the subsequent punishment of the owners and crews. Some of these slave ships were captured, others eluded the vigilance of the watch-dogs of the sea, and having obtained their cargoes, would steer for some friendly port. As our navy became more vigilant in its lookout for vessels laden with slaves, Brazil seems to have been the slavers' destination, during the latter years at least of this period, as perhaps involving less risk, and at the same time affording a demand for slave labor ; so while the middle passage would receive during the voyage the body of many a poor wretch stifled by the foul air of the hold, after being nearly starved by bad and insufficient food, yet those surviving would bring a price that would more than repay the traffickers from a solely monetary standpoint.

The career of the little *Wanderer* was somewhat unique. First a pleasure yacht of the fleet of the New York Yacht Club, it was later transformed and sent on its unlawful errand by one or more prominent citizens of the South, disembarked its cargo on the coast of Georgia, and was promptly seized by representatives of the United States Government, but not before the negroes had been scattered and most of them sold.

It may be added that the prosecution of some of the offenders was promptly undertaken, conducted on behalf of the Government by Assistant Attorney-General Henry R. Jackson, who later became a Brigadier-General in the Confederate Army, and some years after the Civil War served as Minister to Mexico. In the prosecution he was assisted by District Attorney Joseph Ganahl, an able lawyer and fearless in the discharge of his duties. General Jackson sought from those in power at Washington at the time to have conducted a general investigation of the slave trade as carried on by citizens of the United States, so that prosecutions might be begun against all the lawbreakers wherever found. The trial of the *Wanderer* case resulted in the confiscation of the yacht, but not in the punishment of the owner or the crew.

Returning to the negroes themselves, the question suggests itself, From what part of Africa did they come, and what tribes did they represent? It is known that the cargo was obtained near the mouth of the Congo, but they must have been collected there from different tribes living in different parts of the continent. It is said that some could not understand the language of other negroes in the group. Their complexion, and to some extent their physiognomy and their size, varied considerably.

It would be interesting to know if some came from the tribes visited by Livingstone and mentioned in the account of his famous journey through South Africa, which he made only a few years before the *Wanderer* brought its load of savages from the coast of their native land. Some of these very individuals may have come out of their straw houses to see and converse with this scientific explorer.

Finally, how many survivors of that memorable voyage across the Atlantic yet remain after forty-seven years in a foreign land and



SURVIVORS OF THE SLAVE YACHT "WANDERER"

a, Zow Uncola (Tom Johnson). b, Manchuella (Katie Noble). c, Mahiala (Uster Williams). d, Lucy Lanham.

forty years of freedom, and in what respect, if any, do they differ from other negroes in this country?

They were first landed on the southern end of Jekyll island, Georgia, but it was soon learned that they would have to be disposed of promptly to prevent confiscation, owing to the activity of the United States officials. Some were sent to Florida quietly, taken up St Johns river, and sold. How many of these or of those disposed of on the coast of Georgia and Carolina, or who were sent to states farther west, still survive, I can not say. About one hundred and seventy were sent up the Savannah in the steamboat *Augusta* and landed on the plantation of a relative of the owner, or principal owner, of the *Wanderer*, who was to assist in disposing of them. The point where they were taken from the steamboat was about two miles below Augusta, Georgia, on the Carolina side of the river. Some of these were sent off as far as Mississippi, others were sold in the neighborhood, and a few of the latter are now living within a radius of from two to thirty miles from the point where they disembarked from the steamboat. Reference to some of these may prove of interest.

One whose photograph is here presented (pl. XL, *a*) was known in Africa as Zow Uncola, but is now generally known as Tom Johnson. He says he came from the coast of Africa where the sun rises, that is, the eastern coast, which if true indicates that he was probably sold from one trader to another across the continent. Said he, "Where I come from, you can see the water just drippin' out o' the sun." The topography of the land is level; he recalls an absence of trees, and is familiar with his native language, though he can not always recall the words corresponding to some he hears in this country. He now lives in Aiken county, South Carolina, and when asked if he would like to go back, said, "I'm gittin' so old, I'm 'fraid I couldn't git back."

Another (pl. XL, *b*), whose African name was Manchuela, subsequently became Katie Noble. She says she came "from deep in Africa," and apparently can give no more definite idea as to her old home, though she was practically grown when she came. Replying to the question as to her age on arrival, she said she had an heir, meaning a child. Her present home is in Edgefield county, South Carolina.

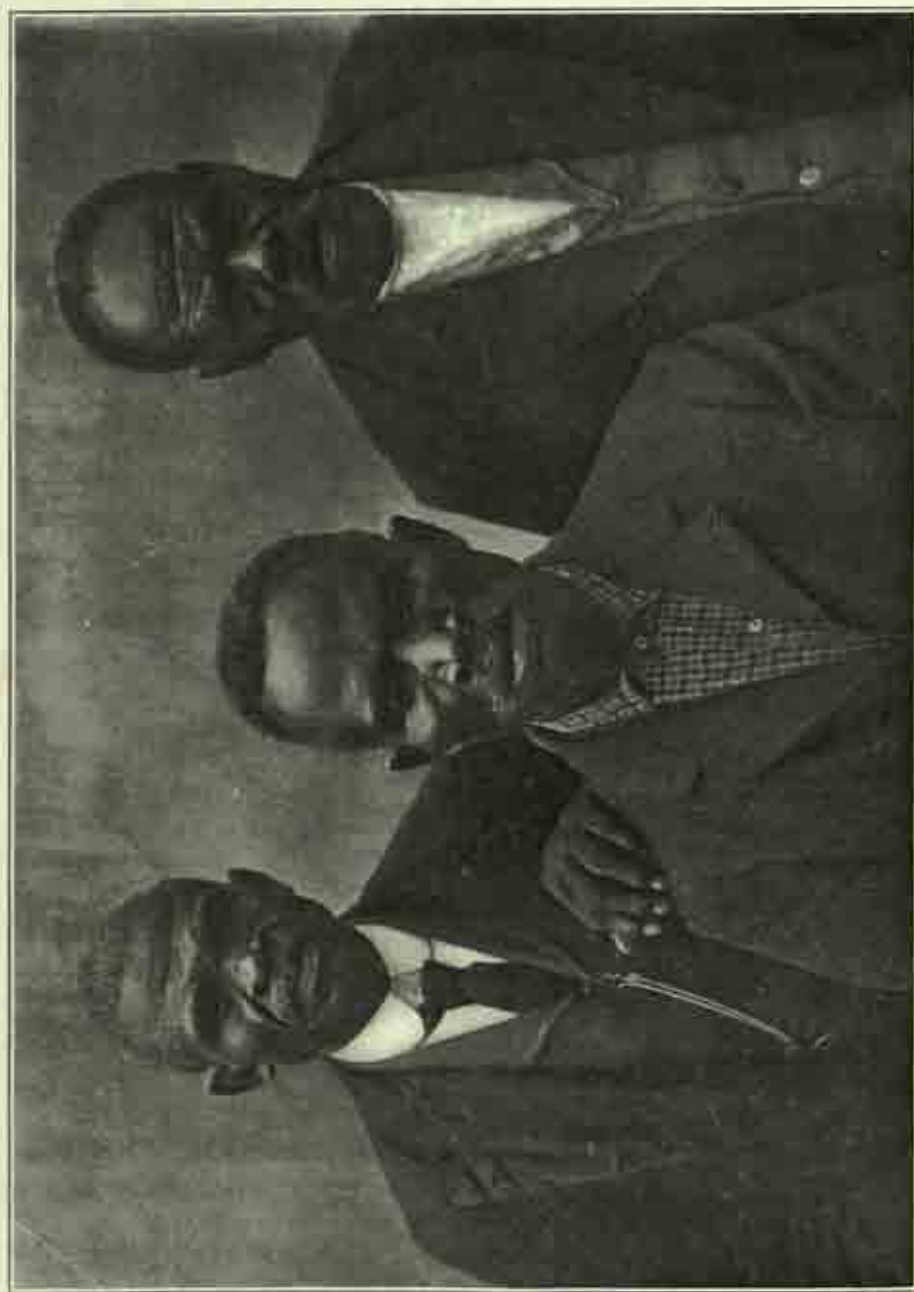
The third whose picture is shown in the same plate (*c*) was called Mabiala, now Uster Williams. His present condition is peculiarly sad. Almost blind, and with little mind left, thinking he has had a "spell" put on him by "witchcraft," he seems to think that someone is going to kill him; yet he retains his memory of African words and customs in a remarkable degree. He says he came from near the "Bézy" river in Africa. He is now an inmate of the Richmond County Home, near Augusta, Georgia.

Lucy Lanham, the youngest of the lot (*d*), was a small child when she reached this country, too young to remember much of her native language or of the land whence she came. Her present home is in Edgefield county, South Carolina.

The three whose pictures were taken together (pl. XL1) are, from left to right, Cilucāngy, or Ward Lee; Pucka Geata, or Tucker Henderson; and Tahro, or Romeo. The first name in each case is his African designation. These three, as well as Mabiala and Manchuella, above mentioned, probably, if not certainly, belonged to the same tribe or to closely related tribes. The name of the chief was Mfōtila, and their home was in a mountainous country beyond the Congo. The name of the village where Cilucāngy, or Ward Lee, lived was called Cowāny, while Tahro's or Romeo's home was Kuluwāka, both far from the coast. Ward's mother lived at Colom-bāndy. Tahro was grown when he came, and is probably the oldest of those whose pictures are given except the old woman, Manchuella. Tahro and Cilucāngy seem to speak fluently their native language, and remember much of the life in Africa. The former, in giving a reason why none of them knew his age, said that in Africa there are only five months in the year. Of these three, Pucka is living in Augusta, Georgia, the other two in Edgefield county, South Carolina.

There are a number of others living within a radius of a few miles, but no two in the same place, so far as I can learn, except Manchuella, or Katie Noble, and Lucy Lanham, who live on the plantation of United States Senator Tillman of South Carolina.

From some of the survivors in this vicinity I have been able to gather certain information which seems to have been retained in their memories with more or less distinctness.



SURVIVORS OF THE SLAVE YACHT "WANDERER"

Chucingy (Ward Lee)

Pucka Genta (Tucker Henderson)

Tahro (Romeo)

Polygamy seems to have been universal, and while no minister, priest, or civil officer performed the marriage ceremony, there was nevertheless a gathering of the tribe at which the man publicly acknowledged that he took the woman for his wife (though he might already have taken others, which he had no idea of deserting); and any trespassing from the outside meant death to the intruder.

Slavery appears to have been a recognized institution. Apart from the capture of slaves as prizes of war, which was so common in parts of Africa, it was also customary for a relative, not necessarily a parent, sometimes an uncle, who was in need of worldly goods, to pawn a child, and if not able to redeem him at the end of a given time, the child became the property of the person to whom he was pawned, who might then either keep him to work or sell him as he chose. Some of the subjects of this sketch were first made slaves in this way, long before they ever saw a white man; while some as children were kidnapped in the woods by other negroes and sold and resold several times before finally purchased by white traders.

The houses these savages inhabited were made of straw, and were without chimneys. A straw house built by one of them like the one he occupied in Africa is shown in plates XLII, XLIII. The houses were without chairs, stools, benches, or tables.

Some of the domestic animals were evidently familiar to them, though horses and cows were known only by name; indeed one of these Africans, Pucka, stated that he never saw a cow until he came to America. Agriculture was practised to a limited extent, such as raising peanuts (*goobas*) and corn (*māssā*). And they made bread from *madēoka*, which is doubtless the same as manioc.

Their costume consisted of a piece of cloth, called *nilly*, around the waist for the men, and the women in addition had something in the way of a cloth or the skin of an animal thrown over the shoulders.

They appear to have had a distinct idea of a supreme being, whom they called *Sāmnia Pūnka*, though they had no idea of prayer or worship, and were never known to curse.

Disputes between members of the tribe seem to have been referred to the chief in the presence of the other members, certain

ones acting as attorneys conducting the prosecution and defence. Where anyone was convicted of a capital crime, he was publicly beheaded, and his head stuck on a pole and displayed to serve as a warning to others.

A few words and an occasional sentence uttered by these Africans in their native tongue—remnants of a language cherished in memory after so many years of practical disuse—will here be given. It may be noted that occasionally a single word has two or more distinct meanings; in other instances two or more words express practically the same meaning. The language or the dialect of distinct tribes differed to a greater or less extent. The following are selections from the vocabulary of the subjects of this sketch:

alligator	<i>ngāndo</i>	clouds	<i>mā tāte</i>
baby	<i>mauna</i>	coon	<i>bungee</i>
back	<i>nēma</i>	corn	<i>māssā ; māssāngo¹</i>
banana	<i>biteba¹</i>	coconut	<i>lombo</i>
beads	<i>nzeembo</i>	cow	<i>gomby</i>
bear	<i>nzow</i>	dance	<i>zaccomma</i>
beard	<i>njāvo</i>	dead	<i>fuēdy</i>
belly	<i>vomo</i>	deer	<i>paccāsā; mibūngā²</i>
bench ³		devil	<i>doky</i>
bird	<i>noonā</i>	dirt	<i>ntoto</i>
boat	<i>coombay</i>	doctor	<i>gāngā</i>
boy	<i>mauna tucka</i>	dog	<i>boa⁴</i>
bread	<i>dimpa</i>	ear	<i>kootoo</i>
butterbeans	<i>mongongo</i>	eyes	<i>māso</i>
butterfly	<i>lampūngo</i>	fire	<i>bāzo ; tuvia⁵</i>
cat	<i>boomba ; mboomba</i>	fish	<i>golla⁶</i>
chickens	<i>sūsū</i>	fly	<i>pīssē</i>
cities	<i>mbāmbā</i>	foot	<i>tāmby</i>
cloth	<i>ntilly</i>	fox	<i>coomba</i>

¹This is the kind of banana we have in this country, while *maconda* is a similar fruit, but much larger.

²There is no strict equivalent of bench, as these Africans knew nothing of either benches or chairs, but their nearest idea to this word is expressed by *canda*, or *conda*, which was the skin of an animal spread on the ground as a seat.

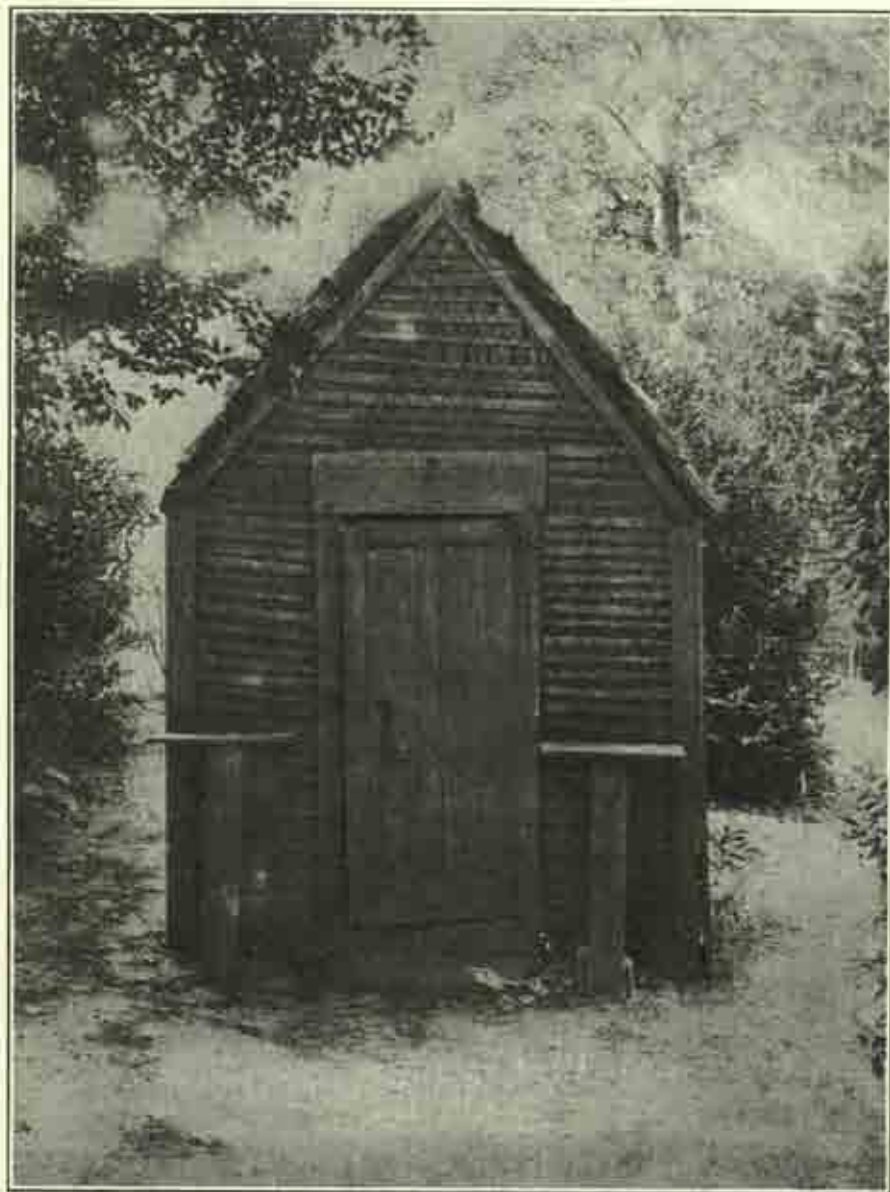
³The latter term is used more by those living farther south, while *muendā* is more familiar to those coming from the eastern coast.

⁴There seems to be lack of agreement respecting this word.

⁵*Zeebāngā*, having the same meaning, seems to have been brought from the east.

⁶The latter perhaps more common.

⁷Or *calingo*, while *simbesy* we get from the east.



THE HOUSE THAT ROMEO BUILT—FRONT VIEW

give me	<i>kālā</i>	pipe	<i>tordia</i>
gun	<i>cully</i>	pot	<i>cāzo</i>
hair	<i>sūky; trūky</i>	rabbit	<i>loomba</i>
hand	<i>corko</i>	rain	<i>mzoola</i>
head	<i>ntu</i>	rock	<i>matūde</i>
hoe	<i>sengo</i>	sense	<i>gāngu</i>
hog	<i>gooloo</i>	sheep	<i>mamāny</i>
horse	<i>vālo</i>	shoulder	<i>vāumbo</i>
house	<i>dro; nzo; bindū</i>	sky	<i>zālū</i>
knife	<i>mibālā</i>	snakes	<i>neoka</i>
land	<i>nte; nsetu</i>	spider	<i>sembe</i>
lie	<i>gānge</i>	squirrel	<i>gemo; conka</i>
love	<i>zola</i>	stars	<i>birtity</i>
man (young)	<i>tucka; mayūc'kala</i>	steel	<i>wēer</i>
man (white)	<i>mondellī</i>	sun	<i>tāngo; muāny</i>
man (colored)	<i>feata</i>	sweet potatoes	<i>bālā; zeeimbala</i>
meat	<i>zimbezy¹</i>	teeth	<i>māno</i>
money	<i>nzeembo²</i>	tobacco	<i>soonga</i>
monkey	<i>cāwah</i>	water	<i>tāngo; māza</i>
moon	<i>gonda</i>	watermelon	<i>malengy</i>
partridges	<i>goomba; kimbinbe</i>	whiskey	<i>malāzo⁴</i>
peach	<i>ncēpho</i>	women	<i>cānto</i>
peanuts	<i>gooba [drūngay³</i>	women (old)	<i>bauba</i>
peas	<i>madāza; zāngy;</i>	women (young)	<i>ndoomba</i>

The following sentences are selected from their native speech :

<i>Ukola?</i> How do you do?	<i>Zola ānā āku?</i> Do you love your
<i>Quer quenda?</i> Where are you go-	children?
ing?	<i>Inga</i> (or <i>yinga</i>). Yes.
<i>Pahnām bēzy.</i> Give me some meat.	<i>Gogomby.</i> No (or, Go away).
<i>Wēnda twās mona kona kēāmvo.</i>	<i>Yālū kāyala.</i> He is very sick.
Carry me across the river.	<i>Wēnda bākā gānga.</i> Go bring the
<i>Vo vōnda ngondo.</i> Kill that alli.	doctor.
gator.	<i>Fuēdy.</i> He is dead.
<i>Shēka.</i> Shoot him.	<i>Ā cānto ānā yāku?</i> How many
<i>Borkāla.</i> Call him.	wives have you?
<i>Weēza.</i> Come here.	<i>Kātātū.</i> Three.

¹ This word, from the eastern coast, is the same as that for fish, this perhaps being their chief animal food.

² This is the term for beads, these having been their only medium of exchange.

³ These are different kinds of peas, while *zin'ēssa* comes from the eastern coast.

⁴ This was made from what they called the "whiskey tree," or in their language *myā'*, doubtless the palm-oil tree referred to by Livingstone.

Ungaya muānā ngo? Have you
seen any lions?

Noka kūnoka. It is going to rain.

Wendu būngā tēvā Go build a
fire.

Muāny yāma. The sun is hot.

Ungā gwāku wōnā yāku ungāyi?
Are you living with your mother?

Yālā? Where pains you?

Ntu būwāngā. My head aches.

Nzāla. I am hungry.

Māno gānzē. My tooth aches.

Ruākā mbālā. I cut him with a
knife.

A kway tukiddy? How far away
does he live?

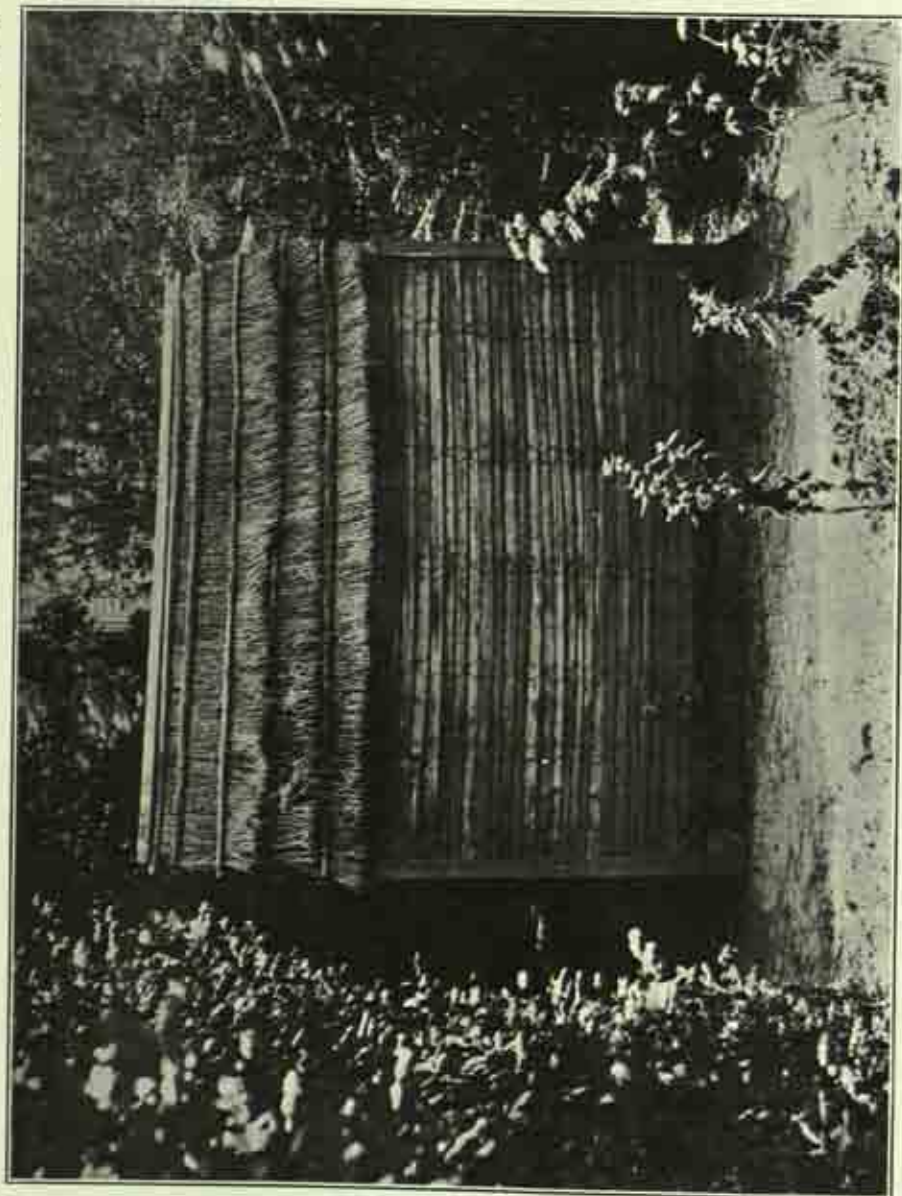
Wāta Coonawany. I was born in
Coonawany.

Māzo māzima. He is blind.

We will next note their terms corresponding to some of our
numbers:

1, <i>corzē.</i>	14, <i>koomē ēyā'.</i>	26, <i>makamorly esāmbāno.</i>
2, <i>corlā.</i>	15, <i>koomē enlāno.</i>	27, <i>makamorly ensāmbōdy.</i>
3, <i>kootātoo.</i>	16, <i>koomē ensāmbāno.</i>	28, <i>makamorly enānā.</i>
4, <i>kooyā.</i>	17, <i>koomē ensāmbōdy.</i>	29, <i>makamorly ērvwā.</i>
5, <i>kootāno.</i>	18, <i>koomē ēnānā.</i>	30, <i>makomalātoo.</i>
6, <i>koosāmbāno.</i>	19, <i>koomē ērvwā.</i>	40, <i>makomāyū.</i>
7, <i>tambwōdy.</i>	20, <i>makamorly.</i>	50, <i>makomātāno.</i>
8, <i>nānā.</i>	21, <i>makamorly enwāno.</i>	60, <i>makomāsāmbāno.</i>
9, <i>ērvwā.</i>	22, <i>makamorly ēzoly.</i>	70, <i>lusāmbōdy.</i>
10, <i>koomē.</i>	23, <i>makamorly etātoo.</i>	80, <i>luovwā.</i>
11, <i>koomē emorsē.</i>	24, <i>makamorly eyā'.</i>	90, <i>lunānā.</i>
12, <i>koomē enzōlē.</i>	25, <i>makamorly etāno.</i>	100, <i>kāmā.</i>
13, <i>koomē entūtē.</i>		

It is not pretended that the above few words and sentences are sufficient to give any adequate idea of the native language of these Africans, or that the words given are invariably correct. They have been verified so far as is possible by independent interviews and conversation with different members of the party who came over at the same time. After so many years in a strange land and speaking a strange tongue, it would be remarkable if some confusion of terms did not occasionally occur. It may be recalled that Livingstone, after about fifteen years' residence at a mission station, where he spoke some English and some African dialect, traveled through central South Africa to a point on the western coast somewhat south of the mouth of the Congo, thence across to the eastern coast, hearing no English spoken for three years and a half, with possibly a brief exception while on the western coast; and when finally after



SIDE VIEW OF ROMEO'S HOUSE

this length of time he boarded an English vessel, he stated that he felt at home in everything except his mother tongue: that while he understood it when spoken to, the words would not readily come to him when he wished to speak. If such was the experience of an educated white man after so few years' disuse of his mother tongue, it is remarkable that these Africans, after so many years in this country, having but few opportunities to converse with one another, should remember as much as they do of their native language. And it is only just to say that the little of their language here given has been obtained in a comparatively few brief interviews. Doubtless much more could be procured under more favorable conditions. In fact some of the negroes seem to converse fluently with one another in their native dialect when they meet.

An idea of the general physiognomy of a few is shown in the accompanying photographs. As to color, it is a more or less popular belief in this country that all pure-blood Africans are black, and that when any lighter tint is present it is due to a greater or less admixture of Caucasian blood. This is doubtless commonly the case in America, where the effects of miscegenation are so apparent. But I have been told by the son of a planter in Florida who bought nine of the negroes of the *Wanderer*, paying \$6,300 for them, that only three of the number were black, six being of gingerbread color. While the admixture of white blood must have taken place and must still take place to some extent in certain portions of the Dark Continent, the effect being seen in the Griquas of South Africa, yet no less an authority and close observer than Livingstone frequently noted what he called the "coffee and milk" color in certain tribes of the interior which had not, in the memory of any one living, come in contact with whites or had seen much of them; while those on the coast and along the rivers were usually black, or at least very dark, and the lighter tint was so prized among the interior tribes as a mark of beauty that the women would take certain medicinal substances in the hope that it would produce this shade in their offspring.

From what I have seen of the negroes of the *Wanderer* and have heard of others, I am convinced that some of them were not nearly so black as some negroes born in this country, while others were,

the complexion varying from black to dark brown, depending perhaps on the tribe to which they belonged, though variations occurred to some extent among the different members of the same tribe. A considerable number of them had followed their custom of filing the teeth, and so sharp were they, and so powerful the jaws, according to white men who knew these Africans when they were young as well as some of the people themselves, that some of them could perform such remarkable feats as biting off the heads of tenpenny nails or biting out the rim of a tin bucket! Some, if not all, had been branded in Africa with a hot iron on the chest, the resulting scar being faintly visible in the survivors to-day.

On arrival in this country many were suffering from various physical ailments, some of which were the natural result of the voyage. Intestinal affections, skin diseases, and to some extent scurvy seem to have been prevalent among them, the last named especially being doubtless due to the character of the diet on their ocean voyage. An indication of their eagerness for vegetable food is shown by an incident related of those sent by steamboat up the Savannah river. They landed near a field of growing corn, the ears of which must have been far from tender, as it was late in the season. The savages promptly began to pluck the ears and eat them raw, leaving little or none to be gathered later.

For a considerable time it was difficult to make them wear clothing, though if red flannel were given them, they would wear that more readily than anything else. This neglect to keep themselves properly clothed resulted in many contracting pneumonia in winter. In summer, clothing was still more distasteful to them. An incident is related where nine of them were picking peas with other negroes in Florida on a hot day. Suddenly with one accord the Africans quickly rid themselves of this unnecessary encumbrance, and proceeded *in puri naturalibus* with their work, unprotected from the rays of the sun or the gaze of their fellow-laborers. But after a process of elimination of the less fit individuals by natural selection, the others gradually became in their customs more like the other negroes with whom they associated.

It was noticed by their owners that, when they first came, the Africans would not steal or pilfer as so many other negroes did,

presumably owing to the severity of their native customs in dealing with theft. They soon learned, however, that in a limited degree stealing could be done here without fear of severe punishment.

Some of them thought it unreasonable of their white owners to require the discontinuance of polygyny.

Some reports represent the Africans to have been good laborers, others that they were of little service; doubtless some were strong and some not. All of them, so far as I have seen, speak kindly if not affectionately of their white masters in this country.

It is noteworthy that after forty years of freedom some would like to return to the old country and the old life. Cilucāngy, or Ward Lee, has had circulars printed for distribution, which read as follows:

TRENTON, S. C., Sept. 14, 1904.

"To The Public:

"Please help me. In 1859 I was brought to this country when I was a child. I cannot say just what age I was then but I have been aroused by the spirit—and I trust it was the spirit of God—on last May. One year ago it was revealed to me to go home back to Africa and I have been praying to know if it was God's will and the more I pray the more it presses on me to go and now I am trying to get ready if God be with me to go back to Africa soon as I can get off to go. And now I beg every one who will please help me. I will be glad of whatever you will give me. I have been trying to make some arrangements to go ever since it was revealed to me to go. I am bound for my old home if God be with me white or black yellow or the red I am an old African.

"Yours truly,

"WARD LEE."

AUGUSTA, GEORGIA.

NOTE BY FREDERICK STARR

Dr Montgomery believes that Zow Uncola came from the east coast of Africa. The other five—Manchuella, Mabiala, Cilucāngy, Pucka Zeata, and Tahro—he thinks came from one district, "near the *Beszy* river" according to Mabiala. Is it possible to locate this region? I am not sufficiently acquainted with African languages to answer the question offhand. Some words in Dr Montgomery's list are at once recognizable, as *mauna* (*mwana*), *gāngā*, and *mvoola*. They are the same in perhaps all Bantu tongues. We have made a comparison between nineteen simple words from his list and words of the same significance from four great languages of the Congo Free State. The languages were selected to rep-

resent the four great areas into which that country is naturally divided — the Lower Congo, the Middle Congo, the Upper Congo, and the Kasai. The languages were the (Ba-)Kongo, Bobangi, Swahili, and (Ba-)Luba. While there were some agreements in all the lists, there was but one list which strikingly resembled Dr Montgomery's. This was the (Ba-)Kongo, spoken throughout the lower Congo region, from the coast to the head of the Cataracts, at Leopoldville. The closeness of the resemblance is at once evident. Thus:

ENGLISH	AFRO-AMERICAN	(BA-)KONGO	ENGLISH	AFRO-AMERICAN	(BA-)KONGO
baby	<i>manna</i>	<i>mwana</i>	rocks	<i>matāde</i>	<i>matadi</i>
banana	<i>biteba</i>	<i>tiba</i>	sun	<i>tāngo</i>	<i>ntangwa</i>
bread	<i>dimpa</i>	<i>ndiba</i>	water	<i>māsa</i>	<i>maza</i>
cassava	<i>madeska</i>	<i>edioka</i>	white man	<i>mondelly</i>	<i>mundele</i>
cloth	<i>nlilly</i>	<i>nlele</i>	one	<i>cori</i>	<i>koxi</i>
crocodile	<i>ngāndo</i>	<i>ngandu</i>	two	<i>corla</i>	<i>-ole</i>
dance	<i>zaccomma</i>	<i>ekinu</i>	three	<i>koolāto</i>	<i>-tatu</i>
dead	<i>fuely</i>	<i>foa</i>	four	<i>kooyā</i>	<i>-ya</i>
doctor	<i>gāngā</i>	<i>nganga</i>	five	<i>koolāno</i>	<i>-tanu</i>
fire	<i>tuvia</i>	<i>tiya (= tuvia)</i>	six	<i>koolāmbāno</i>	<i>-tambanu</i>
maize	<i>māsiā</i>	<i>maza</i>	seven	<i>tambwody</i>	<i>nsambwadi</i>
moon	<i>gonda</i>	<i>ngonde</i>	eight	<i>nānā</i>	<i>nana</i>
peanuts	<i>gooba</i>	<i>nguba</i>	nine	<i>evvā</i>	<i>evwa</i>
plantains	<i>maconda</i>	<i>mankonda</i>	ten	<i>koomb</i>	<i>-kumi</i>
rain	<i>mwoola</i>	<i>mwula</i>			

This really is identity. The Africans in this country have dropped initial *m* and *n* before another consonant in some cases. These combinations are so strange and foreign to English speech that the omission causes no surprise. Apparent variations are *dimpa* = *ndiba*, which is slight, and *ekinu* for *zaccomma*. *Ekinu* is the name of a special kind of dance, and there are other names for other kinds. I do not find one that resembles *zaccomma*. There is a verb *sakumuka*, which refers to the growth of plants usually, but which is capable of the translations "to spring out of the ground," "to spring up." I do not assert a relationship between these. The Kongo words here given are taken without change from Dr Bentley's Dictionary.

We can assert without hesitation that these five negroes came from the lower Congo area, between the Atlantic coast and Leopoldville. To Katie Noble (Manchuella) this seems "deep in Africa"; to the geographer, it is at the fringe of the continent. Four place-names are given by Dr Montgomery's blacks — the *Besi* river and the towns *Cowany*, *Colombandy*, and *Kuluwaka*. These I fail to identify. There is a *Lubusi* river in the northern part of the District of Boma. *Besi* may be

Buzi. These slaves may have come from there, but the statement is only a guess. African towns are often named from their chief, and when he dies the name is lost. Villages are often moved from one to another place, for trifling reasons. Town names are constantly disappearing. It is difficult to identify the towns visited by African explorers a few years after their journeys. Failure then to locate these towns need cause no surprise. It is possible, however, that a man like the Rev. John H. Weeks, who has known the lower Congo country for a quarter of a century, might identify them. The name *Mfotila*, given as the chief of one of the towns, is not an uncommon one in the lower Congo. One of that name, *Mfutula*, became ruler of the kingdom of Kongo in 1891. Of the *Mfotila* here mentioned I know nothing.

UNIVERSITY OF CHICAGO.

FURTHER NOTES ON THE ARCHEOLOGY OF PORTO RICO

By J. WALTER FEWKES

Since the publication of his memoir on the *Aborigines of Porto Rico and Neighboring Islands*¹ the author has received considerable additional data tending to elucidate the meaning of certain archeological material from the Antilles. Among the most significant is a collection of prehistoric objects presented to the Smithsonian Institution by Miss A. B. Gould² of Boston, which includes, among other specimens, one of the best stone pestles from the West Indies yet described (by far the best from Porto Rico); two three-pointed stones, a fine mortar with two cavities, a double-bladed ax, and a "semicircular stone" with a face cut in relief on one side.

The author has been able to purchase a few objects from Vieques, a Carib island near Porto Rico, the archeology of which is almost unknown. These specimens, which have been added to the Smithsonian collection, are especially significant owing to the localities in which they were found. In addition to the objects mentioned, he has received from Señor Grullon several photographs of pictographs and instructive specimens preserved in the museum at Santiago de los Caballeros, Republica Dominicana.³ It is not the intention at this time to do more than to refer to these photographs, since this article deals mainly with Antillean objects added to the Smithsonian collections since the publication of the memoir above cited. While photographs of several instructive objects from Santo Domingo are here reproduced, this account does not touch on all the material in

¹ *Twenty-fifth Annual Report of the Bureau of American Ethnology.*

² The author takes this occasion to express his indebtedness to Miss Gould for this and other aid in his Porto Rico studies.

³ The writer is greatly indebted to his friend Señor Grullon for valuable information and for permission to publish the accompanying photographs of stone objects. It is a pleasure to make this acknowledgment to this zealous student of Antillean antiquities.

possession of the writer,¹ who looks forward to an opportunity to revisit that island and examine the many prehistoric objects there awaiting archeological study.

Accompanying the collection sent by Miss Gould there is a spool-shaped stone object which is believed to be a natural form. This specimen may have been used as a stool or an anvil, or for some other purposes. It measures 7 to 9 in. in diameter by 9 in. in height.

The material considered in this paper is grouped as follows: three-pointed zemis; stone pestle; mortar; semicircular stone disk; ovate stone with three knobs; elbow-stone; clay cylinder; and double-bladed ax.

The most characteristic forms of prehistoric stone objects from Porto Rico are the so-called "stone collars" and "three-pointed stones." It would appear from the character of the latter that they were used for religious purposes, representing different supernatural beings.² They are possibly the "stones with three points" which early writers declare were used to increase the productiveness and growth of the *yuca*, a plant from the root of which the food cassava was prepared.

Two fine specimens of three-pointed stones have been presented to the Smithsonian through the kindness of Miss Gould, and the writer has received from Señor Grullon photographs of three others the originals of which are now in the Santiago Museum.

Three-pointed stones have been divided by the author into four types, which radically differ from one another in the modifications of the parts that give them their names. The three points are classified as the anterior, the posterior, and the conoid projections. The base is a flat or slightly concave rough surface extending from anterior to posterior projection, on which the three-pointed stone generally rests when placed in a normal position.

These three-pointed stones are regarded as clan or family idols

¹ Several photographs of pictographs found in Porto Rico and Santo Domingo have been received by the author since his earlier papers were written. These will be considered in a future article.

² The author long ago identified these stones as images of supernatural beings called *zemis* (*cemis*). The absence of reference to them in early documents is indicative of their religious or sacred character.

which were kept in houses of caciques, or in caves, and used by the islanders in their worship. Although the true significance, if any, of their differences in form is yet to be discovered, a classification into types is of advantage in their study.

First Type of Three-pointed Zemis. — This type has a rude head carved on the anterior, and equally rude legs cut on the posterior projection. In a classification of this type, three divisions, determined by the shape of the anterior projection, are recognized: (1) with a human head; (2) with a reptilian head; (3) with an avian head. To these may now be added (4) with a mammalian head (other than human).

In his description of a specimen of the first type, now in the British Museum, Mr T. A. Joyce¹ points out that the form of its head shows that it does not belong to any one of the three groups suggested by the author. An examination of Mr Joyce's figure of this specimen and comparison of its anterior projection with the head of a manatee, or sea-cow, leads the author to refer the rare zemi in the British Museum to that animal, the sole known example of a fourth division of the first type that has yet been positively identified.

In the Gould collection sent to the Smithsonian Institution there is a good specimen of three-pointed zemi belonging to the first group of the first type. Although this specimen is not very different in form from others of the same group, already figured, it has one point of special interest, shown in the accompanying illustration (XLIV, 1). On each side of the conoid projection there are two pits or depressions similar to those on other specimens to which attention has been called elsewhere. In some cases these pits occupy the positions of the joints of limbs, and may have once contained fragments of shell or stones. In many of the specimens of three-pointed zemis in which these pits occur, appendages are absent; in others they are carved on the surface of the idol.

This specimen is said to have been found in a cave at Trujillo Alto, Porto Rico. It measures $7\frac{1}{2}$ in. long by $4\frac{1}{2}$ in. high.

Second Type of Three-pointed Zemís. — Specimens of the type in which a face is carved on one side of the conoid projection, or between its apex and the anterior projection, are much less abundant

¹ *Journal of the Royal Anthropological Institute*, xxxvii, pp. 407-408, London, 190



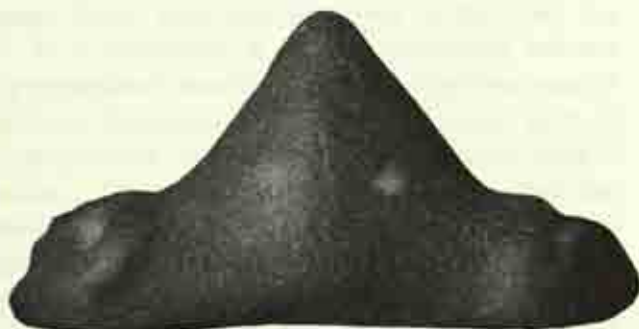
4



2



3



1



5

STONE OBJECTS, PORTO RICO

1, Three-pointed Zemi (First Type). 2, Three-pointed Zemi (Second Type). 3, Pestle. 4, Ball with Knobs.
5, Semicircular Stone.

than those of the first type in Porto Rican collections. Only five zemis of this kind are described in the author's memoir, and the majority of these came from Santo Domingo.¹ There is one additional specimen of the same type in the collection here considered (pl. XLIV, 2), and Señor Grullon has sent the author a photograph of still another, now in the Santiago Museum. These seven known specimens fall logically into two groups: three having limbs carved in relief on the sides, and four without any sign of appendage. One of the three-pointed stones here described belongs to the latter, the other to the former group.

The specimen of the second type, sent by Miss Gould, came from Aguas Buenas, Porto Rico, and according to its label was found in a cave.² It is instructive in several particulars, not the least being its geographical locality, indicating that the type is Porto Rican as well as Dominican. The illustration (pl. XLIV, 2) shows that this specimen has legs cut in low relief on the sides of the conoid projection. These appendages rise from the back and extend to the anterior projection where they terminate in feet which are brought together below the mouth. Round depressions, or pits, are found near the position of the joints, and just below the apex of the conoid projection is a small lateral depression. Grooves worn in the base of the conoid projection seem to indicate that the object was lashed to some foreign body. The face of this idol is without nose, while lips and ears, which ordinarily are prominent in the type, are inconspicuous. The tip of the posterior projection is considerably battered, but striæ in the stone at this point would appear to have been intended for feet. The specimen measures 6 in. in length by 4 in. in height.

The author's attention has been called by Señor Grullon to another fine and instructive specimen of this type from Santo Domingo (pl. XLV, *a, b*). It resembles that figured in plate XLV, figs. *b, b'*, of the author's memoir above cited, but unlike that specimen has

¹ The second type was originally distinguished from the first in the memoir above mentioned. The author has seen no representations of this type in other publications. A similar method of representing joints by incised circles is found in many Central American figures, and in Mexican bas-reliefs.

² Miss Gould has kindly furnished a photograph of the exact point in the cave where she was informed this specimen was found.

incised scrolls around a circle on the back like the object represented in plate XLVII of the same paper.

Unlike the one last mentioned, this zemi has no indication of legs or other appendage on the side of the conoid projections; but the ears are elaborately cut in relief, the mouth is large, the lips are rather narrow, the eyebrows flattened, and the nose is prominent. The ferule back of the head, which possibly indicates a neckband, is pronounced.

Fourth Type of Three-pointed Zemis.—The fourth type of three-pointed zemis includes all those which are destitute of head on either the anterior projection or the conoid prominence, and have no indication of a face on any part of the object. The specimens of this type vary considerably in general form, most of them having the anterior and posterior projections blunt and rounded, the cone being of limited height. The best figure of this variety can be seen in plate L, *c*, of the author's memoir on the *Aborigines of Porto Rico*. Another subdivision of the type has more pointed anterior and posterior projections, the surface lying between the anterior projection and the apex of the cone being slightly concave, while that portion which extends between the posterior projection and the apex is slightly convex. There are sometimes pronounced lateral ridges that extend from the apex of the cone to the edge of the base.

In the third subdivision of the type, the conoid projection is slender, while in the fourth the cone seems to rise out of a depression surrounded by a slightly elevated lip. The first two subdivisions of this type have been figured elsewhere (*op. cit.*, pl. L); the second two, here distinguished from the others for the first time, have not hitherto been illustrated. They will be considered in turn, beginning with the one last mentioned.

An instructive new form (fig. 134) of three-pointed zemis, to which the author's attention was called by Señor Grullon, is provisionally placed in the fourth subdivision of the fourth type, from which it differs in having an elevated fold or raised ridge enclosing a depression out of which rises the conoid projection. Although the general appearance of this stone has suggested phallicism, the author would not so interpret it. This is the only specimen of this form thus far described.



PHOTOGRAPH BY SB. GRILLON

THREE-POINTED ZEMI (SECOND TYPE)

a, Face view. b, Lateral view.

Another three-pointed zemi from Santiago has the conoid projection quite slender, more so than that of any other specimen. Its apex tips slightly forward toward the anterior end of the zemi. A photograph of this idol was sent to the author by Señor Grullon. This specimen belongs to the third subdivision of the fourth type.

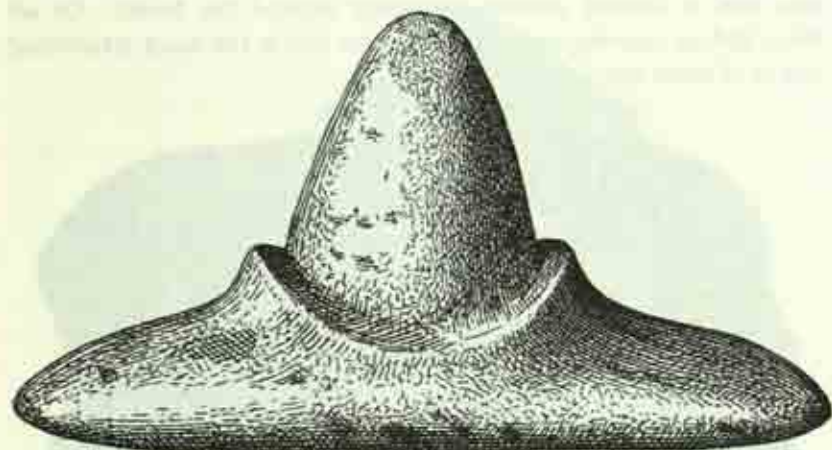


FIG. 134. — Three-pointed Stone of the Fourth Type.

Stone Pestle. — As a rule stone pestles from Porto Rico are inferior in make and decoration to those from Santo Domingo. This inferiority is not true of the specimen here figured, which is one of the finest from the West Indies thus far recorded.

This specimen (pl. XLIV, 3) was presented to the Smithsonian Institution by Señor Don Juan Cabezas, of Carolina, Porto Rico, and according to its label was plowed up near his estate. It is made of a hard, smoothly polished stone, and is the finest specimen of these objects from Porto Rico. It has an elongated, slightly tapering handle, with a well-carved head at one end, and a lens with slightly chipped periphery. The handle is without a ferule, and unfortunately is broken at the neck. The lips, nose, eyes, and ears are well carved in high relief. Each side of an elevation on the crown of the head bears a ring-like protuberance unlike anything in other described pestles from this region. This specimen measures $7\frac{1}{2}$ in. in length.

Señor Grullon has sent to the author several good photographs

of a pestle in the Santiago Museum, decorated on one end with a head, perhaps designed to represent that of a bird, following a known custom in the decoration of pestle handles.

Stone Mortar.—There is a fine mortar (fig. 135) in the collection sent by Miss Gould. This mortar has a concavity on each side, and a distinct groove extending around the body. Of all West Indian mortars seen by the author this is the most interesting and is of most exceptional form.



FIG. 135. — Mortar.

Semicircular Stone Disk.—One of the semicircular stone disks in the Gould collection closely resembles that represented in plate L, f, f', of *Aborigines of Porto Rico*. It has a face on one side, and lateral extensions which show indications of grooves as if for lashing to some foreign body. The specimen (pl. XLIV, 5) measures $5\frac{1}{2}$ in. long by $4\frac{1}{4}$ in. high.

Ovate Stone With Three Knobs.—In his description of West Indian objects the author has figured, from the Imbert collection obtained in Santo Domingo, a stone ball with three rounded knobs situated near one pole (*op. cit.*, p. 175). In the collection sent by Miss Gould there is a stone ball (pl. XLIV, 4) similar to this, but more nearly oval in shape, from Porto Rico, the first specimen of this

form from that island. The signification and use of this object are yet to be determined. Its round end affords no evidence of its use as a pestle. It is about 4 in. in longer and 3 in. in shorter diameter.

Elbow Stone.—A characteristic elbow stone, not elsewhere figured, was sent to the author from Vieques island, near Porto Rico. This

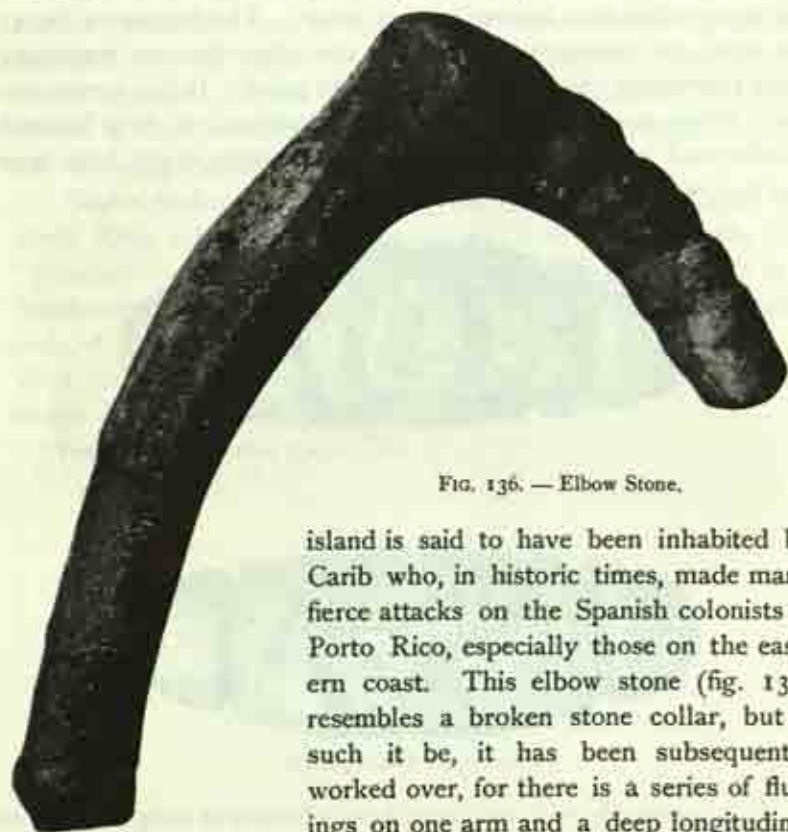


FIG. 136. — Elbow Stone.

island is said to have been inhabited by Carib who, in historic times, made many fierce attacks on the Spanish colonists of Porto Rico, especially those on the eastern coast. This elbow stone (fig. 136) resembles a broken stone collar, but if such it be, it has been subsequently worked over, for there is a series of flutings on one arm and a deep longitudinal groove extends along the fluted arm on the outside.

Miss Gould writes concerning a remarkable elbow stone, lately acquired by Señor D. Vicente Balbas, which has the two ends "approximately of equal length, at right angles, and each hollowed into an almost tubular socket." She suggests that these sockets are for "support by two poles," and it seems to the writer that this is very probably a correct explanation.

Mr Joyce adds a new interest to the discussion of the use of the

Porto Rican "stone collars" by suggesting that they were connected with tree worship, which, as we know from the writings of Ramon Pane and others, was well developed among the Antilleans. According to this theory the collar represents in stone a tree with branches tied together by a band (shoulder band), the prototype of the stone collar thus having been of wood. This ingenious theory has much to commend it, although, like other theories respecting these interesting objects, it awaits definite proof. In this connection the "elbow stone" would be a zemi transitional in form between a collar and a three-pointed stone that originally might have been tied to a wooden object.



FIG. 137. — Clay Cylinder.

It is commonly said that there is no reference in early writings to Porto Rican and Dominican stone collars, but Señor Coll y Toste, a well-known Porto Rican scholar, has called attention¹ to an early mention of "seven collars" owned by the Haitian cacique Caonabo.

Clay Cylinder. — Figure 137 exhibits two views of a clay object of cylindrical form, found at Vieques (?), Porto Rico, related to the so-called cylinder for stamping pottery, contained in the Archbishop Meriño collection from Santo Domingo. It is now in the

¹ *Prehistoria de Puerto Rico*, 1907.

Smithsonian Institution. The knob at each end of the cylinder is separated by a deep groove from the body of the object, on which are represented deep meanders. A section of the body of the cylinder shows that it is not circular, but slightly oval in form. One of the accompanying figures represents the upper or flattened surface; the other, one of the sides. The course of the grooved meander over the surface varies in each of the four quadrants, and in two instances the end of the groove is accompanied by a pit, as shown in the illustration. To this form of ornamentation on pottery attention has been called elsewhere.

Double-bladed Ax. — The majority of the *hachas* (axes) from Porto Rico are pointed at one end and from their form are called "petaloid." The double-bladed ax from Pueblo Viejo, sent to the Smithsonian Institution by Miss Gould, is almost unique in collections of stone implements from our new insular possession in the West Indies. Similar forms have been reported from Santo Domingo and the Lesser Antilles.

BUREAU OF AMERICAN ETHNOLOGY,
WASHINGTON, D. C.

SOME RECENT PALEOLITHIC DISCOVERIES

By GEORGE GRANT MACCURDY

The incoming year will witness the celebration of the fiftieth anniversary of the appearance of Darwin's *Origin of Species*. The celebration in this country began with the Darwin Anniversary Meeting of the American Association for the Advancement of Science during convocation week. Every one is familiar with the uplift Darwin's work gave to science as a whole. Not the least among the beneficent results was the impetus given to the study of anthropology, particularly prehistoric archeology. By a singular coincidence the very year (1859) that the Darwinian theory was published, Prestwich visited the valley of the Somme and satisfied himself of the authenticity of Boucher de Perthes's discoveries in the river drift at Abbeville. It is therefore just fifty years since the first general recognition of paleoliths as artifacts. In visiting some new paleolithic stations during the past summer it occurred to me that this might be a fitting time to speak of certain recent developments in the European field.

One of the most important paleolithic discoveries in recent years is that made by Herr Emil Bächler, Director of the Natural History Museum in St Gallen, Switzerland. The Alpine region had not been considered seriously as a field for paleolithic research, since the latter period closed before the retreat of the glaciers to anything like their present extent. It is true man might have penetrated into the Alps during an interglacial period, but the evidences of his presence would have been destroyed by the succeeding glaciation. Two stations in Switzerland of the Magdalenian epoch have been known for years, viz., Schweizersbild and Kesslerloch, but these are north of the Rhine in Canton Schaffhausen.

It remained for Herr Bächler to make the discovery, some four years ago, of a station of Mousterian age; not in a valley, or even the foot-hills, but in the Säntis mountains which lie between the lakes of Constance and Zürich.

The station in question is on the Ebenalp (above Appenzell) at a height of 1477 to 1500 meters. It consists of two caverns, with southeastern exposure, that enter the precipitous face of the rock, and one of which penetrates backward and upward, giving access to the top of the mountain as well as to the Weissbach valley lying to the northwest. The caverns are reached by foot-path from Weiss-

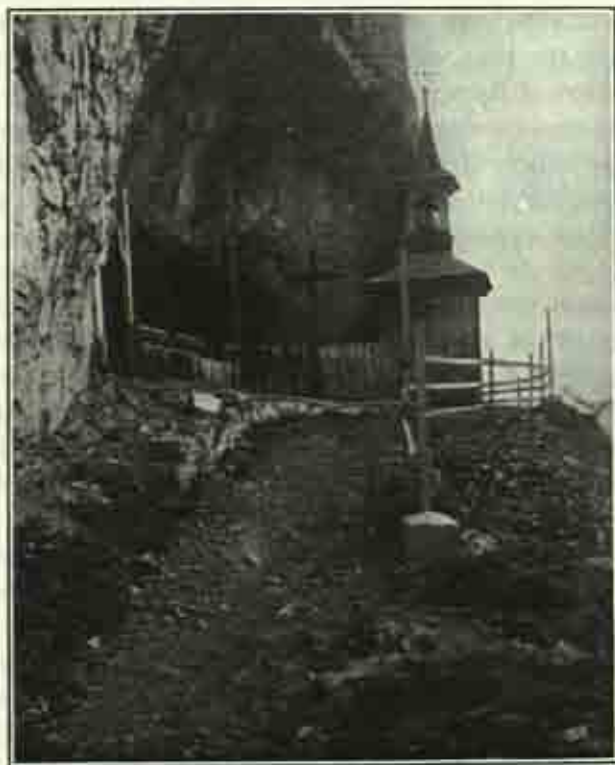


FIG. 138. — Entrance to the Lower Cavern of Wildkirchli, Canton Appenzell, a Station of Mousterian Age at a Height of 1477 Meters.

bad, the most frequented one being by way of the gap that separates the Bommenalp from the Ebenalp. This gap was produced by faulting which left the Ebenalp standing about 300 meters above its neighbor. The last part of the way is very steep but protected by a railing. It would, in fact, be absolutely broken at one point were it not for a wooden bridge anchored to the vertical face of the

rock. This is at a point just below the first or lower cavern. It is probable therefore that paleolithic man did not reach the caverns from this side, but rather from the back of the mountain and by way of the upper cavern. The communication between the two is by means of a narrow ledge. (See fig. 138.)

These caverns have been known since 1621, and there is a legend to the effect that at a much earlier date they were inhabited by wild men. The little pilgrimage chapel of Wildkirchli that gives its name to the place was founded by Dr Paulus Ulmann (1613-1680), priest at Appenzell. The chapel is in the lower cavern, and in the upper cavern where the hermit house once stood there is now the Wildkirchli Inn. The last hermit died in 1851, since which time Wildkirchli has been rather a *belvedere* for mountain climbers than a place of religious pilgrimage. The views are certainly superb and well repay the toilsome ascent. A place so full of the spirit of the past and of natural charms could not well escape the romancer, as witness the last chapters of the historical novel, *Eckehard*, by the celebrated German writer, Viktor von Scheffel.

As early as 1861 Rüttimeyer announced the presence of bones of *Ursus spelæus* and *Capra* (*ibex* and *rupicapra*) in the floor deposits of Wildkirchli. Before that date the hermits used to pick up bones of the cave bear and sell them to the pilgrims. Bächler began his researches which led to the discovery of a pure Mousterian industry during the winter of 1903-04, and continued them during the two following winters. Winter is the best time to work, as the caverns are then dry, relatively warm, and free from visitors.

The deposits are about five meters thick and cover an area of several hundred square meters, so that the amount still to be excavated is much greater than that already done. About 99 per cent of the bones found are of the cave bear, the number of individuals represented by the finds to date being approximately 200. These remains have been found practically at all levels save in the layer at the top which has a thickness of one-half meter. Mousterian implements are found in the same horizons as the faunal remains. They are made of quartzite and flint; also of cave-bear bone. The quartzites were picked up in the Weissbach valley several hundred meters below and carried to the caverns there to be worked into

tools. Some of the better formed implements are made of a greenish flint that must have been brought a long distance by paleolithic man. Both stone and bone implements are of crude workmanship.

In company with Herr Bächler, I spent some hours studying the sections and searching for animal remains and artifacts. We were successful in finding two bone implements and one chipped quartzite. Teeth and fragments of bones were counted by the dozen. These were chiefly of the cave bear. Remains of the cave lion, the cave panther, badger, marten (*Mustela martes*), ibex, chamois, stag, marmot, otter, and hermit crow have been noted.

The deposits are not indurated and may be worked with as much rapidity as is consistent with careful observation. They consist of materials that have fallen from the ceilings. They cannot be called stratified, and yet more or less definite horizons may be distinguished on account of the relative fineness of the deposits and the variations in color.

What is the age of the industry-bearing deposits of Wildkirchli? In order to arrive at a just estimate one must have a knowledge not only of prehistoric times but also of the Ice Age. According to Penck there were four glacial epochs (with alternating interglacial epochs). These have been named after four streams of southern Germany in the foothills of the Alps: Günz, Mindel, Riss, and Würm glacial epochs respectively, beginning with the oldest. Penck has gone even further and determined three well-defined stages in the final retreat of the Würm glaciation. The stages correspond to temporary advances during the period of retreat. Such stages have left their traces so distinctly in the region about Innsbruck that local names have been applied to them: Bühl, from Kirchbühl at an elevation of 500 meters; Gschnitz at 1200 meters, and Daun at 1600 meters, the latter of course being the most recent.

The barbaric races with which the Romans had to contend had a knowledge of iron. It is estimated that the Bronze Age had its beginning some 3500 years ago. The Alps were then either inhabited or visited throughout their extent by man. We find, for example, bronze weapons in the Flüela pass of the Upper Engadine. The Flüela pass was invaded by ice of the Daun stage. The latter, therefore, antedates the Bronze Age. Prehistoric copper mines have

been discovered at two localities in the Austrian Alps. One of these lies at the southern foot of the Übergossene Alp, near Salzburg, at a height of 1500 meters. Neolithic implements were found in the old shafts. Now this locality (Mitterberg) is near the timber-line, and a slight depression of this would render it difficult to establish smelters there. The other copper mine is southeast of Kitzbühel in the Tyrol, at a height of 1900 meters. This mine also must have been occupied later than the Daun stage, at which time the region lay very near the snow-line and was uninhabitable.

Even the whole neolithic period in Switzerland is younger than the Daun stage, whose snow-line lay 300 meters lower than to-day. The minimum time, therefore, that separates us from the Daun stage must be at least 7000 years.

A very long interval of time separates us from the closing epoch (Magdalenian) of the paleolithic period. For we find on the borders of Lakes Constance and Geneva animal remains of the Magdalenian epoch in terraces that are 20 to 30 meters above the present level of these lakes. Magdalenian industry is found in Switzerland well within the area covered by the Würm glaciation. But such stations have not yet been found within that covered by the Bühl stage. It may be taken for granted, therefore, that the Magdalenian industry is older than, or at least contemporaneous with, the Bühl stage, which corresponds, by the way, to the Champlain stage in North America.

The rock shelter of Schweizersbild was occupied by paleolithic man after the Würm glaciation had retreated across the Rhine from Canton Schaffhausen. Here 25,000 stone implements have been found; also many bone implements and some engravings, one being of the mammoth. The paleolithic layers were covered in turn by successive deposits belonging to the neolithic bronze and Roman periods. Taking the thickness of the deposit left since Roman times as representing 2000 years, the time required for the whole series of deposits is estimated at 24,000 years. The total time elapsed since the maximum advance of the Würm glaciation is still longer, 30,000 years being none too high an estimate for it.

When could Wildkirchli have been inhabited? It lies within the region of glaciation. It could not have been occupied during

the Würm glacial period, because it is at a height of 1500 meters, while the snow-line of the Würm glaciation was only 1200 meters. It is self-evident that man could not have taken up his abode above the snow-line. Even during the Bühl stage of the glacial retreat the snow-line was still as low as 1500 meters. Man could have come there only after the Bühl stage. But after the Bühl stage we have a different fauna and flora; so that man must have inhabited Wildkirchli before the last (Würm) glacial epoch, that is to say during an interglacial (Riss-Würm) epoch with climatic conditions similar to those of the present day.

During the last glacial epoch the Wildkirchli caverns were filled with ice or snow and hence no deposits of any kind were formed. The sterile layer one-half meter thick at the top of the floor deposits represents the accumulation since the close of the glacial period. If we allow 30,000 years for post-Würmian times we must allow as much more for the last glacial epoch. Thus to reach the Riss-Würm interglacial period and man's occupancy of Wildkirchli caverns would mean going back about 100,000 years. We have here an atypic but pure Mousterian industry, which probably marks the close of the period; for it seems that in France, far removed from the Alps, the Mousterian industry was contemporaneous with a glacial epoch (the Riss) and is therefore much older than that at Wildkirchli.

Fortunately for the science of prehistoric archeology we know now what manner of man was the author of the Mousterian industry. The first discovery that attracted widespread attention to the physical characters of fossil man was that made in 1856 in the valley of the Neander near Düsseldorf, Germany. The circumstances of the find were such as to render it difficult to establish the age of the human remains. That the skull belonged to a type more primitive than any hitherto known was evident from the start to an unprejudiced mind. Corroborative evidence came just ten years later when Dupont found a human lower jaw in the cavern of La Naulette, Belgium, associated with bones of the mammoth and the rhinoceros. The discovery in 1886 of parts of two human skeletons in the cavern of Spy, near Namur, Belgium, furnished still better evidence, as the human remains were accompanied not only with

bones of the mammoth and cave bear but also with stone implements of the Mousterian type. As belonging to the same class there should be mentioned Professor Gorjanovič-Kramberger's discovery in 1899 of human bones, artifacts, and fossil animal remains at Krapina, near Agram, the capital of Croatia.

During the summer of 1908, Herr O. Hauser found part of a human skeleton, including the skull, in the classic station of Le Moustier itself. This station, belonging to a wonderful series of paleolithic sites in the valley of Vézère, France, has been known since the explorations of Lartet and Christy, 1863-65. Hauser very wisely delayed the removal of the human remains from the

cavern of Le Moustier until after the arrival of a party of German anthropologists, including Professor Klaatsch of Breslau, the party going direct from the German Anthropological Congress held at Frankfurt during the first week in August.

Hauser's discovery was made in the lower cave at Le Moustier, and includes not only an almost complete skull (figs. 139, 140) but also various parts of the skeleton of a youth of about fifteen years. At this age, sex cannot be determined from the bones alone. The race characters also are not so distinct as they would be at full maturity; but they point unmistakably to the



FIG. 139. — *Homo primigenius*, or *mousteriensis*, from the Classic Cavern of Le Moustier (Dordogne). *Norma Facialis*.

type of Neandertal, Spy, and Krapina—the so-called *Homo primigenius* which now also becomes *Homo mousteriensis*. It was a rather stocky type, robust and of a medium to low stature. The

arms and legs were relatively short, especially the forearm and from the knee down, as is the case among the Eskimo. Ape-like characters are noticeable in the curvature of the radius and of the femur, the latter being also rounder in section than is the case



FIG. 140. — *Homo primigenius*, or *mousteriensis*, from the Cavern of Le Moustier (Dordogne). *Norma Lateralis*.

with *Homo sapiens*. In the retreating forehead, prominent brow ridges, and prognathism it is approached to some extent by the modern Australian.

There is, therefore, no longer any doubt as to the physical characters of man of the Mousterian epoch — man that lived in Europe 100,000 years ago. But the Chellean industry is older than the Mousterian, and to the present time no human remains have been found that can with certainty be dated back to the oldest epoch of the paleolithic period. When found, if ever, they will probably be even more primitive in type than *Homo primigenius*. The differences may be great enough to be considered specific, as the Chellean epoch was a long one, reaching well back into the long

Mindel-Riss interglacial epoch. But the Chellean industry already represents a degree of intelligence that must stamp its author as distinctly human — *Homo antiquus* perhaps, but at all events *Homo*. This much cannot at present be said concerning the author of the

colithic industry, particularly in its earliest manifestations. The latter is found not only in the lower Quaternary but also in the Miocene, and even in the Oligocene at Boncelles, a station recently explored by Rutot. From the Oligocene and Miocene up into the lower Quaternary the industry remained practically at a standstill, representing one and the same degree of intelligence.

The successes of the last year in the search for *Homo primigenius* should encourage anthropologists to continue their search for man of the Chellean epoch and the ancestral form that produced the colithic industry.¹ The former may indeed prove to be of practically the same type as *Homo primigenius* of Le Moustier, near the out-

stretched left hand of which



FIG. 141. — Implements of *Homo mousteriensis* from the Lower Grotto of Le Moustier.

ished flint implement of the Acheulian type, as well as a Mousterian scraper. (See fig. 141.)

¹The remarkable lower jaw recently found by Professor Schoetensack in Tertiary deposits at Mauer, near Heidelberg, may represent this ancestral type.

It would not be possible to enter here into details relative to all the recent paleolithic discoveries made in Europe. Some of these, like the one at Le Moustier, are at localities known for years and supposed to have been exhausted; as for example, those of Hauser in the classic stations of the Vézère, particularly La Micoque; and of Commont at St Acheul. This should serve to emphasize once more the importance of thoroughness in archeological excavations.

Two new localities that give much promise are La Quina (Charente), a Mousterian station being explored by Giroux and Martin; and Willendorf, near Vienna, which is in the hands of Szombathy and Obermaier. Willendorf is in a terrace about 30 meters above the Danube, the section showing superimposed layers of late Mousterian (Aurignacian), Solutrean, and Magdalenian facies respectively. The greater part of the collection had not yet been unpacked before I left Vienna; but Herr Szombathy, the curator, very kindly showed me the most remarkable single specimen—a human figurine, full length, carved out of stone, with all the steatopygic and negroid characters of the Hottentot race. It came from the upper, or Magdalenian horizon. This may be connected in some way with the paleolithic negroid race discovered by the Prince of Monaco in the *Grotte des Enfants* and named by Verneau *Type de Grimaldi*.

YALE UNIVERSITY,
NEW HAVEN, CONNECTICUT.

COPPER NECK-RINGS OF SOUTHERN ALASKA

By GEORGE T. EMMONS

In the narratives of the early European explorers who visited the Northwest coast of America in the latter half of the eighteenth century, frequent mention is made of objects, implements, and ornaments of copper found in possession of the natives. These were unquestionably of virgin metal and of home manufacture, for while odd pieces might have been carried across the continent during the course of centuries of trade and migration, the very abundance and the typical forms would argue to the contrary. The great copper fields of Alaska and the Northwest Territory, extending from Copper river through the White river district to the vicinity of White Pass were well known to the local inhabitants and furnished one of the principal sources of revenue in their trade with the coast Tlingit, long before the Pacific ocean was exploited by Europeans.

The Chilcat, who occupy the head of Lynn Canal, controlled this trade, upon which their wealth and power greatly depended. They traveled inland in large bands two or three times a year, when they met the interior people by appointment, and traded with them on their own terms, for the Athapascan hunter, mild in character, living in patriarchal simplicity and following his food supply throughout the greater portion of the year, was dominated and held in practical vassalage by the more virile and savage Tlingit, and even as late as 1890 he was allowed to visit the coast only under escort, without the privilege of trading with outsiders. The arrogance of the Chilcat is best illustrated in their destruction of the Hudson's Bay Company's post at Fort Selkirk in 1852. They looked upon this interior trade as their exclusive right, and when the rich fur fields of the lower Yukon valley attracted the Company's attention and a factory was there established, a war-party under the leadership of Chartrich, the hereditary chief of the Connahtabee

clan, marched inland four hundred miles, captured and burned the post, and, setting the factors free, admonished them against any further encroachments upon their preserves. This is one of the few instances on record when this all-powerful Company acknowledged and accepted defeat at the hands of a rival.

The Chilcat traded also with the Yakutat people of Bering bay for the copper that they in turn procured from the interior tribes of Copper river. In winter they traveled overland to the coast, but in spring and summer they made the passage of Lynn canal, Cross sound, and thence coastwise in their canoes, a distance of some 250 miles. Ismailof, the Russian pilot, mentions meeting at Yakutat in 1788 a considerable body of Chilcat under their chief Ilchak on their annual trading expedition.

Unquestionably the Huna and Sitka tribes shared in the barter with the Yakutat, but the Chilcat were the progressive traders of the north, and it is still traditional with the Tsimshian and Haida that their earlier supply of this metal came to them from this people. The Athapascans inhabiting the copper region were a utilitarian, in-artistic people whose whole life was a struggle with nature and the elements for their food supply, and they seem to have used metal for daggers, spear-blades, and arrowpoints only. Few or no ornamental pieces have ever been found among them. In mining operations hereabouts, spear-blades of copper have been exhumed fifteen to twenty-five feet below the surface of the ground, attesting to the antiquity of the manufacture and use of this metal. As late as 1885 bullets and slugs were hammered out for use in the smooth-bore muskets against big game. The native source of supply was found either in the form of placer nuggets or in outcropping veins of pure metal, for neither the manner nor the means of reducing the ore when found in combination with other substances was known.

The coast people utilized copper not only for weapons and hunting implements, but fashioned it into ornaments for the ears and nose, bracelets, anklets, neck-rings, masks, rattles, the overlaying or ornamentation of dancing implements, and that peculiar shield-like object known as *tinneh* which had an intrinsic value according to its size, and a still greater personal value dependent upon its ownership and its use on occasions of ceremony, when it might be

cut in pieces, given away, or placed on the memorial column. The early traders, finding copper in such demand, immediately included it in their exchanges for furs, and even worked it into shape after native designs.

Another source of supply was from stranded vessels that were copper sheathed and bolted, and so in time it became so common that the northern trade was abandoned as unprofitable. The superiority of iron was recognized as soon as it was acquired, when copper

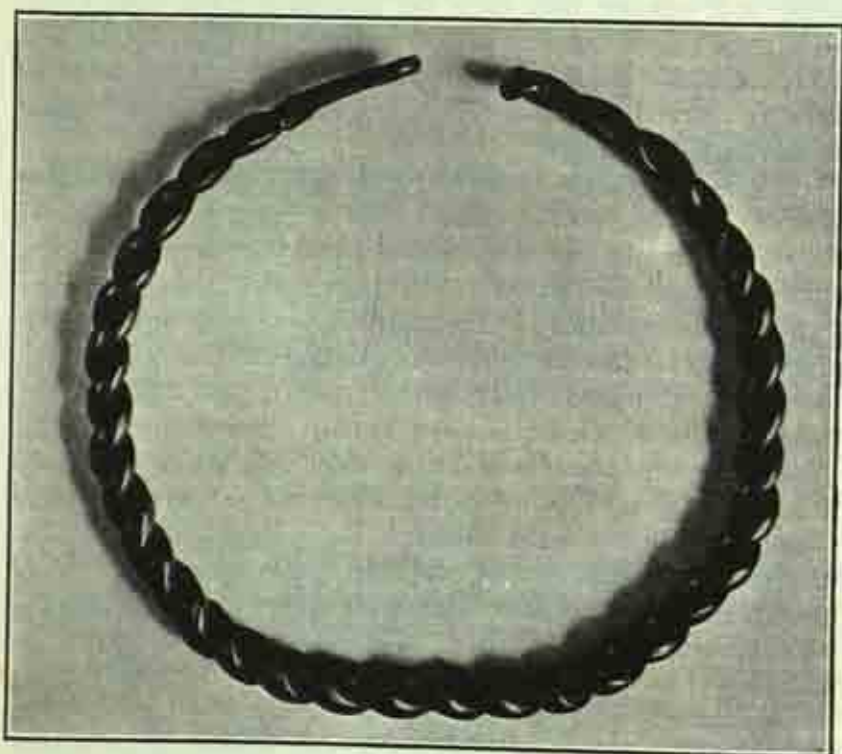


FIG. 142. — Copper Neck-ring of a Nishka Chief, Nass Harbor, British Columbia.

fell into disuse except for personal ornaments and the decoration of dance paraphernalia, and with the later introduction of silver, and then of gold, the demand for copper practically ceased.

The neck-ring here illustrated (fig. 142) was obtained from a Nishka chief living at Kincolith, Nass Harbor, British Columbia.

He valued it highly, and said that it had been in his family through four or five generations when they lived on the Nass, for Kincolith is a mission village of recent years, where the people have been gathered from the older river settlements.

The use of the neck-ring was for occasions of ceremony, when it was worn around the neck both as an ornament and as an indication of rank and wealth; and after death, as a mark of respect, such pieces, as well as the copper shield or the Chilkat blanket, might be displayed on the mortuary column or the grave-house.

Neck-rings are among the rarest of copper objects known to the Northwest coast, and while the Tlingit of southeastern Alaska controlled the trade in this metal, and unquestionably had this ornament, yet I never saw one in their possession, although in the forgotten rubbish of an old communal house at Wrangell I found one of iron, similar in all respects, which was used in like manner, and when a defect occurred in one of the twisted strands, copper had been used to repair it.

Dr C. F. Newcombe, of Victoria, British Columbia, whose years of intimate acquaintance with the Haida give him a very accurate knowledge of their possessions, past and present, tells me that he has seen four of these copper ornaments on the Queen Charlotte islands—one at Klue, one at Dadens, North island, and two at Masset—and knows of one other, collected at Masset for the late Dr George M. Dawson, which was taken from an old family grave by Henry Edenshaw, now an old man, in whose father's life it was said to have been in the family for three or four generations.

So far as I know, all of these ornaments are the same in form and character, consisting of two twisted strands to represent the typical rope of the Northwest coast; for whether it be the head-dress, neck or shoulder girdle of shredded cedar-bark, the halibut line of spruce-root, the warp or woof of the blanket of bark or goat-wool, the fish-net of nettle or sinew, or cordage for any purpose, two strands alone were employed, which marked it in contradistinction to the three- or four-strand rope of our manufacture.

The antiquity of the use of the copper neck-ring is told in the legend of The Salmon Doctor, which goes back to primitive days, before the curse of civilization had blighted this coast. It is known

equally to the Haida and the Tlingit, and like many other of their old stories is localized at different points. As given to me by an old Sitkan it occurred at the summer fishing camp of his ancestors at Naqwasina bay on Baranof island, some fourteen miles to the northward of Sitka; and near the entrance, in a cave-like overhang of the rocky shore, was pointed out the last resting place of the hero of the tale.

To give the story without going too deeply into detail, as I wish simply to illustrate the early use of the copper neck-ring—

A family of the Sitka tribe had removed to their summer camp near the mouth of the main stream to catch and cure their winter food supply of salmon. The son of the chief—a very little boy—came to the mother for something to eat and was given a piece of dried salmon that was slightly moldy; this he threw away in anger and heartily abused the whole salmon family. In these early days of life human beings and animals, including fish and birds, were much nearer to each other, both physically and spiritually. In the beginning they were all one people, but when light was suddenly given to the world, great consternation prevailed, and while some retained their human form others fled to the woods and assumed the forms of animals, and in like manner the air and the sea were peopled. As the old legends abound in transformations and in mixed unions, it can be seen how the Tlingit should look upon the different species as separate families possessing human attributes. Thus the salmon were considered as a great people who lived far out in the sea and every summer visited the rivers and the shore, and while they were legitimately taken in great numbers and constituted the principal food supply of the people, yet they were always spoken to or of with great respect, and their capture and treatment were according to conventional rules that were strictly observed. The silver salmon swimming in the stream heard with shame the abuse heaped upon them; and as the little boy, attracted by some gulls, walked into the water, they dragged him under, when he was transformed into a salmon and taken to their ocean home. The following spring, when the salmon made their reappearance, one more lively and beautiful than the others was noticed to remain about where the little boy was lost, until he attracted the attention of the father, who, after re-

Postscript

The copper neck-ring, described in the accompanying paper, having been submitted to Mr Wirt Tassin, chemist of the United States National Museum, for examination, Mr Tassin kindly reports as follows:

A qualitative test of the metal shows the presence of silver.

Examination of an etched surface shows that the strands are each made up of two other strands made up apparently of hammered sheets.

These observations give rise to the following conclusions: The copper is perhaps "native," since silver is a constant constituent of the copper of the Copper River and Lake Superior regions. The sheets composing the individual strands taper from the centers to the ends and vary greatly in thickness at different points, a condition which would arise when hammering a nugget into a sheet with the idea of getting as great a length as possible with a minimum width.

My idea of the method of manufacture is somewhat as follows: The native nugget was heated to a full red and quenched to make it soft and then hammered from the ends to the middle. It was then re-heated and worked in the same manner, except that the work was applied along the edge. These two processes were repeated alternately till the desired flat was obtained.

Two of these flats were placed side by side, one end fastened, and both were then twisted together, but not "*laid up*." When a certain amount of work had been done the twist was heated, cooled, and rounded up by hammering, thus forming a strand. Two such strands were thus twisted to form the necklace. Two flats make a strand and two strands make the necklace.

WIRT TASSIN.

peated efforts, finally speared him and gave him to the mother to prepare for curing. Upon attempting to cut off the head, the knife encountered a copper neck-ring which the mother at once recognized as that worn by her lost son, whose disappearance was explained in the transformed fish, which was carefully wrapped in a cedar-bark mat and placed in a burial chest on the roof of the house. Soon after this the camp was much disturbed by the faint droning of a shaman's chant, as if far in the distance. Each succeeding night the sound became more audible, and finally was traced to the burial box containing the salmon body, when there came forth a shaman, in full regalia, whose great power and long life with his people is still traditional.

Since writing the above my attention has been called to the illustrations of silver and gold neck-rings on pages 84-87, 106-108, of Anderson's *Scotland in Pagan Times*. The form and character of these ornaments, and of one in particular, is almost identical with the Nishka copper neck-ring here described. That one has any connection with the other, however, is a mere matter of conjecture, and the opinion of one person is as worthy of consideration as that of another. I would only call attention to the fact that the twisted fiber, hide, or metal of the Northwest Coast people is in all instances of two strands, as is shown in the illustration, while the prehistoric Scotch specimens are of a varying number of strands.

PRINCETON,
NEW JERSEY.

THE SIXTEENTH INTERNATIONAL CONGRESS OF AMERICANISTS

By GEORGE GRANT MACCURDY

The Sixteenth International Congress of Americanists was held in the University building at Vienna, Austria, September 9 to 14, 1908. The active and associate members in attendance numbered 376.

In addition to Austria the following countries were represented by official delegates present: Argentina, German Burmeister; Belgium, J. Denucé; Brazil, Manuel de Oliveira Lima; Chile, Julio Montebruno; France, Professor L. Capitan; Holland, Jonkheer L. C. van Panhuys and Dr J. D. E. Schmeltz; Italy, Professor E. H. Giglioli; Japan, Professor Ryozauro Sakaki; Mexico, Gilberto Crespo y Martinez; Paraguay, Leo Hirsch; Peru, Professor Max Uhle; Portugal, José Comte de Paraty; Prussia, Professor Eduard Seler; Spain, Professor Sanchez-Moguel; Sweden, Professor C. V. Hartman; United States of America, Professors Franz Boas and M. H. Saville, Dr George Grant MacCurdy and Dr Charles Peabody; Venezuela, Felix Stiasny. There were also in attendance delegates from seventeen learned societies and institutions from various parts of the world.

The Congress was formally opened on Wednesday morning under the high patronage of Archduke Rainer, who, although not able to be present, sent a message which was read by the President of the Congress, Wilhelm Freiherr von Weckbecker, in his opening address. Later in the week Archduke Rainer held a reception in the Imperial Museum of Natural History. The Congress was also honored by the presence and faithful attendance of H. R. H. Princess Therese of Bavaria, who was one of the honorary presidents.

The first session devoted to the reading of papers was opened with an address by Professor Franz Boas (New York), on "The

Results of the Jesup Expedition." After paying a deservedly high compliment to the late Morris K. Jesup, the speaker set forth the methods employed in the research. One result has been to establish evidence of the shifting of the Northwest Coast tribes. They do not seem to have been stable units, but rather in a continual state of flux. There is no longer any doubt of a connection between the peoples of Siberia and North America. A race probably entered the American continent from Siberia before the glacial period, and later there was a re-migration to Siberia. Marked ethnological differences have been noted among the races of western America. Professor Boas announced that the publications based on the Jesup Expedition will soon be completed.

Sir Clements MARKHAM (London) followed with a paper on "Some Points of Interest in the History of the Incas by Sarmiento." The publication of the Sarmiento manuscript in August, 1906, has thrown new light on the story of Andean civilization and has corrected some misconceptions. Sarmiento was a great addition to the authorities on Inca history and civilization. The subject was treated under the following heads: The revolution in the time of the 6th Inca; Story of the occupancy of Cuzco; Reforms of Inca Rocca; Confederacies subdued by the Incas; The two great Incas, Pachacutec and Tupac; Date of the completion of the Incarial socialistic system; The policy of forming colonies; Socialism; Interest of the subject; Necessity for collating works of Spanish lawyers.

Sir Clements MARKHAM read a second paper, on "A Comparison of the Ancient Peruvian Carvings on the Stones of Tiahuanaco and Chavin." After discussing the supposed extent of the ancient megalithic empire in Peru, evidence from ruins was cited. The argument is strengthened by comparison of carvings on ancient stones. The two stones were described in detail. A comparison of the carvings on them proves them to be the work of the same people. The important recent paper by Dr Gonzalez de la Rosa on the works of Blas Volera seems to give much greater value to the list of sovereigns given by Montesinos, and history may eventually give support to conclusions derived from a study of ruins and of the carved stones of Tiahuanaco and Chavin.

Dr William THALBITZER (Copenhagen) presented a communica-

tion entitled "The Angakoks or Pagan Priests of the Eskimo at Ammassalik, East Greenland." These Eskimo were discovered in 1883. They have for centuries preserved a marked and characteristic culture, a peculiar dialect, and a great wealth of legends, myths, and drum chants. In 1894 a commercial and missionary station was established there by the Danes, and once a year a vessel is despatched from Denmark and generally reaches the station about the beginning of September. Dr and Mrs Thalbitzer wintered at this spot in 1905-06, having been sent out by the commission for the prosecution of geological and geographical researches in Greenland, in order to carry on linguistic and ethnological researches. The population, which is scattered over about twenty miles of the coast, consists of altogether about 450 souls, all Eskimo of pure origin. The angakoks (in Eskimo *angakeg*, plural *angakkin*) are or rather were the national priests and doctors of the Eskimo. These two callings are indissoluble, inasmuch as the people of Ammassalik look upon sickness as a defect of the soul; their notion is that in every part, in every member of the human body, there is a soul which in certain circumstances may be lost; that part of the body which has lost its soul falls ill, and only the angakok is able by the aid of his spirits to restore the soul and thereby health to the sick body. There are three things for which an angakok invokes the aid of the powers: the chase, sickness, and barrenness in women. At the present day the people of Ammassalik live half in their old orthodox faith, half in the new ideas. Many of them still mutter charms (*serratit*) on the sea, when they are out in their kaiaks, and conceal amulets in their clothes. They keep up their primitive ceremonies to some extent, fasting and turning away from the light on the occurrence of a death. But their own priests have given up their calling and are about to give place to the foreign missionaries. In 1906 there were only two of the angakoks who still refused to be baptized; they displayed great contempt for the new doctrines, and were full of faith in their own guardian spirits and other supernatural beings, especially in the divinity of the moon and in the Old Woman of the Sea.

Professor Paul EHRENREICH (Berlin) took as his subject "Our Present Knowledge of the Ethnography of Southern Brazil." Faulty

nomenclature has until recently led to confusion in respect to the ethnic groups that once inhabited what are now the states of São Paulo, Parana, Santa Catharina, and Rio do Sul. The recent works of Ihering, Ambrosetti, Telemaco Borba, and Benigno Martinez have brought order out of chaos. This is particularly true of the so-called Guayañan or Guayana (the *Waiganna* of earlier authors), the Chavantes of São Paulo and to a less degree of the "Bugres" of Santa Catharina. Three different stocks were once included under the name Guayana: (1) The ancient Waiganna of Hans Stodeus which, like all the coast peoples, probably belong to the Tupi-Guarani family; (2) the Kaingang or Kame from the interior of São Paulo, Parana, and Rio Grande, doubtless members of the Gês group; (3) the Ingain on the Guaira-Cataract of Alto Parana, also to be found in southwestern Paraguay, which form a special stock of the Gês group. The Chavantes of São Paulo have nothing in common with the so-called Akua of the Araguaya and Tocantín regions. They do not belong, as do the latter, to the Gês group, but form an entirely isolated stock with independent language. The entire lack of linguistic evidence makes it impossible to speak with certainty concerning the place of the so-called "Bugres." They are not primitive Gês as heretofore assumed, and are also quite distinct from the Botocudos and Kaingang. Their real stem name is yet unknown. There is a probable connection between them and the Tupi-Guarani as well as the Guayaki of Paraguay.

Professor J. KOLLMANN (Basel) dealt with the question of "Native Pygmy Races of America." There remains little doubt that Central and South America were once the home of a race of small human beings; that traces of it are to be found in the living tribes of those countries. To smallness of stature may be added such features as a broad, short, squarish face with pug nose. To trace the pygmy races as they spread over the earth would seem to be a fruitful task in the field of somatic anthropology. They are everywhere the starting point for the study of the races of large and middle size, and must be reckoned with in any attempt to trace the origin not only of the red man but also of mankind in general.

Professor L. CAPITAN (Paris) presented three papers, the first

being on "The Cruciform *Entrelac* in Ancient America, Japan, China, India, and Gaul." This sign is to be seen on vases and shell ornaments from the mounds of the United States. Analogous figures occur in ancient Mexican manuscripts. It is found also on Merovingian buckles and as a decorative motive in China and Japan. Of the remaining two subjects one dealt with the large breast-rings of ancient Mexico in comparison with similar rings from Japan, China, Oceanica, and Gaul; the other referred to the analogies between the Mexican *omochicahuatzli* and specimens from the paleolithic caverns of southern France.

"Elements of the Maya and Mexican Zodiacs" was the subject chosen by Mr Stansbury HAGAR. The elements of the Maya and Mexican zodiacs may be studied in six groups of material, all of which yield results consistent with each other. Five Mexican asterisms described by Tezozomoc and Sahagun, in the order given by the former, represent the six signs from Cancer to Sagittarius inclusive, the Libra and Scorpio symbols being combined. Drawings of these asterisms were given by Sahagun and are reproduced by Dr Seler in his valuable paper on the Venus Period in the Picture Writings of the Borgian Codex Group. In the same paper Dr Seler describes a series of five deities who, in the Mexican codices (Borgian, Bologna, and Vaticanus B) and the Maya codex of Dresden, are represented in the act of hurling spears successively at a water goddess, jaguar, maize goddess, soothsayer, and warrior. In the order given the objects struck are symbols of the same six signs mentioned above, Libra and Scorpio being again combined. The spear-throwers represent the six opposite signs in the order given, except that Aries-Taurus unaccountably exchanges place with Gemini. Nearly all of the deities so well described by Dr Schellhas in his paper on the Deities of the Maya Manuscripts must also be regarded as rulers of the zodiacal signs. The Maya and Mexican month and day signs also include attributes and symbols associated with the zodiac. The sacred city of Izamal in Yucatan was originally surrounded by twelve pyramid-temples each of which represented one of the signs in its proper relative position in the zodiacal circle. This plan reflected on earth the supposed celestial design in the same manner as the plan of the Inca capital, Cuzco,

which Mr Hagar had described at a previous meeting of the Congress. The names and attributes of five of these signs are given by Lizana. Finally, the names and rituals of the Maya and Mexican festivals echo the attributes of the sign through which the sun was passing at the time. The correspondence between the Maya and Nahuatl symbols amounts to practical identity in many instances. Every sign in both zodiacs echoes the symbolism of the corresponding Peruvian sign, as described in Mr Hagar's two papers in the Proceedings of the Congress (*The Star-Chart of Salcamayhua*, Paris, 1900; the Cuzco paper above mentioned, New York, 1902) and in *The Peruvian Asterisms and Their Relation to the Ritual*, read before the Congress at Stuttgart, 1904, and published in the *American Antiquarian* vol. 26, p. 329 et seq.; and the three American zodiacs in turn combine with symbols peculiar to themselves numerous others which indicate remarkable Oriental analogies. These analogies are too arbitrary to be satisfactorily explained as coincidences or as like results of like causes acting on the human mind. The group of the spear-throwers is found in codices, all of which according to Professor Saville are regarded as having been completed prior to the first historic coming of Europeans. The symbols contained therein cannot, therefore, have been subject to post-Columbian influence, nor can such influence be reasonably supposed to have invaded any of the other symbols referred to. It is, therefore, a legitimate question — one which, in different material, interested the genius of Humboldt — whether we must not consider that the correspondence between the astronomical symbolism of the two hemispheres indicates an interchange of ideas between them at some time and by some route as yet unknown, but before the discovery of Columbus. Beyond this the material indicates the preëminence and the complexity of the astronomical cult amongst the most advanced peoples of both the Americas. It is hoped that this elucidation of the Mexican symbolic astronomy may help toward the further identification of the Mayan and Mexican hieroglyphs of which, as yet, we know so little and from which we may hope to learn so much of ancient America.

Dr Charles PEABODY (Cambridge, Mass.) gave an account of "Recent Cave Work in America." In Missouri and Arkansas,

throughout the "Ozark Uplift," are many rock-shelters, much resembling those of Dordogne. These have been occupied at various times by prehistoric peoples. Their presence is attested by ashes, charcoal, split animal bones, flint-chips, and implements of various materials. Occasionally stalagmitic deposits of ten to forty centimeters are found above evidences of human occupancy. The culture of the occupants is primitive, "problematical" objects are absent, pipes almost missing, ground stone objects very rare, pottery rude, and worked shell practically not to be found. The articles in chipped stone and worked bone are, however, numerous and skilfully wrought. The limitations of the culture place it in marked contrast to that of the eastern parts of the same states, near the Mississippi river. There seems to have been little intercourse between the highlands and the lowlands.

The subject presented by Dr George Grant MACCUDY (New Haven, Conn.) was "The Alligator in the Ancient Art of Chiriqui." The ancient art of the Province of Chiriqui, Republic of Panama, is particularly rich in decorative motives derived from animal forms. The animals most often represented are the fish, frog, parrot, jaguar, armadillo, and alligator, the last two being the favorites. The motives derived from the armadillo are as a rule plastic. They were discussed by the author at the Quebec Congress in 1906. Plastic forms of the alligator are not often met with except among gold ornaments. Painted forms of the alligator and derivatives therefrom are, on the contrary, very abundant, especially in two groups of pottery. These groups as well as gold ornaments were described and the evolution of decorative motives derived from the alligator was traced. It was pointed out that conventionalism may result from (1) the reduplication or elimination of parts; (2) transposition and substitution; (3) isolation of parts and their use independently of the whole, and (4) wholesale reduction and simplification. To give balance, for example, a second head may be added. Some part may be eliminated for lack of space, or transposed or substituted for another part. An instance of wholesale reduction and simplification is the representation of the alligator by means of a short curved line in a horizontal position, with a spot in the hollow of the curve to indicate the dermal markings. This motive is re-

peated to form an ornament about the rim of a vase. Spines as well as scales are used as independent motives. Among the gold and bronze objects the entire alligator head is a favorite decorative motive, being attached to plastic forms, that may or may not otherwise have reference to the alligator. A fine example is the mythical creature with human body and alligator head. On either side of the head and of the feet is an additional alligator head as an ornamental and symbolic feature. There are a number of representations in gold of this alligator-man with slight variations in details of execution. It must have been an important deity. The finest example of Chiriquian ceramic art, a chalice-shaped vase, is ornamented with a painting of this alligator-man in black, red, and purple on a cream ground, the central figure being accompanied by conventional scale, spine, and alligator motives instead of by additional alligator heads.

Other papers were read as follows :

Professor Heinrich MATIEGKA (Prague), "Parallelen oder Beziehungen zwischen der nordamerikanischen und mitteleuropäischen steinzeitlichen Keramik."

Regierungsrat Franz HEGER (Vienna), "Die archäologischen und ethnographischen Sammlungen aus Amerika im k. k. naturhistorischen Hofmuseum in Wien."

Manuel de Oliveira LIMA (Bruxelles), "Sur l'évolution d'une ville du Nouveau Monde du 16^{ième} au 20^{ième} siècle, à propos de la récente transformation de Rio de Janeiro."

Professor Don Antonio SANCHEZ-MOGUEL (Madrid), "Intervencion de Fray Hernando de Talavera en las negociaciones de Colon en los Reyes Catolicos."

Miss Adela C. BRETON (Montreal), (1) "Exhibition of a Copy of the Ancient Plan in the Museo Nacional, Mexico, supposed to be Part of a Plan of Tenochtitlan"; (2) Survivals of Ceremonial Dances Amongst the Indians in Mexico."

Dr Jean DENUCE (Uccle-Bruxelles), (1) "Une grande carte de l'Amérique par les Reinel (vers 1516)"; (2) "Note sur un vocabulaire complet de la langue Yahgane (Terre de Feu)."

Ignacio MOURA (Pará), "Sur le progrès de l'Amazonie et sur les Indiens."

Professor R. LEHMANN-NITSCHKE (La Plata), "Zur physischen Anthropologie der westlichen Chacostämme."

Dr A. WIRTH (Munich), (1) "Die Autobiographie Franz Rawie's (um 1720)"; (2) "Die Theorie Trombetti's von dem Zusammenhange der amerikanischen und Asiatischen Sprachen."

Professor FRANZ RITTER VON WIESER (Innsbruck), "Die Weltkarte des Pierre Destelier von 1553 im Besitze Sr. Exzellenz des Grafen Hans Wilczek."

Dr J. D. E. SCHMELTZ (Leiden), "Die niederlandische Tumac Humac-Expedition in Surinam."

Jonkheer L. C. VAN PANHUY (Hague), (1) "A Remarkable Book on the Indian Mind"; (2) "Communications about Ethnography and History of Surinam."

Professor Heinrich PAHISCH (Vienna), "Der Fischfang mit Giftpflanzen in amerikanischen Gewässern."

Professor Marshall H. SAVILLE (New York), "Archeological Researches on the Coast of Esmeraldas, Ecuador."

Dr H. Th. PREUSS (Berlin), "Das Fest des Weines bei den Cora-Indianern der mexicanischen Sierra Madre Occidental."

Professor Eduard SELER (Berlin), (1) "Die Sage vom Quetzalcouatl und den Tolteken nach den in neuerer Zeit bekannt gewordenen Quellen"; (2) "Die Ruinen von Chich'en-Itza in Yucatan"; (3) "Der altemexicanische Federschmuck des k.k. naturhistorischen Hofmuseums. Bericht über eine Untersuchung seiner Konstruktion und Beschaffenheit." (Both Seler and Heger agree with Mrs Nuttall in calling it a head-dress.)

Hauptmann a. D. L. WOLLMAR (Heidelberg), "Die mexikanischen Bilderschriften und die Zuverlässigkeit ihrer alten und ihrer neueren Interpretationen."

Professor Juan B. AMBROSETTI (Buenos Aires), "La Question Calchaquie et les travaux de la Faculté de Philosophie et Lettres de l'Université Buenos Ayres."

Professor Max UHLE (Lima), (1) "Die Frühkulturen der Umgebung von Lima"; (2) "Zur Deutung der Intihuatana."

Professor Enrico GIGLIOLI (Florence), (1) "Intorno a due rari cimeli precolombiani dalle Antille, molto probabilmente da San Domingo"; (2) "Di certi singolari pettorali di pietra e di conchiglia precolombiani, dalla Venezuela."

Professor Julius NESTLER (Prague), (1) "Ein von dem österreichischen Konsul in Managua (Nicaragua) gefundenes Idol"; (2) "Die Ruinenstätte von Tiahuanaco in Bolivien und ihre Bedeutung."

Professor R. SAKAKI (Kyoto), "Une nouvelle interprétation du pays 'Fou-sang.'"

Alberto FRIČ (Prague), "Völkerwanderungen, Ethnographie und Geschichte der Conquista in Südbrasilien."

Professor C. V. HARTMAN (Stockholm), (1) "Some Features of Costa Rican Archeology"; (2) "The Photographon, an Instrument which will Replace the Gramophone."

Dr Rudolph TREBITSCH (Vienna), "Ueber den Wert phonographischer Aufnahmen von Gesängen der Naturvölker."

Dr W. THABITZER (Copenhagen), "Demonstrationen von Lichtbildern der heidnischen Kultur der Ostgrönländer nebst Erläuterungen."

A. G. MORICE, O.M.I. (Kamloops, British Columbia), "La position du verbe dans les langues Denées."

P. FR. HESTERMANN, S.V.D. (Mödling), "Ueber die Panosprachen und ihrer Beziehungen."

Professor P. W. SCHMIDT (Mödling), "Zur Lautlehre der amerikanischen Sprachen und ihrer Transkription."

Among the publications presented to the Congress may be mentioned: "Reisestudien aus dem westlichen Süd-Amerika," by Princess Therese of Bavaria; "Exploraciones Arqueologicas en la Ciudad Prehistorica de 'La Paya,'" by Professor Ambrosetti; "Nouvelles Recherches sur la Formation Pampéenne," by Professor Lehmann-Nitzsche; a "Festschrift" in honor of the Congress, including two papers by Regierungsrat Franz Heger, relative to the American archeological and ethnographical collections in Vienna, especially the ancient feather head-dress; "Die Karten von Amerika in dem Islario General des Alonso de Santa Cruz," by Dr Franz Ritter von Wieser; "Beiträge zur Völkerkunde von Surinam," by C. A. de Goeje; the third volume of collected studies by Professor Seler; and the first volume of the Publications of the American Ethnological Society of New York, containing the Fox Texts collected by Dr William Jones.

The social features as well as the opportunities for sight-seeing and excursions were much appreciated by the members. Special provisions were made for visiting the royal imperial museums, the Schatzkammer, the phonogram archives of the Imperial Academy of Sciences, the Museum für österreichische Volkskunde, the Palace of Schönbrunn, Kahlenberg, and the Prater. The evening entertainments included complimentary tickets to the Royal Opera and Theater, and a banquet given by the municipality at the Rathaus. The invitation of Count Hans Wilczek to spend Sunday at Schloss Kreuzenstein as his guests was quite generally accepted.

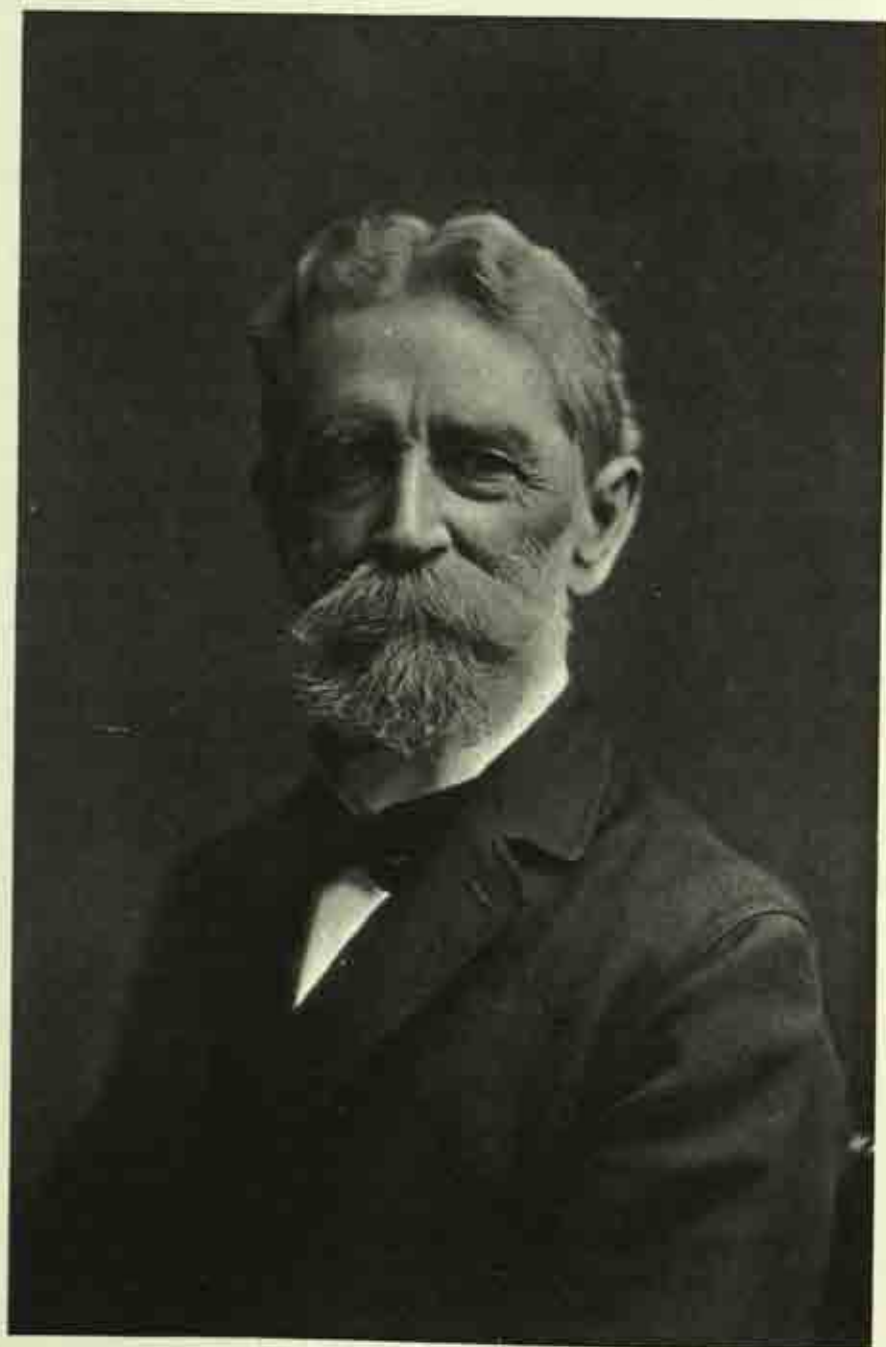
At the closing session it was voted to include Portuguese as one of the official languages of the Congress, the next session of which will be held in 1910. As this will mark the hundredth anniversary of both Mexico and Argentine Republic, the Congress will meet

first in Buenos Aires during the month of May, and in Mexico City in September.

Owing to the lateness of the season only about twenty-five members were able to take part in the excursions to Budapest, Lake Balaton, and Bosnia and Herzegovina, which were organized to follow immediately after the close of the Vienna Congress.

VALE UNIVERSITY,

NEW HAVEN, CONNECTICUT.



O. J. Mason

1838-1908

Otis Tufton Mason

The span of Otis Tufton Mason's life, which began in Eastport, Maine, on April 10, 1838, and closed on November 5, 1908, in Washington City, covered most of the period characterized by the enormous advances of industrial arts and of science that marked the nineteenth century. During the later years of his life he expressed great satisfaction that he had been privileged to witness the modern miracles of the world's progress, and voiced a regret that he could not live to see what was yet to be.

The story of how the boy, with few advantages, became articulated with the world movements in science, begins in the business reverses of his father, which determined the migration of the family to the southward. While yet an infant, this removal brought him to Philadelphia and shortly thereafter to Haddonfield, New Jersey, where the youth, under excellent teachers and in the best of family surroundings, laid the foundation for future activities. The family moved to Woodlawn, Virginia, in 1849, and was joined by Otis in 1851. He has often said that "this was the opening of the gates of circumstance," for in 1856 he became a student in Columbian (now George Washington) University, and had chosen that path of life which he followed persistently afterward. He graduated from Columbian College in 1861. In the next year he became principal of the preparatory school, where he taught until 1884. That Professor Mason was an ideal teacher is attested by a myriad of witnesses, who join in unstinted praise of his tact, gentleness, and helpfulness, and are thankful for their association with him.

With a mind trained like the muscles of an athlete, Mason soon reached out for materials pertaining to the study he had chosen under the guidance of President Samson of Columbian College—the culture-history of the peoples of the eastern Mediterranean. The Smithsonian Institution, then entering its third decade, attracted him, and guided by the practical wisdom of Joseph Henry, he abandoned his Oriental studies and took up that of the peoples

of America. This he regarded as a crucial event in his life, and in 1872 we find him connected in his work with the Institution as collaborator in ethnology. For twelve years he gave every spare moment, aside from teaching, to the collections which had gathered in the Institution, assembling and arranging them in the new hall of the Smithsonian and preparing a catalogue. His next steps were to edit the scheme of Gustav Klemm in *Kulturgeschichte*, or the study of history as written in human handiwork (1874); to prepare a pamphlet for the guidance of archeologists in their explorations, and also a guide-book for ethnologists. From these organized and systematic beginnings have grown the present greatly improved exhibits of the National Museum. It was apparent that Mason had now found his real life-work. In 1884 he laid aside teaching and became curator of the department of ethnology in the National Museum, where for almost a quarter of a century he labored with abundant result. The Museum which had been for years the dream of Baird became an actuality in 1881, when its new building was completed, and the great collections piled in confusion in its halls began to fall into order under the constructive minds of Goode and Mason. The first years of Mason's intendency were devoted to the classification of this material, in setting forth the scope of ethnology, and in publishing the results of his studies. Among the twenty writings, mostly notes consisting of a single page, which he published in 1884, were two of a form new to scientific literature — "Throwing Sticks in the National Museum" and "Basketwork of the North American Aborigines" — and which mark an epoch in the history of ethnology. The idea which Professor Mason had in mind was that each invention takes on tribal modifications, the sum of which is the range of variation; and these, over and above the environmental causes of variation, may give clew to the origin of the invention and will reconstruct an interesting chapter of human thought. The order of arrangement for study was geocultural, and the descriptions according to natural history methods; the specimens thus accurately worked up became types. These papers evidently grew out of the plan adopted by Professor Mason in arranging the material under his charge. The writer often heard his injunction to "put like with like, and tribes and localities will take care of themselves."

The monographs cited were the forerunners of a series appearing at frequent intervals, the last, a "Vocabulary of Malaysian Basketwork," based on the W. L. Abbott collections, issuing from the press on the day of his funeral. They are of the greatest value to students, and being based on unalterable scientific description can never be superseded. The immediate and wide recognition of these works was due to the fact that they conveyed a message in an intelligible, even a literary, form. The ardent desire to say the last word on the specimens under study led him to so thoroughly examine their structure and function that he was as familiar with them as were their original makers, and this proficiency he exacted of himself before he published his results. His skill in the dissection of aboriginal handiwork, especially in the textile art, was marvelous, and the mastery of intricate detail seemed to have a fascination for him, bringing out his unusual powers as a mathematician.

Realizing, after the first enthusiasm, that a museum cannot be arranged entirely on the order of the development of inventions, Professor Mason adopted the idea of the ethnic unit, and arranged the excellent Aino collection as an example. In one exhibition case he epitomized the social and material culture of this people, and from this beginning has sprung the more elaborate type of this arrangement in the National Museum.

Professor Mason was an expert in classification. He delighted in the problems involved in the schematic arrangement of the contents of the logos, and nothing was too difficult for his active mind, which grasped and marshaled multifarious relations with the suavity of a master. The writer's first years with him, aside from routine work with the collections, were spent in collating the classifications that had been put forward as ordinating the contents of anthropology, and especially those relating to classification of the races of man, which appeared in three large wall charts. His brochure entitled "What is Anthropology?" is a model of lucidity that formed the basis of the working plan of the Anthropological Society of Washington, and with slight modification its scheme remains the basic structure of the Society to-day.

As early as 1873, Professor Mason began the preparation of a list of the tribal names mentioned in the literature on the Indians,

and by 1879, when the Bureau of Ethnology was organized, had recorded several thousand names, with references to the works in which they are found. From this list, the "Handbook of American Indians," now in process of publication by the Bureau, had its inception, and to the publication in its fuller form he contributed articles on the arts and industries of the American tribes. Mason's relations with the Bureau were intimate for many years, and to him is due, not only during its formative period but throughout its history, a commendable share in its success.

Professor Mason's collection of tribal names was enlarged constantly, the results, embracing the whole world, remaining in the National Museum as a monument to his indefatigable zeal.

In February, 1879, there appeared in the Washington press a call for the formation of an Archeological Society in Washington, signed by J. M. Toner, M.D.; Otis T. Mason, Columbian College; and Garrick Mallery, U. S. A. On the 10th of the month there assembled in the Regent's room of the Smithsonian Institution a number of persons who were willing to join in the enterprise. Professor Mason advocated the widening of the scope of the society, and proposed the name Anthropological instead. It was he who wrote the constitution under which the Anthropological Society of Washington was organized, and he remained deeply interested in it until the close of his life, contributing largely to its program and to its organ, *The American Anthropologist*.

For eighteen years Professor Mason was a member of the United States Board on Geographic Names. Until the time of his death he greatly enjoyed the work of this body, which found so useful the knowledge he commanded on the nomenclature of the American Indians.

Professor Mason was a man of wide perspective and catholicity. His early education was begun at a period when the culture side of study was its chief charm and utility; classical studies preponderated, and he fell under the sway of the literary spirit of the period. This was apparent in his activities in Washington from the early years of his novitiate when he entered into the work of the literary societies, reading papers upon subjects which were of general interest. This feature of imparting instruction was continued as long as his physical powers permitted. He was also a pleasing public

speaker, and everyone felt attracted toward him. He was a friendly man, thoughtful and kind, and so enthusiastic about his science that he compelled a like interest in everyone with whom he came in contact, likewise planting the germ of the desire to study anthropology into the minds of hundreds whom he never saw. Besides this, the stimulation of his work was felt by individuals and institutions wherever the current of thought flowed. He never forgot in anthropology that he was himself a man — he was a happy instance of an individual who could take his human interests into his work.

The alacrity with which Professor Mason attacked the problems around him was an inspiration to those who knew him; he well recognized the vastness of science, yet, rather than being appalled, with gladness of heart he reaped in its fields. He had attained the enviable stage where his work had become play, his meat and drink, and the absorption of his waking moments, and even in the night he often awoke to jot down a thought upon the tablet that always hung at his bedside. This happy combination of mental alertness, capacity for hard work, and humor, conspired to make him an exceptional man, and those who were associated with him ever felt his elevating influence.

It has been remarked that Professor Mason's chief characteristic was his optimism. Few men have been called to endure more severe trials — he saw his family fade away until but one remained, and through all the anxieties that would have overwhelmed a lesser man, he bore a most equable demeanor, and none heard him complain. The secret of this optimism was not at all grounded in fatalism, but rather lay in the deeper philosophy of education with which he was imbued, that saw in every contact with life, whether it brought pain or pleasure, something that schooled the individual and molded his character.

It is somewhat difficult, at this time, to fully appraise the value of Professor Mason's scientific work. But those who knew the care which he took to insure the accuracy of his observations do not doubt that the results of his labors will have a permanent place beside those who have been foremost in promoting the science of Anthropology; and many of his writings will be utilized by future generations as text-books in this science.

A selected list of Professor Mason's writings follows :

- The Leipsic Museum of Ethnology. *Smithsonian Report* 1873, 390-410.
- Ethnological directions relative to the Indian tribes of the United States. Prepared under the direction of the Office of Indian Affairs. Washington, 1875. 32 pp. (This pamphlet is based on Gustav Klemm's classification of Ethnology and formed the guide for collectors for the Centennial Exposition of 1876.)
- The Latimer collection of antiquities from Porto Rico in the United States National Museum, at Washington, D. C. *Smithsonian Report* 1876, 372-393, 60 figs.
- A comparison of a written language with one that is spoken only. *Bull. Philos. Soc. Wash.*, 1879, III, 139-140.
- What is Anthropology? A Saturday Lecture delivered in the U. S. National Museum, March, 1882. 21 pp.
- The scope and value of anthropological studies. *Proc. A. A. A. S.*, 1884, 365-383.
- The relation of the mound builders to the historic Indians. *Science*, 1884, III, 658-659.
- Basket-work of the North American aborigines. *Rep. U. S. Nat. Mus.* 1884, 291-306, 64 pl.
- Throwing-sticks in the National Museum, *Ibid.*, 279-289, 17 pl.
- Indians in the United States, June 30, 1886. *Rep. U. S. Nat. Mus.* 1885, 902-907.
- Resemblances in arts widely separated. *Amer. Naturalist*, 1886, XX, 246-251.
- The Ray collection from Hupa reservation. *Smithsonian Report* 1886, 205-238, 118 figs., 26 pl.
- The human beast of burden. *Rep. U. S. Nat. Mus.* 1887, 237-295, 54 figs.
- Cradles of the American aborigines. *Rep. U. S. Nat. Mus.* 1887, 161-212, 45 figs.
- The educational aspect of the United States National Museum. *Johns Hopkins Univ. Studies in Hist. and Polit. Sci.*, 1890, VIII, no. 4, 504-519.
- The natural history of folk-lore. *Jour. Amer. Folk-lore*, 1891, IV, 97-105.
- Aboriginal skin-dressing. *Rep. U. S. Nat. Mus.* 1889, 553-589, 33 pl.
- The ulu, or woman's knife, of the Eskimo. *Ibid.*, 1890, 411-5, 21 pl.
- The land problem. Lectures before the Brooklyn Ethical Association. N. Y., D. Appleton & Co., 1892; pp. 111-130, 12 maps.
- The birth of invention. *Proceedings and Addresses, Celebration of the Beginning of the Second Century of the American Patent Systems*, Washington, 1891, pp. 403-412; also *Smithsonian Rep.* 1892, 603-611.

- Technogeography, or the relations of the earth to the industries of mankind. *Am. Anthropologist*, 1894, VII, 137-161.
- North American bows, arrows, and quivers. *Smithsonian Rep.* 1893, 631-679, 58 pl., many figs.
- Woman's share in primitive culture. N. Y., D. Appleton & Co., 1894, 295 pp., 60 figs.
- Aboriginal American mechanics. *Mem. Internat. Congress of Anthropology*, Chicago, 1894, 69-83.
- Historic and ethnologic science. *The Epoch*, Washington, 1895, 1, 3-11.
- The origin of inventions : Study of industry among primitive people. London, Walter Scott, 1895, 419 pages, 76 figs.
- Influence of environment upon human industries or arts. *Smithsonian Rep.* 1895, 636-666, 1 pl., 2 figs.
- Migration and the food quest : A study in the peopling of America. *Smithsonian Rep.* 1894, 523-539, map.
- Primitive travel and transportation. *Rep. U. S. Nat. Mus.* 1894, 237-593, 25 pl., 260 figs.
- Aboriginal American zoötechny. *Am. Anthropologist*, 1899, n. s., 1, 45-81, 1 fig., 4 pl.
- The man's knife among the North American Indians. *Rep. U. S. Nat. Mus.* 1897, 727-745, 17 figs.
- Ethnology and archaeology of Mexico. In *Mexico : A geographical sketch*, compiled by the Bureau of American Republics, 1900, 23-46.
- Traps of the Amerinds : A study in psychology and invention. *Amer. Anthropologist*, 1900, n. s., 11, 657-675.
- Aboriginal American harpoons : A study in ethnic distribution and invention. *Rep. U. S. Nat. Mus.* 1900, 189-304, 20 pl., 92 figs.
- Aboriginal American basketry : Studies in a textile art without machinery (with bibliography). *Rep. U. S. Nat. Mus.* 1902, 171-548, 248 pl., 212 figs. (Reprinted by Doubleday, Page, and Co., N. Y., in two volumes.)
- The ripening of thoughts in common : Common sense is thoughts in common. *Proc. Am. Philos. Society*, 1904, XLVIII, no. 176, 148-155.
- Mind and matter in culture. *Am. Anthropologist*, 1908, n. s., x, 187-196.
- Vocabulary of Malaysian basketwork : A study in the W. L. Abbott collections. *Proc. U. S. Nat. Mus.*, XXXV, 1-51, pl. i-xvii, figs. 1-41, Nov. 7, 1908.
- U. S. NATIONAL MUSEUM,
WASHINGTON.
- WALTER HOUGH.

BOOK REVIEWS

The Problem of Age, Growth, and Death. A Study of Cytomorphosis, based on Lectures at the Lowell Institute, March, 1907. By CHARLES S. MINOT. New York and London: G. P. Putnam's Sons, 1908. Pp. xxii, 280. The Science Series.

This book is another contribution to the rapidly growing literature of the inner constitution of the animal body and of the value to man of a knowledge of it. Such studies, of which those of Metchnikoff are the type, constitute further attempts to stem the tide of degeneracy which everywhere threatens the human race. They are probably more effective than Galton's "eugenics," but really they may be regarded as a part of that movement, taken in a wide sense.

The term cytomorphosis is of Dr Minot's mintage, but seems to be appropriate and useful. His main thesis is that throughout life the cells of the body are undergoing change, and that this change consists in the increase with age of the non-nuclear contents of the cells at the expense of the nuclear contents. In other words, the nucleus is constantly diminishing, and the "protoplasm" increasing. This begins to take place very early, and means the same in youth as in old age, viz., senescence. Still he admits that the vigor of body and mind increases until after middle life, so that it is not proved that cytomorphosis is a pathological, nor even a degenerative phenomenon. He further shows that the rate at which it takes place diminishes with age, being, strangely enough, most rapid at an early age, and slowest in old age. His doctrine does not carry him so far as to accept the Trollope-Osler view, but he insists, and, as it would seem, justly, that the most should be made of youth and early life. The idea that mental training should be postponed until the brain structure has become rigid cannot be too soon exploded.

There is much more in the book that commends itself to unbiased minds. Although the author clings to the idea that the cell is the absolute unit of biology, and doubts the existence of cytods or enucleated cells, he is probably right in also doubting the existence of definite units of heredity, which have been so much discussed, and which have received so many names (gemmules, pangenes, biophores, plastidules, etc., some dozen in all). And although he doubts the existence of "plasma bodies," or independent protoplasmic beings, he is still on solid ground

in ascribing to protoplasm all the powers that have been claimed for such beings, and his assumption of an indefinite number of different forms of protoplasm is nothing more than seems to be taught by inorganic chemistry. Again, in defining the existence of a vital force, or internal impulse toward growth and activity, Dr Minot does but revive a view that has always been held by the best minds. The modern tendency to reject it is only a reaction against the old metaphysical Archæus of prescientific times. On the subject of feeling and consciousness Dr Minot also utters much truth and clears up a mass of confusion. There is much else that might be justly praised if space would permit.

On the other hand, nothing can be said in favor of the literary style and character of the book. It seems to be a stenographic report of the lectures, based chiefly on the fine series of lantern views that were used. The reporter's notes have scarcely been revised, much less edited, and all the extra verbiage necessary in such demonstrations before an audience is retained. Even where the views are not reproduced in the book, the oral descriptions are left. All this not only mars the style but greatly increases and unnecessarily pads out the letterpress. Worse than this, it makes it sound egotistical, when it might not have seemed so to the audiences. But, like many other lecturers, Dr Minot makes the mistake of assuming the complete ignorance of his hearers, which is not safe in these days of popular scientific literature. He claims great originality, much of which is open to doubt. On some points, even a layman has a right to doubt. His answer to Weismann's declaration that the cell is "immortal" is superficial if not unfair. It is the germ that is immortal, and the whole claim is embodied in the doctrine of the "continuity of the germ-plasm," which Dr Minot does not reject. On any monophyletic theory of life the primordial germ-plasm has never died. If it had the life of the globe would have ceased.

The question may be raised whether Dr Minot's whole argument may not be in a circle. As set forth on page 228, it seems to "put the cart before the horse." Is not the cytomorphosis due to aging rather than the cause of it?

The author is evidently at home with his German and his Italian, but his quotations from the French are mostly faulty. Probably the worst case is the word "infallibilité" under the portrait of Verneuil. Of course it is correct in the photographic reproduction in Verneuil's own handwriting, but that is scarcely legible. On page 264 he speaks of Maupas' doctrine of "réjeunissement." There is no such French word.

LESTER F. WARD.

PROVIDENCE, R. I.

Law: Its Origin, Growth and Function. By JAMES COOLIDGE CARTER.
New York: G. P. Putnam's Sons, 1907. 8°, 355 pp.

This book is worthy of the most careful attention from students of human institutions, because it is the first attempt with a measurable degree of success to define law from a scientific standpoint and to lay the foundations of a scientific study of law. Beginning with the inquiry as to what law is, Mr Carter points out that the confusion and contradiction in the attempts to define it arise from the fact that proper methods of investigation have heretofore not been adopted. Instead of *a priori* reasoning from assumptions, the actual facts as to what law has actually been among all peoples and in all epochs as well as what it now is should be accumulated and studied, or in no other way can we have a science of law. In pursuit of such inquiry the author surveys, in a general way, the laws of primitive societies, drawing upon anthropological data. This portion of the book, however, is inadequate and by no means utilizes the material which already exists on the subject. The review of the law of the early Greeks and Romans and of the Anglo-Saxons is more satisfactory but still fragmentary. The historical survey of the general development of English Law is continued down to the present time and the conclusion reached that human conduct follows its own inherent laws which are expressed or manifested in custom.

"Law begins as the product of the automatic action of society and becomes in time a cause of the continued growth and perfection of society. Society cannot exist without it, or exist without producing it. *Ubi societas ibi lex.* Law, therefore is self-created and self-existent. It is the form in which human conduct—that is, human life—presents itself under the necessary operation of the causes which govern conduct. It is the fruit of the myriads of concurring judgments of all the members of society pronounced after a study of the consequences of conduct touching what conduct should be followed and what should be avoided. . . . The conclusion is clear that habit and custom furnish the rules which govern human conduct, and that they still exert over enlightened man the same imperious dominion that they did among the primeval hordes which peopled the world before the dawn of civilization. To the absolute generality of this conclusion an exception is to be made for the influence of legislation; but the extent of this exception diminishes to a point where we may, for all large and general purposes, dismiss it from attention, when we consider that its principal function is to supplement and aid the operation of custom and that it can never supplant it and that its own efficiency is dependent upon its conformity to habit and custom. . . . Inasmuch

as conduct is necessarily controlled by previous thought, and such thought is determined by individual constitution, that is, character, and the environment, nothing can directly control conduct, which cannot control both character and environment. It is not, therefore, possible to make law by legislative action. Its utmost power is to offer a reward or threaten a punishment as a consequence of particular conduct, and thus furnish an additional motive to influence conduct. When such power is exerted to reinforce custom and prevent violations of it, it may be effectual, and rules or commands thus enacted are properly called laws; but if aimed against established custom they will be ineffectual. Law not only cannot be directly made by human action, but cannot be abrogated or changed by such action."

If this conception of law is correct, a science of law at once becomes possible. If law is not what some one man or few men arbitrarily determine it shall be, but is the form in which conduct is molded by the operation of certain natural causes, it can be studied objectively by the scientific method. That this conception is correct the author clearly shows, and in the main it agrees with the theory of the English Common Law. What is really necessary however to the foundation of law as a science is to determine further whether customs can be arranged in categories and the causes which produce them likewise be determined and classified. The author stops short of this essential inquiry. He recognizes the necessity for it but refers it to the science of Psychology, and his explanation of uniformities of conduct — habits and customs — is that "as the constitutions of men in the same society are similar and the environments similar, the thoughts must be similar and the conduct consequently similar." But while the principles of the unity of the human mind and the substantial uniformity of its action under the same environment are well established, it is necessary to go even further than individual psychology will carry us if we would understand man's habits and customs, and consequently his laws. If the appeal had been to ethnic psychology and the study of the "group mind," the foundation would have been broad enough; but nothing else will suffice because, as Wundt has expressed it, "the resultant arising from united psychological processes includes contents which are not present in the components." But if the theory is faulty at this point it does not impair the validity of the conclusions drawn from the study of custom, since this is itself a product of the ethnic mind. The discussion of the relations of law and ethics, while interesting, might also have been clarified by a fuller recognition of the concept of the group as an entity distinct from the individuals composing it.

This theory of law, while reconcilable with the various theories of Natural Law, is radically opposed to those which define law as the command of the sovereign power in a state. The currency of the latter is perhaps largely due to its apparent conformity to legislation as we know it in modern times, and it is precisely here that the scientific theory will meet the strongest doubts. Too many have confused the essential nature of law with the force applied by government in its endeavor to sustain it. This distinction Mr Carter makes abundantly clear. His discussion of the force theory is mainly in connection with the formulations of it by Bentham and Austin, and in it he points out that this theory was not the product of an original and independent inquiry into the nature of law, but was contrived to answer the supposed exigencies of political necessity. That it was thus adopted by Blackstone was pointed out in this country by James Wilson as early as 1792. It may seem hardly worth while to devote so much space to a refutation of the Austinian theory as does the author. Austin's theory was simply a restatement of Blackstone's which was founded on Puffendorf and Hobbes, the latter being derived from theological speculation. Blackstone's definition of law was refuted in the clearest and most masterly manner by James Wilson in his *Lectures on Law* delivered in 1790-92. He clearly elucidated the American theory that the only basis of law is consent. He finds the law to be originally custom, but custom he regards merely as the best evidence that the law has been established by the consent of all the members of the society. He therefore bases all law upon contract, but he does clearly show that contract is the essential basis of all legislation. It is a strange anomaly that this brilliant criticism of Blackstone by one of the ablest of American legal writers should be no better known than it is. The excellence of Blackstone's work as a practical treatise for instruction in elementary law has overshadowed its theoretical fallacies and the tares have been sown with the wheat.

But more important than the refutation of Austin is the discussion of the nature of legislation, its appropriate province and its limitations. This is perhaps the most interesting part of the book to the general reader, and the conclusions are applied to present-day conditions. Of legislation he says:

"Custom first operates unconsciously to produce law. In a further stage of social advancement, society becomes an organized power and consciously exerts itself to aid and perfect the development of law. Finally it comes to do what the judiciary from its inability to break suddenly from the past and from its limited capacity to continue political

instrumentalities for the enforcement of custom is unable to do, not to make law, but to make rules relating to law, as well as the complex machinery which the practical administration of law by the state requires."

Legislation, according to his theory, is essentially a function of government; law of society and the former exist not to supplant but to preserve the latter. This discussion of the province of legislation naturally leads to a discussion of codification. The limited field in which codification may be of value is shown and the absurdity of the arguments for its extended use exhibited. It is examined historically, and the author shows that the early so-called codes are not properly codes as that term is now understood, and that no successful application of codification on any considerable scale has ever been made.

The foregoing may serve to give some idea of the character and scope of the work. It is interesting and valuable not only for what it actually accomplishes for legal theory, but perhaps even more as pointing the way to the fruitfulness of the scientific exploration of the field of law. The old *a priori* theories are outgrown and the institution of law must now be studied in the light of recent attainments of anthropology. It is now seen, as was said by James Wilson, that "law can never attain either the extent or the elevation of science, unless it be raised upon the science of man." As a contribution to this true science of law this book is significant.

WAREEN, PA.

EDWARD LINDSEY.

The Scope and Content of the Science of Anthropology. Historical Review, Library Classification and Select, Annotated Bibliography; with a List of the Chief Publications of Leading Anthropological Societies and Museums. By JUUL DIESERUD. Chicago: Open Court Publishing Co., 1908. 12°, 200 pp.

This useful little volume comprises, as indicated by its title-page, several distinct portions. In Part I, the author gives a concise and yet pretty full discussion of the varying views held by anthropologists as to the scope and content of Anthropology. Beginning with the earliest use of the term by Magnus Hundt in the early part of the sixteenth century, the various authorities are taken up in chronological order, and a brief statement made of their opinions in regard to what subjects should be included under the term Anthropology, and what divisions and subdivisions should be recognized within it. By thus bringing together the widely varying views on both these questions, the author has done a useful piece of work, and is able to show the uncertainty still surrounding the nomen-

clature of the science. Perhaps the greatest lack of uniformity is shown in the usage with regard to the terms *Ethnology* and *Ethnography*. The majority of writers, however, are coming to restrict the former to the general and comparative study of culture in all its phases, the latter to the particular, descriptive study of definite local groups. As a review of this whole matter of nomenclature, this portion of the volume will be very useful.

In the preface, the author states that he was led to consider the subject in connection with his work as librarian and bibliographer, in an endeavor to prepare a satisfactory classification for books. In Part II the classification adopted is given in considerable detail. While commendable on the whole, there are several points which deserve criticism. Some of the terms employed seem open to objection, such as *Somatography*, *Culture Anthropology*, etc., which have as yet little or no usage outside a very narrow circle. More unfortunate are several errors, which are almost inexcusable. Under *Systematic or Taxonomic Anthropology*, the American Race is divided into the indefensible groups of North American Indians, Mexican Indians, Central American, South American. If the principle of subdivision adopted were primarily geographic, something might be said perhaps for this arrangement, but where the basis is that of physical types, or linguistic affiliation (for both appear to be used), this grouping is absurd, for the author makes these divisions equivalent, for example, to his division of the Mediterranean branch of the "White Race" into Indo-Iranian, Semitic, Hamitic, etc. Again under *Ethnography*, *Polynesia*, as a geographical area corresponding to *Micronesia*, *Melanesia*, etc., is entirely omitted, and the island groups of Hawaii and New Zealand are singled out, and placed on an equal footing with the Malay archipelago, *Melanesia*, *Papuasias*, and other large areas. Equally indefensible is the arrangement under North American Indians. Here only eight stocks are mentioned, and these are selected apparently at random, without regard to their relative importance, the Pima, Yuma, and Kiowa, for instance, being three of the number chosen. Furthermore, Hopi and Pawnee are placed in this same category, as if they were stock names, and all the Pacific Coast tribes are lumped under one heading. There are a number of similar criticisms which might be made in regard to other parts of the classification, but these examples are enough to show that the author should have spent a little more time in familiarizing himself with the more elementary principles of his science before attempting to prepare his classification.

Part III contains a useful selected and annotated bibliography, mainly

of works on general Anthropology and Ethnography. The lists of anthropological and ethnological societies and museums and their publications will prove convenient, especially to librarians.

CAMBRIDGE, MASS.

R. B. DIXON.

SOME NEW PUBLICATIONS

ABEL, ANNIE HELOISE. The historical events resulting in Indian consolidation west of the Mississippi. (Reprinted from *Ann. Rep. Amer. Hist. Assn.* for 1906, vol. I, pp. 233-438, Washington, 1908.)

A valuable historical essay that was awarded the Justin Winsor prize.

BARRETT, S. A. Pomo Indian basketry. (*University of California Publications in American Archaeology and Ethnology*, vol. 7, no. 3, pp. 133-276, pl. 15-31. Berkeley, Dec., 1908.)

CONVERSE, HARRIET M. Myths and legends of the New York State Iroquois. Edited and annotated by Arthur Caswell Parker. (*New York State Museum, Bulletin 125.*) Albany: University of the State of New York, 1908. 8°, 195 pp., ill.

LEÓN, NICOLAS. *Escritos varios y publicaciones hasta el año 1908.* 16°, 34 pp., 3 ll.

A record of the writings and editorial contributions of one of the most prolific of Mexican scientific men, now published in commemoration of the close of a quarter century since his graduation in medicine. The list records the titles of Dr León's original writings, as well as of the works of various authors which he has edited and reprinted or has had printed for the first time, followed by a list of the societies and institutions with which he has been associated.

LOWIE, ROBERT H. The Northern Shoshone. (*Anthropological Papers Am. Mus. Nat. Hist.*, II, pt. II, 163-306, 1 pl., 20 figs. New York, 1909.)

MASON, OTIS T. Vocabulary of Malayan basketwork: A study in the W. L. Abbott collections. (*From Proceedings U. S. National Museum*, Vol. XXXV, pp. 1-51, pls. 1-XVII, Washington, 1908.)

MINOT, CHARLES S. The problem of age, growth, and death. A study of cytomorphosis based on lectures at the Lowell Institute, March, 1907. New York and London: G. P. Putnam's Sons, 1908. 8°, xxii, 280 pp.

For review, see pages 668-669.

PEPPER, GEORGE H., and WILSON, GILBERT L. An Hidatsa Shrine and the Beliefs Respecting it. (*Memoirs Am. Anthr. Asso.*, II, pt. 4, Lancaster, Pa., 1908.) 8°, pp. 275-328, pl. xi-xiii. Price 50c.

SPINDEN, HERBERT JOSEPH. The Nez Percé Indians. (*Memoirs Am. Anthr. Asso.*, II, pt. 3, Lancaster, Pa., 1908.) 8°, pp. 165-274, pl. vi-x. Price 95c.

STARR, FREDERICK. A bibliography of the Congo languages. (University of Chicago, Department of Anthropology, Bulletin V. Chicago: University of Chicago Press, 1908.) 8°, 97 pp., ill.

STONE, ALFRED HOLT. Studies in the American race problem. With an introduction and three papers by Walter F. Willcox. New York: Doubleday, Page & Co., 1908. 12°, xxii, 555 pp.

STREHLOW, CARL. Mythen, Sagen und Märchen des Loritja-stammes. Die totemistischen Vorstellungen und die Tjurunga der Aranda und Loritja. (Veröffentlichungen aus dem Städtischen Völker-Museum, Frankfurt am Main, Frankfurt am Main: Joseph Baer & Co., 1908.) 4°, x, 84 pp., ill.

TYLER, JOHN M. Man in the Light of Evolution. New York: D. Appleton & Co., 1908. 16°, xiv, 231 pp.

VAN GENNEP, ARNOLD. Religions, mœurs et légendes. Essais d'ethnographie et de linguistique. Paris: Société du Mercure de France, 1908. 16°, 318 pp.

WEULE, KARL. Wissenschaftliche Ergebnisse meiner ethnographischen Forschungsreise in den Südosten Deutsch-Ostafrikas. Ergänzungsheft Nr. 1 der Mitteilungen aus den Deutschen Schutzgebieten. Berlin: Ernst Siegfried Mittler und Sohn, 1908. 4°, x, 150 pp., 63 pl., map.

WISSLER, CLARK, and DUVAL, W. C. Mythology of the Blackfoot Indians. (Anthropological Papers Am. Mus. Nat. Hist., II, pt. 1, 1-163. New York, 1908.)

PERIODICAL LITERATURE¹

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 directly 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

Belck (W.) and Bertholet (A.) Die Erfinder der Eisentechnik. (Z. f. Ethnol., Berlin, 1908, XI, 241-253, 273-276.) Discussion of the question of the origin of iron-smelting (replies, rejoinders, etc.), the share of the Palestinian peoples, etc., in this invention. See *American Anthropologist*, 1907, N. S., IX, 749.

Cunningham (J. T.) The evolution of man. (Science Progress, Lond., 1908, III, 192-201.) Treats of "some of the modern conceptions of biology in relation to the human species," arguing that "anthropology requires to be reinvestigated from modern points of view." According to Dr. C., "man affords an example of a single species which has started a new group, which might become a genus or family"; and "adaptive characters are due, not to selection, but to the effects of functional and physical stimulation." Also "diagnostic characters are not adaptive, and therefore not due to selection, but to blastogenic variation."

Dussaud (R.) Anciennes civilisations orientales, fouilles et découvertes. (R. de l'Éc. d'Anthr. de Paris, 1908, XVIII, 267-276.) Notes on chronology of ancient epochs (studies of King, Lehmann, Hilprecht, Thureau-Dangin, Meyer), investigations in Palestine (Petrie, Schumacher, Vincent), Elam and the Egean (J. de Morgan), the Mycenaean at Delos (Holleaux), ancient Jewish documents from Elephantine (Sachan), scientific expedition to Abyssinia (Littmann, etc.), level of the Mediterranean in antiquity (Cayeux), etc.

van Gennep (A.) Le rite du refus. (A. f. Religsw., Lpzg., 1907, XI, 1-10.) Treats of "ceremonial refusal" (bishops

of early Christian church, Popes, petty kings of Loango, Nigeria, etc., early Khalifa,—sometimes the order of an old woman is necessary to cause the office to be taken) in various parts of the world. Van G. considers this "a ceremonial socializing of responsibility," the chief being thus made responsible and his people with him, not he alone.

Giannelli (A.) Sulla interruzione del sulcus Rolandi. (A. d. Soc. Rom. di Antrop., 1908, XIV, 44-59, 2 figs.) Describes 4 cases of interruption of the sulcus Rolandi (3 female, 1 male; 3 Italian, 1 Jew; all psychopaths, 2 idiots). G. regards the presence of the median fronto-parietal fold as a mark of inferiority and an arrest of development.

Gothein (M.) Die Todsünden. (A. f. Religsw., Leipzig, 1907, X, 416-484.) Discusses in detail the 7 *peccata mortalia* or "deadly sins," as regarded by the early Christian church, its theologians and philosophers, their connection in hermetic thought with the 7 planets, the 8 mortal sins of the Eastern Church, the deadly sins in Alcuin, Prudentius, Cassian, Gregory (cf. Horace) and his successors, the 7 deadly sins in ecclesiastical art, in poetry and prose of the Middle Ages, etc. (Dante, Alanus de Insulis), the ordering of the punishments of hell according to these sins (in a group of works of the end of the 15th and beginning of the 16th centuries), the order of the 7 deadly sins (the *saligia* scheme for remembering taken up by the Jesuits); the correlation of the deadly sins with animals (the high tide of representation of these sins comes in the 13th century; the Christian fights against evil spirits, wild animals, etc., the death-dance, morality plays—in England the allegorical figures lingered longer than elsewhere), etc. Interesting is John Lilly's

¹ Beginning with Volume XI (1909) the reviews of periodical literature will be published annually instead of quarterly. An opportunity will be given to members and subscribers to procure separate copies if desired.

The Woman in the Moon, as showing how long the idea continued that the planets are responsible for calamities that lead men to sin,—a belief not yet extinct even in the most civilized quarters of the globe.

Hambrecht (P.) Das Meer in seiner Bedeutung für die Völkerverbreitung. (A. f. Anthrop., Brnschw., 1908, N. F. VII, 75-88, 4 maps.) Discusses the sea in relation to the dispersion of human races over the globe, currents, winds, etc., in particular. Few peoples have willingly set forth on the sea, and travel on the high seas has been developed only by some coast-folk, e. g., Phenicians, Northmen, Eskimo, Malays, Polynesians, Japanese. Australia and Africa (with few exceptions such as the Papet of Senegal and the Suaheli of M'rima) have no sea-faring peoples. In Indonesia and Polynesia the aborigines equal or exceed the Northmen of old. River-navigation does not necessarily lead to sea-faring; deltas and estuaries often hinder it. Ethnic pressure, love for conquest, overpopulation, etc., have stimulated sea-travel. Winds and currents have been powerful factors.

Hervé (G.) L'anthropologie de Voltaire. (R. de l'Éc. d'Anthr. de Paris, 1908, XVIII, 225-255.) Discussion of the anthropological ideas of Voltaire set forth chiefly in the *Dictionnaire Philosophique* and the *Philosophie de l'Histoire*, the *Singularités de la Nature*, etc. Voltaire was a somatic and linguistic polygenist; he also affirmed the existence of a "natural religion," which he termed *theism*. He had met aborigines of several regions of the globe, including the four American Indians from the Mississippi, whom he examined at Fontainebleau.

de Huelguero (F.) Dell' influenza del Gozzo sulle statistiche della statura. (A. d. Soc. Rom. di Antrop., 1908, XIV, 61-69.) On the basis of the statures of 3,861 recruits (for 1855-59) of the district of Aosta (av. 160.29 cm.), the author concludes that the morbidity is independent of stature, likewise the effect produced by the disturbing element. Morbidity (or diminution of development through the disturbing cause) may be a little greater for those of low stature.

Livi (R.) Sulla causa del destrismo e del mancinità. (Ibid., 91-94.) Dr L. concludes that the fundamental cause of the predisposition to righthandedness

and lefthandedness is "uterine position." This predisposition may however be counterbalanced by a number of minor causes, so that one born righthanded may become lefthanded and vice versa.

Making bread in different parts of the world. (Nat. Geogr. Mag., Wash., 1908, XIX, 165-178, 11 pl., 1 fig.) The illustrations (with descriptive notes) show cassava-making in West Indies, tortilla-making in Mexico and Central America, a bread "wallah" in India, bakery in Japan, grinding at the mill in Palestine, baking bread in Syria, Egyptian and Turkish bread, making Norwegian "flat bread," etc., modern American bread-making.

Mochi (A.) La discriminazione delle forme craniche e il sistema del Sergi. (A. p. l'Anthrop., Firenze, 1908, XXXVIII, 87-126, 2 figs.) Detailed discussion of the methods of distinguishing cranial forms, and the Sergi system in particular. According to M. the system of Sergi, while very efficacious for descriptive craniology and useful for recognizing and distinguishing cranial forms, all varieties are not comprehended under the 9 "types" established by him.

Papillault (G.) L'anthropologie est-elle une science unique? (R. de l'Éc. d'Anthr. de Paris, 1908, XVIII, 117-132, 1 fig.) Dr P. defines anthropology as "the science of human groups, leading to integral knowledge of their composition, their functioning and their needs by the help of all the technological unities having as objects the study of collective phenomena." There are somatic, sociologic, economic, and ethnologic anthropology, the last embracing very individualized technologies such as linguistics, religion, archeology, folk-lore.

Penck (A.) Das Alter des Menschengeschlechtes. (Z. f. Ethnol., Berlin, 1908, XI, 390-407, 3 figs.) Discusses the antiquity of the human race, particularly in reference to the glacial age, etc., in Europe, and in relation to various recent theories. Not till we know for certain that the colt-maker was man can we put back the race into millions of years, but must content ourselves with millenniums.

Primo Congresso della "Società Italiana per il Progresso delle Scienze." Sezione di Anthropologia. Parma. Settembre 1907. (A. d. Soc. Rom. di Antrop., 1908, XIV, 95-105.) Résumés papers by

- Sergi on a Linnean classification of human groups; Giuffrida-Ruggeri on the teaching of artistic anatomy; Majocchi on a case of *bipartite supercilii*; Livi on the influence of mediæval slavery on the anthropological characters of the Italians.
- Politische Geographie.** (Globus, Brunschwig, 1907, XCII, 94.) Résumés H. Gaidoz's article, "Introduction de l'ethnographie politique," in the *Revue Internationale de l'Enseignement* (Paris), 1907.
- Puccioni (N.)** Di alcune omologie fra le ossa dello scheletro cefalico e viscerale dell' uomo e dei cranioti inferiori. (A. p. l'Antrop., Firenze, 1908, XXXVIII, 37-85.) Treats, with bibliography of 161 titles, of homologies of the bones of the cephalic and visceral skeleton (occipital, sphenoid, temporal, parietal, frontal, ethmoid, lacrimal, nasal, maxillary, malar, and hyoid; visceral arches, sutures, fontanelles, fontanelle and wormian bones) in man and the higher vertebrates, resuming the present state of knowledge on the subject. The most complex of the cranial bones is the temporal, the series of whose points of ossification has not yet been clearly fixed. The parietal is generally given but one ossifying center, the frontal two principal ones; the ethmoid four, the lacrimal and nasal one each, the upper maxillary five, the malar one or more, the lower maxillary perhaps six, the hyoid five. The normal fontanelles in the human skull are 4, the theoretic ones numbering 22.
- Rademacher (L.)** Schelten und Fluchen. (A. f. Religsw., Lpzg., 1907, XI, 11-22.) Treats of the conjuration of the dead in the *Orestes* of Euripides, the meaning of the terms used, etc. As power over good spirits is gained by prayer, so the evil are won over by curses. Personal abuse gains the help of the dead.
- Rohrer (F.)** Eine neue Formel zur Bestimmung der Körperfülle. (Korr. Bl. d. D. Ges. f. Anthr., Braunschweig, 1908, XXXIX, 5-7.) For Livi's *index ponderalis* R. would substitute the formula $100 \cdot \frac{\text{weight of body}}{\text{height}^3}$.
- Schuster (E.)** The promise of youth and the performance of manhood, being a statistical inquiry into the question whether success in the examination for the B. A. degree at Oxford is followed by success in professional life. (Univ. of Lond., Eugenic Lab. Mem., Lond., No. III, 1907, 1-16.) Based on data in Crockford's *Clerical Directory* for the year 1899 and *Foster's Men at the Bar* (1885) and the records of Oxford. S. concludes that "success both at the Bar and in the church has a quiet well-marked causal relationship with success in the Oxford final schools, and it is probable that if a better measure of success in these professions had been available, this relationship would have been found to be still more intimate." Detailed tables are given, the lawyers involved numbering 634, the churchmen, 1,748.
- and **Elderton (E. M.)** The inheritance of ability, being a statistical study of the Oxford class lists and of the school lists of Eton and Charterhouse. (Ibid., Lond., 1907, No. 1, 1-42.) Based on data in *Foster's Alumni Oxonienses* (continued, *Oxford Men and their Colleges*), the *Harrow Register* and *Harrow Calendar* and the *Charterhouse Register*. The Oxford material gave a correlation between father and son of .312 and between brother and brother of .405; Eton and Charterhouse a correlation between brother and brother of .398. Detailed tables are given.
- Sergi (G.)** Sul limite posteriore del lobo parietale e sui solchi occipitali esterni nel cervello dell' uomo. (A. d. Soc. Rom. di Antrop., 1908, XIV, 75-89, 1 pl.) Résumés previous studies (Kohlbrugge, Zuckerkandl, Elliot Smith, Hall, etc.) and own investigations on the limits of separation between the parietal and occipital lobes on the brain-surface, the *Affenpalte*, etc., in man and the anthropoids.
- Sollas (W. J.)** Paleolithic races and their modern representatives. Part I. (Science Progress, Lond., 1908, III, 326-53, 6 figs.) Argues for the recognition in the Quaternary epoch of 4 glacial and 4 genial ages. Prof. S. holds that of the existence of man previous to the beginning of the great ice age "not a vestige of evidence, forcible enough to compel universal belief, has up to the present time been discovered." The *Pithecanthropus*, the flints of Thenay, Puy Coumy, Venang-yung (Burma), etc., are discussed.
- Strassmann (P.)** Die anthropologische Bedeutung der Mehrlinge. (Z. f. Ethnol., Berlin, 1908, XI, 362-382, 11 figs.) Treats of multiple-births from the anthropological point of view: Frequency (race, culture, ways of life, environment exert

no influence; multiple births rise and sink with increasing and decreasing birth rate, with the fertility of woman, heredity (frequent), relation to age of mother (more common in later years of married life), sex (with multiple births as with normal single births, more boys than girls are produced), weight and height (the average of the child of a multiple less than that of a single birth), mortality and prospect of life (single children more favored), etc. S. concludes that multiple births (twins, triplets, quadruplets, etc.) represent a reverse sort of reproduction becoming rarer and rarer, and the dangers to the mother accompanying such indicate a still further reduction of multiparity and the ultimate rule altogether of single births.

Vierkant (A.) Das Problem der Felszeichnungen und der Ursprung des Zeichnens. (A. f. Anthropol., Brnschw., 1908, N. F., VII, 110-118, 3 fgs.) Discusses the question of rock-drawings in relation to the origin of drawing, with particular reference to Koch's studies of the rock pictures and drawings of S. American Indians. V. notes the poverty of elemental forms, the inclination toward agglutination of geometric elemental forms, the growth of figures from "scribblings" through the processes of agglutination and "reading in," and the giving up of the original signification for a playing with the meaning, as the chief marks of this sort of primitive art. Drawing here originates in scribblings repetitive or imitative of striae made for practical purposes; the third stage was the drawing of significant figures, — only in the broadest sense was there at first in this stage an imitation of real objects. Gesture language may have contributed something. There is parallelism with the development of drawing in the child.

— Die Anfänge der Religion und Zauberei. (Globus, Brnschw., 1907, XCII, 21-25, 40-45, 61-65.) Treats of the beginnings of religion and "magic" (near, beginning, at distance). The psychological basis of "magic," lies in "the confusion of subjectivity and objectivity in both the practical and the theoretical field," — this confusion is a common human quality and not a mere isolated or peculiar phenomenon in the culture of the race. The mental life of the child offers many phenomena explanatory of the psychological mechanism of "magic." It is improbable that cul-

tus is older than "magic," and has an independent origin. The two oldest simple religious ideas are that embodied in the Iroquoian *orinda*, Siouan *wakanda*, etc., and the anthropomorphic or analogizing concept of nature. The third stage is animism, which is not at all, as some suppose, the most primitive religious idea. A pre-animistic period of religion, in spite of Wundt's argument to the contrary, has surely existed.

Virchow (H.) Ueber Einsetzen der Zähne nach Form. (Z. f. Ethnol., Berlin, 1908, XI, 254-257, 2 fgs.) Describes method of securing accurate placement of the teeth in skulls (after softening) by means of a mould, also the position of the lower to the upper jaw.

Volz (W.) Ueber das geologische Alter des Pithecanthropus erectus Dub. (Globus, Brnschw., 1907, XCII, 341-342.) Gives results of author's investigations in the Trinil region in 1906. Dr V. concludes that the strata with the remains of the *P. e.* are not earlier than the old diluvial, nor later than late diluvial, being therefore, probably middle-diluvial. The *P. e.* is a fossil anthropoid, "an unsuccessful attempt at man."

Waldayer (—) Ueber Gehirne menschlicher Zwillings- und Drillingsfrüchte verschiedenen Geschlechts. (Z. f. Ethnol., Berlin, 1908, XI, 262-272.) After references to previous investigations of sexual differences in human brains and in those of twins (Rüdinger, Passet, Karplus, etc.), Dr W. treats of the brains of fetal twins and triplets of different sexes (3 cases of twins; 3 cases of triplets, — 2 boys 1 girl, 2 girls 1 boy, 2 boys 1 girl). While the majority of the male brains show a greater development of the furrows and convolutions of the cerebral hemispheres, some do not, and Dr W. does not accept Rüdinger's "law" to that effect, holding with Karplus and Retzius that much more extensive and varied material (racial especially) is necessary (to say nothing of the question of individual variations) before a dogmatic position can be taken. Dr W. desires anatomical material of the kind in question.

Wilde (S.) Chthonische und himmlische Götter. (A. f. Religsw., Leipzig, 1907, x, 257-268.) Treats of chthonic (earth) deities and their transformation into celestial ones, particularly among the peoples of the ancient world, a metamorphosis less known than the reverse

process. Chthonic deities are subterranean deities, but they are found also in the air (e. g. some of the wind-gods). The example of Hera as a chthonic deity passing over into a celestial one is discussed with some detail. Another instance is that of the Dioscuri. Under the influence of the Olympic religion a strong effort was made to raise the position of other chthonic deities as well; some of them spend part of their time above and part below. Wodan was originally an earth-god and a god of the dead made celestial under the influences of the Viking age.

Wintenberg (W. J.) Myths and fancies of the Milky Way. (J. Roy. Astron. Soc. Can., Toronto, 1908, 235-247.) Cites myth, legend, folk-lore and poetic ideas from all ages and peoples. The Milky Way is "mother of stars," stardust (Peruvian); the belt of God (Lett); the lovers' bridge (Finnish); the crooked serpent (Hebrew); the long blue cloud-eating shark (Polynesian); bridge of Asgard (Norse); the path of God, of heroes, of spirits, etc. (with many widely scattered peoples); the way of birds (Finnish), the dog's trail (Kootenay and Cherokees); the wolf road (Blackfeet), the snake's path (N. India); the path of Noah's ark (Panjabi), the pilgrims' path (Turkish), the way to Rome (medieval European), way of St James (European); Watling Street (early English), Winter Street (Swedish), and the street or path of divers saints, gods, heroes, etc., in European religions and mythologies; river of heaven, river of light, white river, etc., the heavenly Ganges (Hindu); the straw road (Arabic, etc.); the trail of the swimming turtle, the buffalo and horse racing, the snowshoes of the creator, the road where the spirits hunt ostriches, etc. The term "Milky way" is ancient and widespread. Another curious belief is found in Theophrastus and Diodorus Siculus, viz. that "it was the junction between the two hemispheres, which together formed the vault of heaven: and it was so badly made that it let through some of the light supposed to exist everywhere behind the solid sky." The appellations of the "Milky Way" serve admirably to illustrate both the differences and the resemblances of thought among the races of man.

Zanolli (V.) Studio sulla oblitterazione delle suture craniche. (A. d. Soc. Rom.

di Anthropol., 1908, XIV, 13-44.) Résumés previous studies and gives details of own investigation of 25 male and 25 female Bolognese and 14 male and 6 female Paduan skulls in the Anatomical Laboratory of the University of Padua, with respect to obliteration of sutures. Dr Z. concludes that the sutural course is not as regular or as constant as certain authors hold; synostotic concomitants are very frequent; suturation is relatively precocious (at about 25 years) in man and late (at 30) in woman; the rhythm of the course of obliteration is more regular in woman; asymmetries of obliteration are frequent, but there is no relation between these and normal plagiocephaly.

EUROPE

Andree (R.) Jüdische Museen. (Globus, Brunschwig, 1907, XCII, 107-108.) Based on Dr S. Weissenberg's article in the *Mitteilungen zur jüdischen Volkskunde*, Heft 28, treating of Jewish antiquities and other objects in German Museum. The historical and cultural value of Jewish Museums is emphasized, i. e., of museums setting forth the cultural development and historical evolution of the Jews in Germany.

Baudouin (M.) La croix blanche des fermes du bocage vendéen B. Soc. d'Anthr. de Paris, 1908, v^e s., IX, 42-77, 5 figs. Treats in detail of the white cross painted on farm-houses in the wooded region of the Vendée,—in the plain and marshy country it is now rare,—its distribution, signification, variation in form, comparison with similar symbols elsewhere, etc. Dr B. believes this cross, now interpreted by the peasants as the Christian sign of the cross for protection against the devil, to be the Christianization of a prehistoric cult (all the intermediary stages between the typical prehistoric sculptures and the purest form of the cross are found), the intent being the same to-day as of yore, to protect agriculture against evil spirits. The white cross is confined to farm-houses, etc.

— Fouille et restauration de l'allée couverte de Querellio à Saint-Mayeux, Côtes-du-Nord. (Ibid., 78-79.) Note on the restoration since 1906 of the megalithic monument of St Mayeux belonging to the close of the neolithic period.

Breuil (H.), Peyrony (D.) et Bourinnet (J.) Concrétions avec contre-empreinte

des gravures de Teyjat. (Ibid., 6-8.) Brief account of stalagmitic concretions bearing imprints of cave-pictures (horse, etc.) from the prehistoric grotto of Teyjat, and of some retouched and replaced pieces of rock with engravings upon them (two human occupations are thus indicated and the antiquity of the earlier pictures proved beyond doubt). In the discussion M. Baudouin called attention to the fact that the pictured horse of the caves seems identical with the modern horse of the Ile d'Yeu, which by reason of environment, etc., seems to have reverted to the primitive type.

Capitan (L.), Breuil (H.), Bourrinet (J.) et Peyrony (D.). La grotte de la Mairie à Teyjat, Dordogne. Fouilles d'un gisement Magdalénien. (R. de l'Éc. d'Anth. de Paris, 1908, XVIII, 153-173, 13 figs.) First part of a description of the Mairie grotto at Teyjat in the Dordogne, the contents of a Magdalénian stratum, etc. History, stratigraphy, fauna and flora, implements, etc., of stone, horn, ivory, bone, art-objects (conventional signs, animal figures, etc., on implements; heads of horses, figure of bison on stalagmitic fragment, figures of horses, etc.), ornaments (portion of *Pecten* shell pierced for suspension).

Coffin (M. C.) Where East meets West; a visit to picturesque Dalmatia, Montenegro, and Herzegovina. (Nat. Geogr. Mag., Wash., 1908, XIX, 309-344, 24 pl., 3 figs.) Notes on cities, costume, the lake of Scodra (Albanians, bazaar, medieval dress), Bosnian peasants, etc. Illustrations of ethnologic interest.

von Domaszewski (A.) Die Festcyclen des römischen Kalenders. (A. f. Religsw., Leipzig, 1907, X, 333-344.) Treats of the festival-cycles of the ancient Roman calendar,—around some one chief festival in each month were grouped the minor ones, all standing in certain relations to one another. The chief festival of August was the *Volsunalia* on the 23d, introduced by the *Consualia* of the 21st and ending with the *Opiconivia* of the 25th. There were also the *Portunalia* of the 17th, the *Vinalia* of the 19th, and the *Volturnalia* of the 27th. The whole festival cycle was ruled by Vulcanus. The cycle of December was ruled by the deity of the germinating seed. March and April are dominated by generation, and the moving of life; and so on with others.

The cycle of Roman festivals begins in December with the adoration of the power that renews life in the death of winter, passes life at its height in June, and in October with an attempt to ensure the well-being of the year to come.

Eichhorn (G.) Depotfund im Münchenrodaer Grund bei Jena. (Z. f. Ethnol., Berlin, 1908, XI, 194-200, 25 figs.) Describes find of bronze objects (sword, celt, armlet, bosses, rings, spirals, etc.) made in 1885 at Münchenroda near Jena, and now in the Germanic museum of the University.

Feilberg (H. F.) The corpse-door: a Danish survival. (Folk-Lore, Lond., 1907, XVIII, 364-375, 1 pl.) Treats of the custom (and its analogies elsewhere) formerly widespread in Denmark of having a door through which the corpse was carried out and which was afterward bricked up. Digging under the threshold, making a hole in the wall, etc., are some of the related practices intended to avoid carrying the dead through the usual entrance to the house in the hope of preventing the return of the ghost.

Fisher (E.) Ueber den Ursprung der rumänischen Bojarenfamilien. (Z. f. Ethnol., Berlin, 1908, XI, 343-361.) Treats particularly of the old Rumanian Bojar families, who are of Slavonic origin, those of Greek, German, Magyar descent being also briefly considered.

— Die Haar- und Kleidertracht vorgeschichtlicher Karpathen- und Balkanvölkern. (A. f. Anthr., Brnschw., 1908, N. F., VII, 1-15, 2 pl., 11 figs.) Treats of the hair-dress and clothing of the prehistoric peoples of the Carpathian and Balkan countries. According to F. the modern Balkan peoples have preserved in their essential features the hair-dress and costume of their Thracian ancestors of Butmir, Jablanica, Adamklessi and Cucuteni, a further proof of the identity of these peoples with the prehistoric "Thracians," already demonstrated for certain aspects of architecture, art, music, custom, belief, etc.

Furtwängler (A.) Zwei griechische Terrakotten. (A. f. Religsw., Leipzig, 1907, X, 321-332, 2 pl.) Treats of two ancient Greek terracotta statuettes, one of them an old Ionic imitation or remodeling of the Egyptian idol of the embryo or infant type (Ptah-Sokaris, the Memphian god of the dead) the other an Attic representation of Silenus with an infant in his arms.

- van Gennep (A.)** Ein eigentümlicher Wettermantel als Zeuge alter kulturellen Beziehungen. (Globus Brnschw., 1907, XCII, 150-152, 3 figs.) Discusses the Portuguese and Provençal rain-mantle of straw and similar objects in Japan, China, the Philippines, the Pacific coast of Mexico, etc. V. G. raises the question whether the spread of this mantle is not due to the Portuguese. Another view brings it originally from China.
- Giuffrida-Ruggeri (V.)** Contributo all' antropologia fisica delle regioni dinariche e danubiane e dell' Asia anteriore. (A. p. l'Anthrop., Firenze, 1908, XXXVIII, 127-180, 1 pl., 2 figs.) Treats of ancient and modern (Gothic, Croatian, Slavonian, Veneto-Illyrian, Dalmatian, Montenegro, Albanian, Bosnian-Herzegovinian, Rumanian, Armenian, Maronite, Kurd, etc.) skulls from the Dinaric and Danubian regions and from Asia Minor (measurements of 60 Armenian, etc., skulls are given). The conclusions reached are: Ripley's identification of the Veneto-Illyrians with the Alpine type is incorrect; — the Illyrians were dolicho-mesopcephals; the modern Greek and Balkan peoples are less brachycephalic than is generally supposed; Asia never sent brachycephals into the Danubian plain and the latter has never been the center of brachycephaly imagined by De Michelis, etc.; hypsiconchia, a character supposed to be peculiar to Asiatic skulls, no longer occurs in adjacent Rumania, a fact not favorable to the theory of brachycephalic transit from Asia to Europe. Pages 176-180 are taken up by an argument of Prof. C. Sergiev that the Croats are wrongly considered Slavs, being really Avars.
- v. Hahn (—)** Nomina geographica Caucasica (Globus, Brnschw., 1907, XCII, 127-130, 140-143). Discusses numerous geographical names of the Caucasus, their etymology, meanings, etc. These names represent ethnic and tribal history, migrations, intermixture (Kwemo-Schawalit, e. g., is Grusinian-Tatar; besides the Caucasian peoples themselves, Armenian, Persian, Turkish, Hebrew, Greek, Latin and Italian influences are present); climate and natural conditions, the fauna and flora, the mineral realm, industries and occupations (also physical and moral characters of localities, — *blason populaire*), religion and older heathenism, legends, etc. Some of names of mountains and rivers are very interesting. Mt Elbruz has at least 10 names. To the Ossetes it is known as Taeristitub, or "Christ Mountain," from the folk-belief that Christ once lived in one of its caves.
- Henkel (L.)** Die Gegend von Kösen. (Ibid., 293-296, 2 figs.) Contains some notes on the presence of man from the later stone age down, archeological remains, etc.
- Hertzog (A.)** Schaustücke und Sammlungen in alten Strassburg. (Korr.-Bl. d. D. Ges. f. Anthr. Brnschw., 1908, XXXIX, 1-5.) Notes on show objects, collections, etc., in old Strassburg; the "unicorn's horn" (first mentioned in a MS. of 1380), the "Kunstkammer" of the 16th century and other later collections of all sorts of relics, rarities, art-objects, etc.
- Herzog (R.)** Aus dem Asklepieon von Kos. (A. f. Religsw., Leipzig, 1907, x, 201-228, 400-415, 1 pl.) Treats of the discovery of the Asklepieon at Kos, the serpent-offering (the fourth *minus* of Herondas, the Koan temples, offerings to openings in the earth, Charon and Cerberus, serpent and dog), the worship of Demeter at Kos, etc.
- Hollack (E.)** Die Grabformen ostpreussischer Gräberfelder. (Z. f. Ethnol., Berlin, 1908, XL, 145-193.) Treats of the various forms of graves in East Prussia, — La Tène, the so-called Roman and post-Roman graves of the Masurian region and south Ermland, the graves of the central belt of the province, the graves of Samland. The graves of Samland indicate for the post-Christian centuries a constant specific Prussian population. The stone-protected graves of Samland and the region south of the Pregel are to be attributed to a Prusso-Lettish population. In Samland the graves yield evidences of 4 cultures: Early Roman with inhumation (corresponding to La Tène of the S. W. of the Province); full Roman culture with cremation; post-Roman with cremation; so-called "late-heathen."
- Jaeger (J.)** Das Gasteiner Tal. (Globus, Brnschw., 1907, XCI, 373-378.) Contains some notes on the human occupants of Gastein valley, — Taurisci, Romans, Slavs, etc., the warm springs, etc.
- Kaindl (R. F.)** Zur Volkskunde der Rumänen in der Bukowina. (Ibid., 283-289.) Treats of folk-lore of the Bukovinian Rumanians. Cattle-charming, tree-sacrifice in house-building (vilage of Zurin), procedure to keep evil

- and unclean things away from the house,omens of divers sorts, festivals and holidays, love-charms and marriage-oracles (with some detail), mother and child, devil born of an egg, moon-lore, cosmogonic and origin myths (horses, Jews, a brook, diamonds, etc.), legends (heraldic, place-names). In Rumanian "magic" figures "a dragon with golden scales and wings, with 99 heads, 99 eyes, 99 tongues and 99 feet." The first horses were two devils who lost their horns and were put to the plough by Adam.
- Kauffmann (F.)** Altgermanische Religion. (A. f. Religsw., Lpzg., 1907, xi, 105-126). Résumés and critiques of recent literature on old Teutonic religion: J. v. Negelein's *Germanische Mythologie* (Leipzig, 1906), E. Mogk's *Germanische Mythologie* (Leipzig, 1906), P. Herrmann's *Deutsche Mythologie* (2 Aufl., Leipzig, 1908), H. Schück's *Studien nordisk Litteratur-och Religionshistoria* (2 v., Stockholm, 1904), K. Krohn's *Baldermythus* (Helsingfors, 1906), H. Brunner's *Deutsche Rechtsgeschichte* (Bd. I., Leipzig, 1906), and many articles in periodicals.
- von Komorowicz (M.)** Ein Ritt durch Island. (Globus, Brnschw., 1907, xcii, 373-377.) Notes from journey in 1907 on bird-hunting, etc.
- Laville (A.)** Présentation d'une râpe angulaire néolithique. (B. Soc. d'Anthr., de Paris, 1908, v^e s., ix, 22-26.) Discusses an angular neolithic rasper or grater (for use on wood, etc.) found in the Dunois in 1907. With such implements wood could be cut easily.
- M. (L.)** La couleur des cheveux et des yeux en Écosse. (R. del'Éc.d'Anthr., de Paris, 1908, xviii, 276-280.) Résumés monograph of Gray and Tocher in *J. R. Anthr. Inst. Vol. XXXVII* on the color of hair and eyes in Scotland.
- Les cheveux roux. (Ibid., 280-281.) Résumés article of Prof. E. Dubois on redhairedness, etc., in *Man* for June, 1908.
- Mehlis (C.)** Diluviale Funde von Neustadt an der Haardt. (A. f. Anthrop., Brnschw., 1908, n. s., vii, 72-74, 3 fgs.) Brief account of diluvial bones of animals from Neustadt on the Haardt, discovered in 1901. Among these are pieces of reindeer bone and horn with incisions and other marks of human origin. These are probably the oldest relics of diluvial man in the Rhine country.
- Moriz von Déchys** Forschungen im Kaukasus. (Globus, Brnschw., 1907, xcii, 296-301, 7 fgs.) Résumé and review of Moriz von Déchy's *Kaukasus, Reisen und Forschungen im kaukasischen Hochgebirg* (3 Bde, Berlin, 1905-1907). V. Déchy visited the Lesghian Kurinians, who number about 130,000. The mosque of Ichrek is said to date from 1029 A.D.
- de Mortillet (A.)** Les pierres à fusil, leur fabrication en Loir-et-Cher. (R. del'Éc. d'Anthr. de Paris, 1908, xviii, 262-266, 6 fgs.) Brief account of the manufacture (now for export) of gun-flints at St. Aignan, in the department of Loir-et-Cher. There were 37 different types made at different prices per thousand in 1865, at present only 13.
- Mühlhofer (F.)** Ueber knochenführende Diluvialschichten des Triester Karstes und Karstentwaldung. (Globus, Brnschw., 1907, xcii, 109-111, 3 fgs.) Treats of the bone-bearing strata, the paleolithic and neolithic artefacts of the "Red field" cave in the Karst of Trieste, etc. Two ice-periods, an interglacial and a post-glacial are distinguished. Evidence of man's presence is met with in the first interglacial. The deforestation of much of the Karst may have been due to the Romans.
- Neger (F. W.)** Im Reich der Pinsappanne und der Korkeiche. (Ibid., 309-314, 5 fgs.) Describes the region of the pinsappir and the cork-oak in Andalusia and the utilization of these trees.
- Osthoff (H.)** Etymologische Beiträge zur Mythologie und Religionsgeschichte. (A. f. Religsw., Lpzg., 1907, xi, 44-74.) Discusses the etymology and significance of *Iris*, the Greek name of the messenger of the gods, the terms for "rainbow," "sun drawing water," "Milky Way," etc., in the various Indo-European tongues, particularly Greek and Latin. According to O., the goddess *Iris* was the path-walker, *viatrix*, the carrier of messages from gods to gods, between sky and earth, from one end of the world to the other. Later on, through folk-etymology, she was identified with the rainbow.
- Patiri (G.)** Le mura e le costruzioni ciclopiche della contrada Cortevicchia, in Termine Imerese. (A. p. l'Anthr., Firenze, 1908, xxxviii, 17-22, 1 pl.) Treats briefly of walls and other cyclopean structures in the Cortevicchia region, Termine Imerese, including a

small dolmen and the cyclopean wall inside the Cave of the Dragon.

Pekokultus (Der) bei den Setukesen. (Globus, Brnschw., 1907, XCII, 191.) Based on M. J. Eisen's article in the *Finnisch-Ugrische Forschungen* for 1906. Peko is the deity of agriculture and cattle-breeding and his cult is more extensive among the Setukeses than among the Karelians.

Perko (G. A.) Aus der Unterwelt des Karstes. (Ibid., 359-365, 377-383, 4 figs.) Treats of the caves of Bresovizza, Slivno and Nabresina, — those of the last two regions contain animal remains and human artefacts, etc. The Moser cave yielded a human skeleton with grave-gifts, flints, weapons of bone, etc. The man of these caves was a nomadic hunter, changing later on to sedentary life (pastoral and fishing), with culture like that elsewhere in Europe of the period.

Pittard (E.) Ossements utilisés (diaphyses) de la période moustérienne, station des Rebères, Ourbières, Dordogne. (R. de l'Éc. d'Anthr. de Paris, 1908, XVIII, 255-261, 5 figs.) Treats of certain animal bones bearing marks of use, cuts, etc., of human origin from the Mousterian period at the "station" of Rebères in the Dordogne. The purpose for which they were employed is not clear.

Reche (O.) Zur Anthropologie der jüngeren Steinzeit in Schlesien und Böhmen. (A. f. Anthrop., Brnschw., 1908, N. F., VII, 220-231, 1 pl., 5 figs.) Treats of anthropological types in the later stone age in Silesia and Bohemia, — in the "Schnurkeramik" and the "Bandkeramik" periods and the transitional epoch. Some 90 skulls and skeletons were studied (detailed measurements) and two distinct types, one meso-brachycephalic, the other dolicho-hyperdolichocephalic, the second being identical with the North European or Nordic race. In the course of the stone age a change in race took place, the type of the North European race (bringing with it the "Schnurkeramik") suppressed the other type (brachycephalic), and married the women of the stock, producing thus a mixed race. The second type appears to have had no culture-creative rôle, the Nordic type being the carriers of both cultures, "Schnur" and "Bandkeramik."

Samter (E.) Der Ursprung des Laren-

kultus. (A. f. Religsw., Leipzig, x, 368-392.) Discusses the origin of the Roman cult of the *Lares*, the theories of Wissowa in particular. The terms *compitum* and *Lares* the considered; also the doll-offerings, dress, participation of slaves in the *compitalia*, etc. Against Wissowa's contention, that the *Lares* are protective deities of the soil, S. holds that they represent the cult of ancestors and souls.

Schmidt (R. R.) Die neuen paläolithischen Kulturstätten der Schwäbischen Alb. (A. f. Anthrop., Brnschw., 1908, N. F. VII, 62-71, 31 figs.) Treats briefly of the new paleolithic "stations" in Swabia, discussed in detail in Prof. E. Koken and Dr R. R. Schmidt's recent work *Die diluvialen Kulturstätten Deutschlands*. Very important is the Sirgenstein cave in the valley of the Ach, where the Mousterian, Aurignacian, Solutrean, Magdalenian are all represented. The Hohlefels cave near Hütten exhibits a later Magdalenian epoch. The paleoliths of the Swabian Alb represent the same stages as those to the East and West. With the appearance of the last glacial period man began to spread over south Germany, the highlands of that region being then for the first time inhabited.

Schnippel (E.) Die oberländische Haube, genannt "das Mützchen." (Globus, Brnschw., 1907, 238-240, 1 fig.) Describes the cap called Mützchen used in the Prussian Oberland within a generation, and the dress corresponding. Similar caps were formerly known in parts of Magdeburg, Thuringia, and the modern nurse's cap resembles the Mützchen much. Its origin is possibly due to the old Dutch settlements in this region.

Seidel (H.) Bemerkungen zu den neueren Karten des Hohen Tatra. (Ibid., 152-154.) Contains some notes on place-names, etc., in the Tatra region of the Carpathians.

Seidlitz (N.) Kaukasische Sprichwörter und Redeweisen. (Ibid., 143-145.) German versions (translated from the Tiflis Calendar for 1907) of 150 Tatar, 53 Armenian, 32 Georgian, 16 Lesghian, 13 Avar, 21 Kasikumak, 10 Akusha, 4 Daghestan, 3 Tchetchenian and 1 Circassian proverbs and folk-sayings including a number of riddles. Characteristic are the following: While the wise man is thinking of getting married, the fool has a son born to him

(Tatar); the world is a fat sheep's-tail, man a knife (Armenian); the guest is gold in the morning, silver in the evening, and two days later iron (Georgian); who never saw hell will not be suited with paradise (Lesghian); love the shepherd, love his dog (Avar); of what use is a fair woman to a blind man? (Kasikumuk); who sleeps in spring-time weeps in winter (Akusha).

Slebourg (M.) Neue Goldblättchen mit griechischen Aufschriften. (A. f. Religsw., Leipzig, 1907, x, 393-399.) Describes 3 gold taelas with Greek inscriptions (2 from Jerusalem, 1 from Rome). The inscription on one is interesting by reason of the "Abba, Father" (cf. Mark xiv, 36).

Sittoni (G.) Le cinque terre: III. I Biassio-Campioti. Le doti naturali. (A. p. l'Antrop., Firenze, 1908, xxxviii, 23-35, 1 pl.) Treats of the natural gifts and mental characteristics of the people of the region of Biassa, customs and habits, dress, ornament, etc. One marked trait is continuous litigation; theft and dissimulation are others. Knowledge is chiefly tenacious tradition.

Tetzer (F.) Die istrischen Slawen. (Globus, Brnschw., 1907, xcii, 85-89.) Treats of the Slavs of Istria (Slovenians and Istrians Serbo-Croatians), their habitat, physical characters, activities and occupations, festivals and ceremonies, dress and ornament, marriage-customs (with some detail), funerals, folk-song, etc.

Vauville (D.) Instruments en forme de scie du gisement quaternaire de Cœuvres, Aisne. (B. Soc. d'Anthr. de Paris, 1908, v^e s., ix, 29-30.) Describes saw-shape implements from the quaternary site of Cœuvres in the department of Aisne; in all 167 specimens were found, belonging probably to the close of the Achulean epoch.

Wagner (M. L.) Sulcis und Iglesias. Ein Reisebild aus Sardinien. (Globus, Brnschw., 1907, xcii, 4-11, 9 figs.) Account of visit in the spring of 1905 to the Sulcis and Iglesias region of southwestern Sardinia. The ruins of Nora (according to Pausanias, the oldest city of the island), the villages of Domus de Maria, Teulada (with its ethnically isolated "Maureddus," of Moorish lineage), Carloforte (with a large Genoese element), tunny-fishing, the cave of Domusnovas and the *nuraghe*, at the same place, are described.

AFRICA

Avelot (R.) Le ouri. Un jeu africain à combinaisons mathématiques. (B. Soc. d'Anthr. de Paris, 1908, v^e s., ix, 9-22.) Treats in detail of *ouri*, an African game with mathematical combinations, the nature and distribution in Africa (map) of the three species of dish-games, *tshela*, *tab*, *ouri*, their migration, etc. The game of *ouri* is African, having had its origin among some Hamitic people in the neighborhood of Ethiopia and having spread in four directions,—by way of the Fulas to the north Sahara, Senegambia and Guinea to the Gaboon; by way of Nubian slave-traders down the Nile; through the Jaggas to Angola; by some Negro-Hamitic tribe south to Manica. The so-called cup-stones have nothing to do with the game.

Bieber (F. J.) Das Recht der Kaffitcho. (Globus, Brnschw., 1907, xcii, 365-367.) Treats of law and legal ideas and institutions among the Kaffitcho, a Hamitic people of the Abyssinian highlands,—judges, formulae, courts, ordeals, inheritance laws, marriage, crimes and punishments, appeals to emperor, etc. Many aboriginal (non-Abyssinian) ideas have developed in Kaffitcho law.

Brusaux (E.) Notes sur la race Baya. (B. Soc. d'Anthr. de Paris, 1908, v^e s., ix, 80-102, 1 pl.) Treats of habitat, climate, physical type and general culture (mountaineers, hunters, northern type still savage, southern influenced by Fulas and Haussas with Sudanese culture and Mahometanism; no system of writing), tattooing and mutilation, dress and ornament (head-dress complicated), family and domestic life, religion and superstition (in transition from heathenism to Mahometanism), houses, furniture, implements, villages, plantations, domestic animals (sheep, goats, dogs, fowl), food (manioc chief basis), hunting and fishing (poor fishermen, good hunters), industries (iron; pottery by women; basketry, etc.), dance and music, weapons, political organization (unit is circle headed by family chief), etc. Among the Bayas exists the institution of the Labbis, a sort of embryo university, in every large village.

Dar Homr. (Globus, Brnschw., 1907, xcii, 15-16.) Notes on Dar Homr (s.w. Kordofan) and its people. Based on Capt. W. Lloyd's account of his visit (1904-1906) in the *Geographical Journal* for June 1907.

Goldstein (F.) Thesaurierungspolitik der Saharabevölkerung. (Ibid., 379-384.) Treats of the camel in the economic life, etc., of the peoples of the Sahara (Tuareg) as compared with cattle in that of the Negro tribes. The camel is the "ship-of-the-desert," food (rare), bride-price, property and cause of raids, the highest gift, the measure of wealth, the theme of proverb, song, etc.

— Die Saharastädte Rhat und Agades. (Ibid., 171-175, 186-188.) Describes Rhat, a marabout town in the Tuareg Sahara and Agades the capital of the Tuareg tribe of Air or Asben (once credited with over 50,000 inhabitants, now perhaps 4,000), their people, industries, etc.

Gutmann (—) Die Frau bei den Wadschagga. (Ibid., 1-4, 29-32, 49-51.) Details concerning women, their life, activities, etc., among the Wadschagga, a primitive negro people of East Africa. Birth and treatment of girls, games, courting, marriage and domestic life, polygamy and inter-conjugal jealousy, divorce, bride-purchase, legal standing of women, position in religion (higher than socially; several sorts of shamans, "witches," etc.), women in trade and market-life (the market is the center of activity), men's opinion of women, etc.

— Wahrsagen und Traumdeuten bei den Wadschagga. (Ibid., 166-167.) Treats of the shaman ("prophet" "magician") and the varieties of his *modi operandi*,—water-seeing, earth-knocking, tobacco-shaking, pebble-counting, dreaming (some details), etc. The efforts of the *vaanga vullafya* or soothsayers are directed toward knowing the spirits and their wishes. Genius in soothsaying skips a generation according to the Wadschagga.

In the valley of the Niger. (Nat. Geogr. Mag., Wash., 1908, XIX, 164, 2 pl., 1 fig.) Illustrations of ethnologic interest (granary, burnt clay walls of hut with animal figures, etc., native types), furnished by "La Société d'Études Coloniales de Belgique."

Karutz (R.) Tätuiermuster aus Tunis. (A. f. Anthropol., Brnschw., 1908, N. F., VII, 51-61, 38 figs.) Treats of tattoo-patterns from Tunis, particularly those of a tattooing-book obtained by the author in 1906 in Kairouan, with account of the process of tattooing and notes on the various figures. K. believes that tattooing is basically an ornamental art, all re-

ligious, social and personal elements having been secondary, but in itself is not of esthetic origin. Tattooing goes back to the treatment of wounds and scars by rubbing in soot, ashes, drawing thread through the opening made by a needle, etc.,—cf. the medical "hair-rope." Out of this came rubbing color-substances and finally the process of tattooing as we have it.

— Nach den Höhlenstädten Süd-tunisiens. (Globus, Brnschw., 1907, XCII, 117-123, 133-140, 201-205, 215-218, 229-236, 50 figs.) Describes visit in 1906 to the "cave-cities," etc., of Southern Tunis,—Bon Amran, Matmata, Médenine, Douirat, Chenini, Gernersa,—architecture, implements, furniture, character of cave-dwellings, origin, notes on the people (mostly Berber in the midst of Araboid nomads), their family-life, customs, industries, etc., with some account of the surrounding population. Some of these caves are quite modern and due to their present possessors. The explanation of their use ("they are cool in summer and warm in winter") given by the troglodytes of Toujane, indicates a climatic reason for their existence. The natural caves have often been abandoned for artificial ones possessing greater advantages. Their form does not justify the refuge or defense theory.

Klose (H.) Die Behandlung Eingeborener im Hinblick auf unser Kolonisationswerk. (Ibid., 316-320.) Discusses the treatment of African aborigines in relation to German colonization, the use of native troops, police, etc. Justice, respect for native sanctuaries, knowledge of political and social conditions, tact, industrial and economic education are necessary.

Koch (R.) Anthropologische Beobachtungen gelegentlich einer Expedition an den Viktoria-Nyanza (Z. f. Ethnol., Berlin, 1908, XI, 449-470, 1 pl., 18 figs.) Gives the results of observations made during a stay of a year and a half on the Victoria Nyanza, chiefly in the Sesse islands at the N.W. corner of the lake, among Bantu peoples. Physical characters, food (meat not despised; banana chief source of food; several insects eaten), houses, boats (one type exceedingly primitive), clothing (bark, cotton), forms of greeting for men and women, diseases (no cry or lamentation by the sick), and their treatment, rock paintings and drawings, narcotics, etc.

The paintings are in red. The Sesse natives have trypanosomes long before they exhibit symptoms of the sleeping sickness.

Krauss (H.) Tierfang bei den Waaramo. (Globus, Brnshwg., 1907, XCII, 338-339, 9 figs.) Brief account of methods of trapping and capturing birds and animals among the Waaramo negroes of East Africa, lime-twigs, snares, nets, fall-traps, pits, etc. Monkeys are hunted by aid of a dog from whose neck is hung a bell.

— Spielzeug der Sunhelikinder. (Ibid., 357-359, 8 figs.) Treats of children's playthings among the Sunheli of E. Africa (parental love is great), mostly imitations or miniatures of instruments, implements, etc., with which the adults have to do, — drums, boats, traps, scare-crows and noise-makers, musical instruments, dolls, etc.

— Lufambo. (Ibid., 221-222, 9 figs.) Describes and figures 9 varieties of the string-game *lufambo* from the Wakami of German East Africa.

Kürchhoff (D.) Masse und Gewichte in Afrika. (Z. f. Ethnol., Berlin, 1908, XI, 289-342.) Detailed account of weights and measures in Africa civilized and uncivilized, heathen, Mahometan and Christian. The units, multiples, correspondences, etc., are discussed; Asiatic and European influences noted. Weights are of gold, lead, iron, copper; the distribution of the use of scales is indicated, native and foreign. The native names for weights and measures in many tongues are listed. Among the Wolof the metric terms (introduced by the French), — *metar*, *santimetar*, etc., are now known.

Land (Das) zwischen Kanem und Borku nach Kap. Mangin. (Globus, Brnshwg., 1907, XCII, 11-12.) Contains a few notes on the native population, Teda (of Tibbu stock) of Borku and Dasa (also Tibbu) of Shittati. The Teda rank women high and are mostly monogamous. Based on Capt. Mangin's recent researches.

Marquardsen (Hptm.) Beobachtungen über die Heiden in nördlichem Adamaua. (Ibid., 197-201, 3 figs., map.) Notes on the pre-Mohammedan population of northern Adamaua (the Islamic Fulla began their invasion in the beginning of the 19th century), occupying the mountain regions, etc., — Batta tribes, Falli, Mundang, Margi, Gamergu, Musgu, etc.

The map shows the distribution of heathen and Islamised peoples. The change of this heathen population can be made but gradually; their industry insures a good future for them.

de Morgan (H.) Notes sur les stations quaternaires et sur l'âge du cuivre en Egypte. (R. de l'Éc. d'Anth. de Paris, 1908, XVIII, 133-149, 19 figs.) Treats of the "stations" in the region of Esneh and the implements of palcolithic type (quaternary) in that part of Egypt, the paleolithic culture, passing from Assuan to the Delta with 3 types of burial, cist graves, knee-elbow inhumation, graves with burnt offerings, grave pottery, etc. Also copper objects (hatchet, chisel, etc.) from the kitchen-middens of Adimieh. de M. believes that in Egypt the bronze age has been preceded by a copper age. The axe of Adimieh has been copied from one of stone. Certain engraved stone cylinders belong to the same period, comparable with others from Thebes, Negadah, etc. The finds at Adimieh and Esneh are of great importance.

Neuere Erfolge ägyptischer Ausgrabungen. (Globus, Brnshwg., 1907, XCII, 314-315.) Based on an article in *Nature* (London), vol. 76.

Raum (J.) Blut- und Speichelbünde bei den Wadschagga. (A. f. Religsw., Leipzig, 1907, X, 269-294.) Treats of blood and spittle covenants among the Wajagga, a mountain people of the Kilimandjaro region. The more important "blood covenant" is described in detail; the spittle-covenant is performed by the two parties alone, as the other, now more ceremonially developed, once was also. Private individuals need the consent of the chief for these covenants, which are now in use as public ceremonies only for the forming of political alliances, peace-treaties, etc.

Sergi (G.) Sulla morfologia del cervello degli Herero. (A. d. Soc. Rom. di Antrop., 1908, XIV, 71-74, 2 figs.) Résumés investigations of 11 male and 3 female brains of the Herero (Bantu) of South Africa. The Herero brain differs from the European in the predominance of simple forms of the posterior termination of the fissure of Silvius, greater division of the superior and inferior frontal sulci, greater frequency of the first variety (Cunningham) of the intraparietal system, etc. The details will be published in S.'s forthcoming monograph *Cerebra Heretica*.

Smend (*Oblent.*) Eine Reise durch die Nordoststecke von Togo. (Globus, Brnschw., 1907, XCII, 245-250, 265-269, 26 figs.) Account of journey in January, 1905, through the N. W. corner of Togoland, with notes on the native tribes (Káhare who speak a Tim dialect, — tattooing, salt ovens, markets, mud-houses, social organization; Loaso, originally a mountain-people; Difale, also Tim linguistically, — dances, funerals, etc.; Saola, — special tattooing, and separate language, platform-huts; Tamberna, — good-natured) etc.

— Herstellung von Messingperlen bei den Ewhe. (*Ibid.*, 315-316, 7 figs.) Brief account of the manufacture of four sorts of brass beads by the Ewe negroes of West Africa, and industry said to have been introduced a generation ago from the Gold Coast.

Spieß (C.) Ein Erinnerungsblatt an die Tage des Sklavenhandels in Westafrika. (*Ibid.*, 205-208, 1 fig.) Notes on the slave-trade as carried on in Keta and the surrounding country before the ban of 100 years ago and later, when it lingered on the Slave Coast the longest. The first gold-dust and the first 10 black slaves were taken from W. Africa by the Portuguese in 1442. By 1790 the Slave-trade handled 74,000 blacks in one year. Numerous "forts" (really slave-stations) were established by the Portuguese, Dutch, English, Danes, etc., one of the most famous being Nodza, near Keta.

Struck (B.) Pockenschutzmittel der Gæer, Goldküste. (*Ibid.*, 149-150.) Treats of the preventatives against small-pox in use among the Gæ negroes of the Gold Coast; watching and setting traps against the pox-spirit, sacrifice of cocks, leaving the paths leading to the village uncleaned, shooting off gunpowder, etc., besides numerous other devices, such as individual amulets and the like.

Tessmann (G.) Drei Maheamärchen. (*Ibid.*, 75-78.) Gives German texts with commentary of three tales of the Mabes, a small tribe of the south Cameroon country: Goatbreeding (one cannot serve two masters), the palm-rat and the hedgehog (effect of shame), the dog and his uncle (how dog lost power of speech).

Zenghells (C.) Das Metall der alten Prägtempel. (Chem. Ztg., Cöthen, 1907, XXXI, 1116-1117, 2 figs.) Gives result of Dr Z.'s analysis of an ancient Egyptian (430-322 B. C.) bronze die

from Tel El Athrib. The combination 69.85 per cent. copper, 22.51 per cent. tin, 7.64 per cent. oxygen. The character of these dies indicates a high development of chemical and technical metallurgy in ancient times.

ASIA

A. Khasi in Assam. (Globus, Brnschw., 1907, XCI, 384-386, 1 fig.) Résumé and critique of Maj. P. R. T. Gurdon's *The Khasis* (London, 1907). The Khasi in their social organization "offer the best example of the matriarchate."

Belhomme (R.) Siamese Medicine. (J. Siam Soc., Bangkok, 1907, IV, Pt. I, 17-22.) Cites numerous folk-remedies and treatments of diseases among the Thos (a Thai people) from E. Lunet de Lajonquière's *Ethnographie du Tonkin Septentrional*. See *Beyer* (C.).

Beyer (C.) About Siamese medicine. (*Ibid.*, 1-9.) Siamese medicine is of Indian origin, having, according to tradition, been first taught by Komarabacca, a contemporary of Buddha. It has no knowledge of anatomy and physiology, and little of obstetrics. The *mohs* or doctors are of two classes, — *moh huang* (royal physicians) and *moh ratsaden*, *moh tjaldi* ("physicians of the people," — the second class being innumerable, "as nearly every Siamese believes he knows something of the art of healing, but he exchanges his profession easily with another one." The subject has been discussed at length by Dr Bradley in the *Bangkok Calendar* for 1165. See *Belhomme* (R.).

Bonifacy (—) Contribution à l'étude des différentes colorations de la peau, des muqueuses et de la conjunctive, chez les Annamites. (B. Soc. d' Anthr. de Paris, 1908, V^e s., IX, 31-36.) Gives results of examination of 525 Annamites aged 23-40 and 192 aged 21-28, soldiers and recruits, for skin, mucous and conjunctive coloration. Of the former 71.62 and of the latter 36.46 per cent., presented some pigmentation, the order of frequency being, blue-gray on part of lips, yellow coloration of conjunctive, "white line of abdomen, strong pigmentation of genital points." "Blue spots" were found in 50 of 110 children examined, the highest percentage, 68.75 per cent., in those a year old, the lowest, 29.41 per cent., in those over 4 years. Of 115 recruits accepted (average age 23½ years) the average height was

- 1587 mm., chest-girth 792 mm., weight 51.3 kg.
- Brandenburg (E.)** Ueber Grabsteinmüster in Anatolien. (Z. f. Ethnol., Berlin, 1908, XI, 201-202, 11 figs.) Brief account of grave-stones and ornaments from Kizilbash villages of Japldag, etc.
- Ueber neue Grottenfunde in Phrygien. (Ibid., 382-385, 11 figs.) Treats of the caves of In-Bazar in Phrygia, visited in the summer of 1907, their contents, etc. In-Bazar seems to have been a cult-center of some sort, judging by the remains found and not a fortified place.
- de Brion (H.)** A India Portuguesa. (Soc. de Geogr. de Lisboa, 1908, Repr., 1-30, 11 figs.) Treats of Portuguese India, past and present, its native and European population, castes, religions, etc.
- Caland (W.)** Indische Religion 1904-1906. (Ibid., 127-141.) Reviews and critiques of W. Caland and V. Henry's. *Agnitoma* (2 v. Paris, 1906-1907), J. Schellertowitz's *Die Apokryphen des Rigveda* (Berlin, 1907), H. Oldenberg's *Vedaforchung* (Stuttgart, 1905), O. Strauss's *Brhspati im Veda* (Leipzig, 1905), J. N. Keuter's *The śrauta-sutra of Drāhyāyana* (London, 1904), d. Gastra's *Het Jaimintyairautasūtra* (Leiden, 1906), Whitney and Lanman's *Atharva-veda samhita* (Cambridge, 1905), J. Richter's *Indische Missionsgeschichte* (Gütersloh, 1906), A. J. Edmunds' *Buddhist and Christian Gospels* (3d Ed. Tokio, 1905) etc.; also notes on the periodical literature of this period relating to the religions of India.
- Chandler (J. S.)** The Madura temples (Nat. Geogr. Mag., Wash., 1908, XIX, 218-222, 3 pl., 1 fig.) Brief descriptions of the golden lily tank, the raft tank and the great palace built by Tirumala (1623-1659), the greatest of the Nayakars, the last Hindu dynasty of southern India.
- Craaselt (F.)** Japanische Erziehungsgrundsätze in Schrift und Praxis. (Globus, Brunschwg., 1907, XCII, 37-40, 78-81, 90-94, 15 figs.) The principles of Japanese education are: Obedience (children to parents unconditional, wife to husband, etc.), parental love, etc.; loyalty to the Mikado and the empire (almost worship and deification). The course of education, the use of tales and legends to these ends are indicated.
- Japanische Schrift und Sprache und der japanische Unterricht darin. (Ibid., 251-256, 8 figs.) Treats of Japanese writing system and the instruction given therein (for almost every Japanese word there is a special symbol borrowed from Chinese; these signs were introduced about 285 A.D., — with the then current pronunciation, — by a Korean embassy; the educated Chinese can communicate in writing, but not orally, with the educated Japanese, almost every Japanese word having also a Chinese equivalent). The method of learning the signs is indicated and the differences between the ancient Chinese, the printed and the "cursive" symbols explained, the Katakana and Hirayana alphabets, etc. Besides all these, the differences of vocabulary, pronunciation, etc., in the conversational, customary, educated, courtly, literary and correspondence forms of speech have to be met by the foreigner who wishes to learn Japanese. Examples from the primers in use are given.
- Cresson (W. P.)** Persia: the awakening East. (Nat. Geogr. Mag., Wash., 1908, XIX, 356-384, 22 pl., map.) Abstract from author's book with same title, just published (Phila., 1908. Pp. 300). Illustrations are of ethnologic interest. Notes on workmen of Baku, city of Teheran, bazaars, etc.
- De Forest (J. H.)** Why Nik-Ko is beautiful. (Ibid., 300-308, 4 pl., 3 fig.) Contains some references to the temples and mausoleums at Nik Ko, "a great national center of religion and reverence in an environment of marvelous beauty."
- Fischer (A.)** Ueber Neuerwerbungen aus China. (Z. f. Ethnol., Berlin, 1908, XI, 447-448.) Notes on stone-sculptures of the Han period, a bronze sacrificial lamp in the form of a goose from the Shang dynasty (1766-1122 B.C.), a painting from Turfan dating from the Tang dynasty (618-967 A.D.), etc.
- Frankfurter (O.)** The romanizing of Siamese. (J. Siam Soc., Bangkok, 1907, IV, pt. I, 28-32.) A plan for romanizing the Siamese language, reprinted from a pamphlet compiled by the American Missionaries in Siam in 1842.
- Fritsch (G.)** Ein Besuch auf den Andamanen. (Globus, Brunschwg., 1907, XCII, 181-186, 5 figs.) Account of recent visit of author to the Andaman Is. and the natives (there is also a penal colony of 14,000 prisoners from all parts of India). Dr F. considers the Andaman aborigines "decidedly Nigritic (the Nicobar natives are "Indo-Chinese *metis*"). The Andaman women wear a

"fig-leaf." At the time of the author's visit there lived a *metis* (English father, Andamanese mother), a girl of four years, physical sound, with darkish-brown skin and the hair of a mulatto.

Gressmann (H.) *Mythische Reste in der Paradieserzählung.* (A. f. Religsw., Leipzig, 1907, x, 345-367.) Discusses the mythic elements in the account of Paradise in the book of Genesis: Geography (proper names may have been merely Hebraicized), nature of Paradise (the tradition of the garden is poor and imperfect in Genesis, but other texts in the Bible, etc., indicate richer lore concerning it), the fall of man (here the narration is much changed and interfered with), Eve and the serpent (the serpent was originally a serpent-demon; Eve and the serpent were originally one and the same; she was the goddess of life in the under-world), Adam (replaces a mythic figure; the rib-creation of woman goes back to Babylonian myth), etc. G. concludes that the account of Paradise came to the Canaanites from Mesopotamia by way of Phenicia, the departure from Mesopotamia dating from about 1300 B. C.

Holtzmann (O.) *Religionsgeschichtliches aus den Monumenta Judaica.* (A. f. Religsw., Leipzig, 1907, x, 485-509.) Treats of the data for the history of religion contained in the *Monumenta Judaica* (*Bibliotheca Targumica* and *Monumenta Talmudica*) of Altschüller, Neumann, Wünsche, Hollitscher, etc. The question of oral tradition among the Jews, the Jewish parable, etc., are discussed.

Huntington (E.) *Medieval tales of the Lop basin in Central Asia.* (Nat. Geogr. Mag., Wash., 1908, xix, 288-295, 4 pl., 1 fig.) Abstract of address before National Geographical Society, — further details in the author's *The Pulse of Asia* (N. Y., 1907). According to H., "In the Middle Ages Chaucer and his predecessors seem to have known as much about that region as the average man knows today," — he mentions "the Drye See" and "the Carrenare" (i. e., Kara-Nor). Illustrations of ethnologic interest.

Maurer (F.) *Das Erdrecht im Alten und Neuen Testament.* (Globus, Brunschwig, 1907, xcii, 59-60.) Cites data from the Bible indicating the relation of man to the earth and the earth to man, earth-taboo of Canaan as Jahve's property, earth-cult, earth as abode of spirits,

earth-ordeal, earth as protector of man, etc.

— *Der Phallusdienst bei den Israeliten und Babyloniern.* (Ibid., 256-258.) Cites data from the Old Testament (Noah's "nakedness," penis-taboo, phallus in mourning ceremonies, temple-prostitution of women, etc.), and the Babylonian documents (laws of Hammurabi, phallus-cult of Istar-prostitutes, etc.) concerning the phallus-cult among the ancient Israelites and Babylonians. According to Dr M. this cult goes back into the third millennium B. C., or farther still.

Meer-Zigeuner (Die) der Mergui-Inseln. (Ibid., 289-296.) Brief account of the Selung of the Mergui islands. Based on the article of R. N. R. Brown in the *Scottish Geographical Magazine* for September, 1907. They still number 800 or 900.

Meltzer (H.) *Zentralasiatischer Aberglaube.* (A. f. Religsw., Leipzig, 1907, x, 311-314.) Cites data from F. von Schwarz's recent (Berlin, 1900) book on Turkestan illustrated the survival of old religious and superstitious ideas, etc., in Central Asia, — e. g., the shamanism of the Kirghiz Cossacks, the "saints" of the Mohammedans, which include Alexander the Great, Tamerlane, etc., the use of amulets, tree-worship, etc. The Kirghiz Cossacks are noteworthy because they have been subject in whole or in part to three great religions, — Buddhism, Islam and Christianity.

Münsterberg (O.) *Ueber den Einfluss Westasiens auf ostasiatische Kunst vorchristlicher Zeit.* (Z. f. Ethn., Berlin, 1908, xl, 257-262.) Treats of the influence of western Asia upon eastern Asiatic art in the pre-Christian period. M. seeks to show in Japanese and Chinese culture evidence of pre-Mycenean migration (Caucasoid Aino and the stone-age pottery, ornamentation, etc.). Mycenean bronze art and culture ornamentation etc., in the second millennium B. C., in China, with renaissance under the Han dynasty in the second century B. C. (also Graeco-Bactrian influences; Malay influences in Japan, — previously touched by early Greek colonies in India, or due to direct Cyprian transfer of Aegean culture to Malay Japan. The Gandhara Greek influence and the Turkestan art of the period from the fourth to the eighth centuries A. D., built up on the ruins of

Greek culture are also noted. Some of M. views are still quite hazardous, especially that concerning the importance of Malay culture in Japan.

Nagai (A.) Der chinesische Kuchengott, Tsau-kyun. (A. f. Religsw., Lpzg., 1907, XI, 23-43.) Treats of Tsau-kyun, the kitchen-god or "hearth-prince," one of the oldest and best-known folk-deities of Chinese pantheon. Name and origin (various explanatory legends), religious significance (god of the hearth, family, home life; festival and offerings), etc. He resembles Agni of the Aryan Vedas, god of fire, and is a messenger of heaven; other points of resemblance with Agni are noted. Transference of religious ideas is suggested by N.

d'Ollone's Forschungen über den Lolo. (Globus, Brnschw., 1907, XCII, 384-385.) Based on Capt. d'Ollone's account of his visit in the spring of 1907 to the Lolo of S.W. China (Yunnan and Szechwan) in *La Géographie* (Paris) for October, 1907. The political and social organization of the Lolo, according to d'O., "resembles that of Gaul in the time of the first Frankish kings." He obtained a number of Lolo MSS.

Saad (L.) Die Ausgrabungen in Gezer in Palästina. (Ibid., 213-215.) Résumés the excavations at the ancient city of Gezer by Macalister since 1902. Gezer had a continuous history up to the Crusades of 3000 years. Most of the antiquities discovered belong to the stone and bronze ages.

Stein's weitere Forschungen in Ostturkestan. (Ibid., 97-98.) Based on Stein's letter in the *London Times*, describing his more recent explorations in eastern Turkestan, in the region of Nija, Cherchen, Lob Nor.

Terzagi (N.) Die Geisselung des Hellespontes. (A. f. Religsw., Leipzig, 1907, XI, 145-150.) Discusses Herodotus' account of the scourging of the Hellespont by Xerxes, a magic act intended to overcome the evil spirits of the waters, — the rite was further strengthened by the curse. Related ceremonies are cited from ancient and modern times.

Weissenberg (S.) Palästina in Brauch und Glauben der heutigen Juden. (Globus, Brnschw., 1907, XCII, 261-264.) Treats of Palestine in the customs and beliefs of the modern Jews. Pregnant women wear beads from the Holy Land and children amulets; the groom in betrothal breaks a glass under foot

in memory of the destruction of Jerusalem; the temple-destruction is remembered in house-building; little bags of Palestinian earth are amulets against sickness; the resurrection, it is believed, will take place near Jerusalem; prayers are made toward Jerusalem and for the restoration of Zion; all the great festivals except Purim, are close connected with the Holy Land. The modern Zionist movement is more practical.

INDONESIA, AUSTRALASIA, POLYNESIA

Basedow (H.) Vergleichende Vokabularien der Aluridja- und Arunddta-Dialekte Zentral-Australiens. (Z. f. Ethnol., Berlin, 1908, XI, 207-228.) Comparative vocabularies of some 450 words with some phrases and sentences (also words arisen since contact with whites), in the Aluridja (2 dialects) and Aranda languages collected by the author.

Beitrag zur Entstehung der Stilisierungsornamente der Eingeborenen Australiens. (A. f. Anthropol., Brnschw., 1908, N. F., VII, 216-219, 4 figs.) Discusses the origin of certain ornamentation of the native Australians from conventionalizing of outlines of the *Pteropus*, of the foot-prints of the kangaroo, modifications of outlines of human and animal figures, etc. The development of the kangaroo-figure on p. 217 is interesting. Other curious figures are developed by modification of human bodies in the dancing posture.

De Sturler (J. E.) Les danseuses de cour à Java. (R. de l'Éc. d'Anthrop., Paris, 1908, XVIII, 174-181.) Treats of the court dancers of Java, their dress, ornaments, actions, etc. They are of two classes, *bidoja* and *serimpie*, distinguished by dress, number and length of dances, etc.

Grabowsky (F.) Der Häuserbau, die Dörfer und ihre Befestigungen bei den Dajaken Südost-Borneos. (Globus, Brnschw., 1907, XCII, 69-75.) Gives details concerning house-building, villages and their fortifications among the Dayaks of the Kapua river in S.E. Borneo, from investigations of the author in 1881. The fortified villages are called *kotta* (one is figured on p. 73).

Klaatsch (H.) Die Steinartefakte der Australier und Tasmanier, verglichen mit denen der Urzeit Europas. (Z. f. Ethnol., Berlin, 1908, XI, 407-436, 2 pl., 8 figs.) Discusses Australian and

Tasmanian stone implements in relation to those of prehistoric Europe. K. thinks that his Australian and Tasmanian material "strikingly confirms the chief results of Rutot's most recent work," but arranges it according to his own independent principles. The parallel between the Australian-Tasmanian material and that from primitive Europe is many-sided. Rutot's most primitive specimens of the Mesvinian or Rutelian find their counterparts in Australia or in Tasmania. Tertiary man has existed in Europe as well as in Australia. K. considers the eolith question now settled in favor of human origin.

Mathews (R. H.) Some mythology of the Gundungarra tribe, New South Wales. (*Z. f. Ethnol.*, Berlin, 1908, XI, 203-206.) English text of a tale of Gu-rang'-atch, one of the Burriñ-gilling, legendary folk (much cleverer than the people of the present time) who "could make rivers and other geographical features, cleave rocks and perform many similar Herculean labors." G. had contests with Mtr-ra'-gañ, the tiger-cat.

Moszkowski (M.) Ueber zwei nicht-malayische Stämme von Ost-Sumatra. (*Ibid.*, 229-239, 3 figs.) Treats of the Orang Akett (only 300 now remain in three villages) and the Sakei, — stature, cephalic and facial measurements of 117 Sakei and 13 Akett are given. Notes on physical characters, temperament, weapons, shamans, houses, activities, use of environment and products, festivities, etc. The average stature of the brachycephalic (84.32) Akett is 1518.8 mm.; of the dolichocephalic (75.45), Sakei 1561.6 mm. The Sakei of Sumatra belong with those of Malacca. The Sakei strikingly resemble the Veddas and the dwarfism of the latter may be only secondary. The Sakei have pile-dwellings on land. Unlike the Akett, the Sakei have a great surplus of women.

Pösch (R.) Eine Reise an der Nordostküste von Britisch-Neuguinea. (*Globus*, 1907, XCII, 277-283, 5 figs., map.) Gives results of visit to the Collingwood and Goodenough Bay regions of British New Guinea in 1905, notes on the native tribes (Yassiasi and their dances; Kworafi houses; Boiana, tree-climber, etc.). A few words and the numerals 1-10 from Mosquito id. are given; the cephalic indexes of 14 individuals varied from 70 to 80, indicating considerable

intermixture. The lowest adult stature met with was 1296 mm.; another of 1420 was found at Yassiasi. Drinking water by means of the interlocked fingers was noted at one place.

— *Prähistorisches aus Neuguinea.* (*Ibid.*, 301.) Calls attention to traces of a prehistoric culture formerly existing in British New Guinea, first made known by Monckton in 1905 for the region of Collingwood Bay in Rainu, in his *Annual Report on British New Guinea*.

Schuller (R. R.) Ergänzungen zur, "Monographie bibliographique sur l'île de Paques." (*Ibid.*) Adds 5 maps and plans and 26 other titles (mostly Spanish) to Dr Lehmann's Bibliography of Eastern India in *Anthropos* for 1907.

Strehlow (C.) Einige Sagen des Aranda-stammes in Zentral-Australien. (*Globus*, Brnschw., 1907, XCII, 123-126.) German texts of a moon-tale, two others about the "rain men" and the emus; also native text with interlinear version and free translation of a legend of "the many circumcised." From the Aranda (Arenta) of Central Australia.

Volz (—) Beiträge zur Anthropologie und Ethnographie von Indonesien. III. Zur Kenntnis der Kubus in Südsumatra. (*A. f. Anthropol.*, Brnschw., 1908, N. F., VII, 89, 109, 2 pl., 13 figs.) Gives detailed anthropological description, measurements (stature, head, face, etc.), etc., of 17 Kubus (men 11, women 6) between the ages of 16 and 50 from South Sumatra, — two physical types, one of Negrito origin, are distinguished. If the Kubus have a Malay element, the mixture must have occurred in pre-Mahometan times. Culture (very low, half-nomad people), clothing (no real hair-dressing), houses (very primitive, but improvements recently) and furniture, hunting (most creatures serve for food), agriculture (shared by men and women), festivals, bark cloth and string, vessels of wood, basketry, articles of bamboo, political organization (republican), position of woman (generally quite subordinate), marriage (no ceremony or festival), mutilations (circumcision occasional, teeth-filing different from that of the Malays; tattooing, body-painting, deformation of nose, ears, lips not practiced), death and burial, dances (said not to dance) and musical instruments (none found), mental life (conversation with natives given, p. 106-7). At pp. 107-108 a German-Kubu-Malay vocabu-

lary of some 90 words is given. The numerals 1-19 are as in Malay. A brief *pantun* is given on p. 107. The Kubu vocabulary contains a number of Battak words. Altogether the Kubus are a very primitive people.

AMERICA

- A.** Afrikanische Märchen in Westindien. (Globus, Brunschwig, 1907, XCII, 33). Notes on Jekyll's *Jamaican Song and Story* (London, 1907).
- Adams** (H. C.) Along the old Inca highway. (Nat. Geogr. Mag., Wash., 1908, XIX, 231-249, 16 pl., 2 fig.). Describes journey from Sicuani to Cuzco. Notes on Quechuas, food and drink. Illustrations (Indian types, ruins, etc.), ethnologically valuable.
- Bateman** (L. C.) The Maine Indians of to-day. (So. Wkman., Hampton, Va., 1908, XXXVII, 145-152; 5 figs.). Notes the Passamaquoddy and Tarrantines of Calais and Oldtown, Me. The men are mostly guides and lumbermen, the women famed for basketry. These Indians have made good progress, though they have preserved old customs, etc., and retain many ancient myths and legends. They are all Catholics, having been long ago converted by the Jesuits. A daughter of the Tarrantine chief Madokawando, became the wife of the Baron de Castine. The name Orono perpetuates the memory of another.
- Chamberlin** (R. V.) Animal names and anatomical terms of the Goshute Indians. (Proc. Acad. Nat. Sci., Phila., 1908, 74-103.) Valuable vocabulary (2 cols. to pages) of terms for body (organs and parts), names of mammals, birds, reptiles, insects, with notes on meanings, use, etc. Some notes on morphology. Goshute and Goshup dialectical differences are recorded. The "white man" figures in the names of many things, *hee*, "bob-white," carp, fowl, parrot, etc. The giraffe, whale, etc., are identified with certain mythic animals.
- Chester** (C. M.) Haiti: a degenerating island. The story of its past grandeur and present decay. (Nat. Geogr. Mag., Wash., 1908, XIX, 200-217, 2 pl., 2 fig.) Historical sketch with pessimistic conclusion that "Haiti is degenerating to a condition of barbarism." Admiral C. apparently believes the worst tales of Voodooism.
- Dana** (M.) Voodoo, its effect on the Negro race. (Metrop. Mag., N. Y., 1908, XXVII, 529-538, 5 figs.) Treats of voodoo in the United States and Haiti, references to Miss Owen, St. John, etc. According to D., "there is an annual gathering of the elect in Louisiana, which is held on St. John's Eve, June 23d, at a lonely spot somewhere in the neighborhood of Lake Pontchartrain, but the exact location is kept secret." The cult is still making headway, not declining. Voodoo came into the U. S. from Haiti, whither it was carried "by slaves from Ardra and Whydah," where the faith still remains to-day. To ceremonies of the snake god were added human sacrifice and cannibalism, rites of the god Shango. Voodoo came to Louisiana about 1809.
- Gonzales de la Rosa** (M.) Découverte de trois précieux ouvrages du métis péruvien Blas Valera, qu'on croyait détruites en 1596. (J. Soc. d'Amér. de Paris, 1908, N. S., IV, 192-207.) Treats of the supposedly lost works of Blas de Valera, the *métis* historian of Peru, — *History of Peru* (in Latin), *Historical Vocabulary* (in Spanish), *The Indians and their Customs*. See also *Revista Histórica* (Lima), 1906, II, 180-199.
- La leyenda de Jauja. (R. Histór., Lima, 1907, II, 553-561.) Treats of Jauja (in the time of Pizarro Xauxa) a place in Peru, which in popular imagination, etc., became a fabulous city of great wealth, sometimes a wonderful island, sometimes synonymous with Peru itself for riches, etc. The text of a poem on the "Island of Jauja" is given.
- Las antiguéddades de Manabi del Profesor Saville y el estudio de la civilización de los Caras. (Ibid., 569-75.) Résumés and reviews Dr. M. H. Saville's *The Antiquities of Manabi* (N. Y., 1907). The archeological investigation of the Cara region is of great importance for the prehistory of Ecuador, etc.
- Hamy** (E. T.) La hache d'Antoine de Jussieu. (J. Soc. d'Amér. de Paris, 1908, N. S., IV, 203-208, 2 figs.) Figures and describes the stone axe with wooden handle written of by A. de Jussieu in 1723 and by him presented to the Académie. It is of Carib provenance.
- L'album des habitants du Nouveau Monde d'Antoine Jacquard, graveur poitevin du commencement du XVII^e siècle. (Ibid., 225-236, 4 pl., 1 fig.) Brief account, with reproduction of engravings of Indians, etc., of *Les divers*

- portraits et figures faites sur les murs des habitans du Nouveau Monde.* It has been thought that the artist had under his eye some of the Tupinambas from the island of Marañon, brought to Paris by Razilly in 1614.
- Hébert (J.)** Survivances décoratives au Brésil. (Ibid., 185-91, 1 pl.) Compares the ornamentation on an earthen vase from Macupy (near the Yapurá) in the valley of the Amazon, with the tattoo patterns of a Caduvei Indian from the Rio Nabileco and of a Chamacocco Indian woman, a slave of the Caduvei of the same place. The tattooing resembles strikingly the figures on vases from Macupy and Manãoz, indicating perhaps unity of origin of art and peoples.
- Jacobi (A.)** Die Einführung des zahmen Rentieres in Alaska. (Globus, Brnschw. 1907, XCII, 218-221.) Treats of the introduction of the domestic reindeer into Alaska. Based on writings of Georgeson, Gordon, Grosvenor, Sheldon, Jackson, Nelson.
- Koch-Grünberg (T.)** Das Haus bei den Indianern Nordwestbrasilien. (A. f. Anthropol., Brnschw., 1908, N. 2., VII, 37-50, 3 pl., 29 figs.) Describes the *maloca* or characteristic house of the Indians of N.W. Brazil, situation (on high land), construction (work of men), size (sometimes very large), form (oblong or square with variations; sometimes semi-circular or round foundations), ornamentation (paintings,—human and animal figures, conventional designs, etc., on walls and posts,—sometimes the designs are in black, red, yellow, and white on a purple-red ground, a common post-design being that of the serpent. Animal figures made of maize-ears and figures of birds and snakes from palm-leaves are hung up in some of the houses. The divisions of the house, furniture, etc., are treated. The interiors are generally clean. The inhabitants of a *maloca* (mostly one family, often an old couple with their grown up sons and their families; owing to extra-tribal marriage women speaking entirely different languages are often to be found under the same roof) number from 30 to 100 and the author testifies to the good behavior and morality of the Indians. Some of the great dance-festivals are held in the *malocas*. The sick are cared for there and the dead buried under the floor. The *maloca* "is thus the home of the Indian in life and in death."
- Lehmann (W.)** Reisebericht aus San José de Costa Rica. (Z. f. Ethnol., Berlin, 1908, XXXVIII, 439-446, 6 figs.) Notes on visit to the American Museum of Natural History (New York), Peabody Museum (New Haven), Peabody Museum (Cambridge), Panama, parts of Costa Rica, and the Central American antiquities in the various museums, etc. While in Costa Rica Dr L. collected extensive Chiripó and Bribri vocabularies, measured a number of Indians (among the Chiripó two physical types occur), made extensive archeological collections from Nicoya and Teraba and obtained a brief vocabulary from Indians of the Rio Lari in Tuts. Among Chiripó children several cases of "Mongolian spots" (1½-2 yrs.) in the coccygeal region were noted,—one had a smaller "blue spot" on the upper arm. According to the Indians these spots, called *sulá-óí* ("spot of Sula") indicate that the goddess *Sulá* has touched the new-born child with her finger.
- Marcel (G.)** Le Père Yves d'Évreux. (J. Soc. d'Amér. de Paris, 1907, N. 3., IV, 175-184.) Account of life and activities of Father Yves d'Évreux, author of *Voyage dans le nord du Brésil fait durant les années 1613 et 1614*, republished by F. Denis in 1864; and of *Suite de l'histoire des choses plus mémorables advenues en Maragnon les années 1613 et 1614* (Paris, 1615).
- Nordenskiöld (E.)** Recettes magiques et médicales du Pérou et de la Bolivie. (Ibid., 153-174, 4 figs.) Résumés data with personal observation concerning "magical" receipts and "medicine" in Peru and Bolivia. Treats of *callahuayas* ("medicine-men") and their pharmacopoeia, stock-in-trade, etc.; objects (tin figures of human beings, animals, instruments, etc.) buried when building a new house; fumigation of houses; defense of houses and their occupants against hail and lightning (crosses, St. Nicholas bread, etc.); means of obtaining rain, fine weather, a good harvest (excavating an old tomb prevents rain, or leaving the dead unburied; fumigation of the fields ensures good crops); means of obtaining good horses and donkeys; how to expel disease; diseases and their causes (neglect of ancestors; coming of whites, etc.); classification of diseases, curative methods (21 medicines of the *cholai* for internal and 14 for external use); amulets (stone llamas, figures

representing *coltus* etc.); offerings to find lost objects. The Aymaras and Quechuas have borrowed something from the Spaniards.

Polo (J. T.) Blas Valera. (R. Histór., Lima, 1907, II, 544-552). Account of life and writings of Blas Valera (1551-1596), an authority on Quechua and Aymari and author of a *History of the Incas* in Latin and other words. See *Gonzales de la Rosa* (M.).

Preuss (K. T.) Ritte durch das Land der Huichol Indianer in der mexikanischen Sierra Madre. (Globus, Brunschwg., 1907, XCII, 155-161, 167-171, 5 figs.) Account of visit in spring of 1907 to the country of the Huichol Indians of the Mexican Sierra Madre, with descriptions of the feast of roasting the young maize ears (and sacrifice of steer) at Tierras blancas, and similar rites and ceremonies at Sta. Gertrudis, healing of the sick (there are seven sorts of disease songs) at Rancho San Isidro, the temple of San Andres, Sta. Catarina, its temple, "carnival," etc., ceremonies and rites connected with sun-cults, the holy places (caves, etc.) in the neighborhood of Sta. Catarina, — many relics and continuations of old-time heathen practices.

Robelo (C. A.) Diccionario de Mitología Nahuatl. (An. Mus. Nac. de Mex. Seg. Ep., 1908, V, 193, 336.) Continuation, *Temacpalitotique-Tonacateotli*, of dictionary Nahuatl mythology. The most important articles are those on *templos*, *teotl* (212-218), *Tepostecatl* (228-234), *Tescatlípoca* (244-250), *Tloque Nahuaque* (300-321), *Toci* (321-326), etc.

Sarfert (E.) Haus und Dorf bei den Eingeborenen Nordamerikas. (A. I. Anthropol., Brunschwg., 1908, N. F., VII, 119-215, 84 figs., 3 maps.) This well-documented monograph treats in detail of house and village among the various aboriginal peoples of North America. General culture (collectors and hunters, fishers, "hoe-culture"; nomads, half-sessile, — summer-sedentary and winter-sedentary), general traits of house-architecture (temporary and permanent, summer and winter houses), material used, peculiarities of house-building (pit, doors and openings, communal houses, interior), round (tents of several varieties, houses of bark and wood, straw, grass, leaves, earth-houses, snow-house of Eskimo, etc.) and four-cornered (wedgestyle, saddle-roof, wooden-house winter

and summer; earth-houses, straw mud houses, Pueblo dwellings). The North American Indian houses "appear everywhere as a function of climate and vegetation." Five chief round house and four chief four-cornered types, with numerous variations, are distinguished. In the section in the village (pp. 187-211) origin and situation, fortification (also Pueblo as artificial fortification), public buildings, etc. (village-house, sweat-house, village square, etc.), are treated. Of villages 4 types are distinguished ("line village," Pueblo, round village, "weiler"). Influence of European culture can be traced in the villages of the Hurons, etc. Some Eskimo and California villages represent the primitive type.

Schmidt (M.) Ueber altpueruanische Ornamentik. (Ibid., 22-36, 2 pl., 42 figs.) Treats of the ornamentation of the pottery and textile products of the ancient Peruvian culture of the Ica valley. According to Dr. M., "the 'textile-square' in its characteristic form with the diagonally running step-lines and the figures in the two opposite corners is the basal element of the whole surface-ornamentation in the strict sense. This is true of the old Ica material as it is also of that of certain modern Indians of the Xingri region. And a great part of the geometric and figurative ornamentation has grown out of the typical models necessarily produced in textile technique, e. g., the use of the palm-leaf. There are two chief groups of ornamentation of surface which are distinct in origin, — natural representation entirely independent of textile ornament and that which has arisen first as textile model and then has been applied secondarily as surface ornament in the narrower sense." The development of various figures from the "textile square" is shown both on basketry and pottery (hook-pattern, swastika, certain bird and animal figures, etc.). Interesting is the human figure (fig. 40) which has been developed on a basis of technique and the "textile square."

Schuller (R. R.) Die Araukanen in den Missionen von Südschile. (Globus, Brunschwg., 1907, XCII, 337-338.) Gives, from the government report, *Empadronamiento de los indígenas*, statistics, of the Araucanian Indians, and notes on their character. This census (not exact) for the south Chilean missions gives alto-

gether some 20,000, of whom about half are still heathen.

— Veröffentlichung alter Handschriften über Araukaner. (Ibid., 289.) Notes on the MS. of the Franciscan missionary Father Calzada, whose *Confesionario* in Spanish and Araucanian is in press, edited by Dr Schuller, with biographical notes by Father Pavez, O.F.M.

Uhlenbeck (C. C.) Ontwerp van eene vergelijkende vormleer der Eskimotalen. (Verh. d. k. Akad. van Wetensch. te Amsterdam, Afd. Lettrk., N. S., D. VII, No. 3, 1907, 1-76.) Sketch of the comparative morphology (noun, pronoun, verb) of the Eskimo dialects (Alaskan,

Kadjak, Labrador, Greenland, Mackenzie River, Namollo).

Winchell (N. H.) Pre-Indian inhabitants of North America. II. (Rec. of Past, Wash., 1907, VI, 163-181, 3 pls., 3 figs.) Treats of man and the elephant and mastodon (the elephant became extinct in N. America not more than 2,000 years, and "not more than 500 years have passed since the Mound-builders left the Ohio valley"), the Wisconsin glacial epoch (Trenton gravels, N. J., Little Falls, Minn., Masterman axe, etc.). According to W., "the American race is apparently as remote in time as any of Europe or Asia."

FOREIGN NOTES

PARIS SCHOOL OF ANTHROPOLOGY

The Paris School of Anthropology opened on November 3d for its thirty-third year with a corps of eight professors, three associate professors, and four lecturers. Courses will be offered as follows: L. Capitan, professor, Prehistoric Anthropology. G. Hervé, professor, Ethnology. P. G. Mahoudeau, professor, The Genealogy of Man; Anthropoids; Hominians. L. Manouvrier, professor, Physiological Anthropology. A. de Mortillet, professor, A Comparative Study of Primitive Industry, both Ancient and Modern. G. Papillault, professor, Sociology. F. Schrader, professor, Anthropological Geography. S. Zaborowski, professor, Ethnography (Italy, The Balkans, Greece). R. Dussaud, associate professor, The Ancient Peoples of Asia Minor. J. Huguet, associate professor, General Ethnology (The Berbers). E. Rabaud, associate professor, Embryogeny and Anatomy. R. Verneau, lecturer, Fossil Man in Europe and America. R. Anthony, lecturer, Vestigial Structures in Man. H. Pieron, lecturer, Psychometry and Ethnic Psychology. A. Marie, lecturer, Physical and Mental Degeneracy.

G. G. MACCURDY.

BIRD-BOLAS AMONG THE EASTERN ESKIMO

In a description of the Eskimo of Baffin Land and Hudson Bay¹ I described a number of bone objects collected by Captain George Comer on Southampton island, which were explained to him by the Eskimo as buttons for closing women's belts. I expressed the opinion that, since many of these specimens were found together, and since all the perforations are near the narrow end of the specimens and do not allow of a stout thong passing through, they are more likely to be bird-bolas such as are known from Alaska. In a letter from Cape Fullerton, dated July 6, 1908, Captain Comer corroborates this view. He writes:

"I wish to acknowledge that you were right in regard to the use of the bola or sling among the Southampton island natives. It is, as you are aware, the custom to place near the head of a grave, under stones, such implements as a person has used in life. At one grave at

¹ *Bulletin of the American Museum of Natural History*, xv, 396.

Southampton island I found, placed with the harpoons and arrowheads, three of these round pieces of bone, each having a small hole in it. An Iglulik native accompanied me, who said that his grandfather had told him that these bones were used in capturing large birds.

"There was another custom peculiar to these people. They fastened a piece of bone, six or eight inches long and about a pound in weight, across the heavy thong to which the dogs were harnessed. They claim that when the dogs start to pull, this decreases the strain on the dogs' harness.

"I am also told that the natives of King's cape were in the habit of coming over to Bell island, which is part of Southampton island, to trade with the natives."

FRANZ BOAS.

BRITISH ASSOCIATION MEETING

The 1908 meeting of the British Association for the Advancement of Science was held in Dublin, September 3 to 9. During the meeting many papers of unusual interest were read before the Anthropological Section, which met at the Royal College of Physicians. In *Man* for October, 1908, appears a brief account of the meeting, together with summaries of various papers, several of which are given below:

J. P. DROOP: *Neolithic Culture in Northern Greece*.—Recent exploration of the neolithic culture of northern Greece has shown that the plain districts of southern Pelasgiotis, Thessaliotis, Phthiotis, Malis, and Phocis were inhabited from an early date by three peoples alike in culture, and near akin, but distinguishable by the varying style of their painted pottery. The stone implements consist of celts (sometimes bored), rubbers, and polishers; while obsidian chips are much more frequent than flint. Traces of eight successive settlements show that the period of painted pottery gradually passed, after the fourth settlement, into a period of unpainted polished ware. The eighth neolithic settlement is roughly dated to 1300 B.C. by the presence of important Mycenaean sherds. A series of tombs sunk into the remains of this eighth settlement indicates a subsequent poor bronze period. Thus, during the development of the Aegean bronze culture the north of Greece was still in an Age of Stone, and used bronze only at a comparatively late date, and presumably but for a short while before the introduction of iron. The date at which these neolithic peoples brought in their comparatively high culture may be placed in the middle of the third millennium.

PROFESSOR G. ELLIOT SMITH: *Anthropological Work in Egypt*.—The earliest known human remains found in the Nile valley, when com-

pared with those of later times, demonstrate the fact that in predynastic times Egypt and Nubia were inhabited by one and the same race, which has persisted in Egypt with little or no change in physical characteristics throughout the intervening 6000 years until the present day. On the whole they share the characteristics which distinguish the majority of the peoples fringing the Mediterranean. The physical characters of the population are remarkably uniform; they exhibit a range of variation, which is not appreciably greater than that of the present races known to us, though, of course, it is easy to select the extremes of these variations and call them "coarse" and "fine" types or "negroid" and "non-negroid" strains. As we should expect, there is some slight evidence of an infusion of black blood, but this is very small in amount, and its effects very much slighter and less widely diffused than is commonly supposed to be the case. The negro influence is least marked, if indeed it is not a negligible factor, in the earliest predynastic times; but it becomes more and more pronounced in later, and especially so in modern times. From the time of the earliest Egyptian dynasties a noteworthy change occurs in the physical characteristics of the people of Nubia, and, though in a very much slighter degree, in Lower Egypt. The inroad of negroes from the South leads to the transformation of the Nubian population into a hybrid race. And there is some evidence to show that even at the time of the Pyramid builders there was some influx of an alien race from the Levant, which intermingled with the predominant Egyptian population of the Delta. Three thousand years later a much greater immigration of people presenting the same alien characteristics poured into Egypt and Nubia. From this time onward these foreign immigrants came to Egypt in a constant stream.

PROFESSOR G. ELLIOT SMITH: *The History of Mummification in Egypt*.—In predynastic times in Egypt it was the custom to bury the bodies of the dead in the sand, roughly wrapped in skins, linen, or matting. As the result of the dryness of the soil, and the exclusion of the air by the close adaptation of the sand to the body, desiccation often occurred before any putrefactive changes set in, and the corpse thus became preserved in a permanent form. Thus the idea must have naturally presented itself to the Egyptian people, perhaps in early dynastic times, to attempt to secure by art the preservation of their dead, which was no longer attained naturally, once it became the custom to put the body into a coffin or a rock-cut chamber, because the air thus buried with the corpse favored putrefaction. The Egyptians would be encouraged in these attempts, to which they no doubt were prompted by their religious beliefs

no less than by the natural inclination of all mankind to preserve the remains of those dear to them, by the help which the properties of their soil and climate afforded them, as well as by their knowledge of the properties of the preservative salts, found ready at hand in such abundance in Egypt, and of the resins obtained from neighboring lands, with the properties of which they had been familiar even in predynastic times. In this way the origin of the idea, the reason for attempting to put it into practice, and the means for doing so become intelligible to us. We have no exact data to permit us to say exactly when embalming was first attempted in Egypt. Although the earliest bodies certainly known to have been embalmed are of the period of the tenth dynasty (found at Sakkara by Mr Quibell), there is some slight evidence to suggest that some form of mummification was attempted in the times of the earliest Pyramid builders. By the time of the Middle Empire the general technique of the operation had attained the stage which in its main features was the conventional procedure for the succeeding 2000 years. But it was in the time of the New Empire that the process of mummification reached its highest development. Further stages in the evolution of the art of embalming were followed by a rapid decline.

ANTHROPOLOGIC MISCELLANEA

A Massachusetts Steatite Quarry.— On July 19, 1907, in company with Mr J. T. Bowne, of Springfield, the writer visited an ancient aboriginal steatite quarry situated in the Wilbraham Hills, Massachusetts. The quarry is on Twelve Mile brook, on the Seavers farm, about a mile and a half east of the North Wilbraham station of the Boston and Albany railroad, twelve miles east of Springfield, and not far from Chicopee river. The steatite, which is of inferior quality, occurs at the foot of a knoll in large boulders, some of which are from five to seven feet in thickness. It is apparent that the Indians hewed out the solid bowl-shaped blanks from the parent boulder, and carried them to the top of the knoll where the rougher part of the hollowing process was carried on, as fragments of unfinished vessels are found strewn over the ground and near the surface for an acre or more, together with the rude picks with which the work was done. Apparently no long period of occupancy occurred here, for only a few arrowpoints and fire-cracked stones have been found, suggesting a few days' camp while the work in the quarry was in progress.

In 1903 the site was partially explored by A. L. Dakin, a student at Harvard University, for the Springfield Museum, and a good series illustrating the manufacture of steatite vessels was obtained for that institution. In the main quarry a large steatite boulder was uncovered, and a portion, four feet high by five feet long, still remains above ground. This block is very interesting as it shows with surprising newness the work of the aboriginal quarryman. Several blanks for vessels have been removed from the mass, as is shown by the scarred and hollowed surface, and three others blocked-out but undetached, remain on the parent boulder. The most prominent of these worked blanks stands out about two and one-half or three inches from the mass on the north side of the boulder. With one of the rude stone picks so abundant over the site, the ancient artisan had hewn a channel or groove about the selected portion, and hacked away until the bowl-shaped mass stood out in relief. Then the pecking was continued in and under until the blank stood upon a pedestal from which it might easily be broken. In the case of the boulder under discussion the task was abandoned before the last step took place. The ground about this boulder is strewn with steatite chips and dust.

The tools used in the work were made of trap procured from Mount Tom, some six or seven miles away in a direct line, but ten or twelve miles by water. The implements consist mainly of exceedingly rude chipped points, but long and neatly made picks with polished points occur. These do not appear ever to have been grooved or notched for hafting, as do those found in the steatite quarries in the vicinity of Washington, D. C. The broken points of these implements are found in the debris about this site, and many of the picks found appear to have been resharpened again and again.

No tools save the picks have been found, with the sole exception or one very much battered grooved ax and several fragments of similar implements, and the few arrowpoints before mentioned. These are all in the collection of the Springfield Science Museum.

The finishing process was never carried on in the immediate vicinity of the quarry, at least no finished pots or fragments of them have been found there. It would appear that the rough bowls were taken to the village sites along the nearby Connecticut river and there worked down and polished. Fragments of bowls, both finished and in the process of manufacture, occur on all the local sites, and fine whole vessels have been found in a prehistoric burial place at Holyoke, and at Hadley, Litchfield, and other localities. Some very fine examples of these are in the collection at the Gilbert Museum, Amherst College, Amherst, Mass.

Throughout this region soapstone seems to have taken the place of pottery to a very large extent, as earthenware vessels and even sherds seem to be exceedingly rare in the Connecticut river valley.

An excellent series from the Wilbraham Hills quarries are in the Springfield Science Museum; others are in the Gilbert Museum at Amherst, the Peabody Museum at Harvard University, and in the cabinet of Mr J. T. Bowne, of Springfield, who has made a careful and accurate study of the archeology of the Connecticut valley region.

AMERICAN MUSEUM OF NATURAL HISTORY,
NEW YORK.

ALANSON SKINNER.

No New Serpent Mound in Ohio.—In a recent number of *Records of the Past*¹ reference is made to an earthwork in Ohio under the title "A New Serpent Mound in Ohio and its Significance." There are so many mistakes in this article, and it is so generally misleading, that it seems a duty to place on record the facts in the case for the benefit of future students who may not be familiar with the relative value of the

¹ Vol. 7, part 5, pp. 220-224, Sept.-Oct., 1908.

testimony relating to this site, especially since the earthwork in question may eventually become even more reduced, if not entirely obliterated.

Several years ago in *The American Antiquarian*¹ I published a brief note regarding this earthwork under the title "Not a Serpent Mound." During that year I made measurements of that part lying in the natural forest; the other portions had been cultivated for many years, making it difficult to trace them and even impossible to follow some of the embankments. Photographs were made and cross-sections cut in the embankments. The negatives, specimens, and map were transferred to the Department of Anthropology of the World's Columbian Exposition at Chicago, and this material was subsequently deposited in the Field Museum of Natural History.

The most accurate published map of this site of which I am aware forms plate 2 (with a description on page 8) of Charles Whittlesey's "Descriptions of Ancient Works in Ohio," published in Vol. III of *Smithsonian Contributions to Knowledge*, Washington, 1850. The map bears the title "Ancient work, Warren county, Ohio, two miles below Todd's fork." The survey was made by Whittlesey in 1839, when the work was much more easily traced than in recent years. The map distinctly shows the part of the earthwork described in *Records of the Past*, at the left, to the west of the letter A and immediately south of the bayou. That the work is not a serpent mound is there made clear.

I do not recall anything new in the recent article referred to that will be useful to archeological research in the future. It is possible that the Ohio Archaeological and Historical Society or other institution may have made a survey of the earthwork of which I am not aware. My personal explorations were confined to that portion lying within the maple forest to the west of the point marked A on Whittlesey's map; in fact I did not even attempt to trace the other embankments, and the people of the vicinity seemed not to have been aware of their existence, although they had been under cultivation for more than half a century. It consequently would seem that the Serpent Mound article to which attention is directed must be set aside in favor of Whittlesey's much earlier description and map.

HARLAN I. SMITH.

Charles Eliot Norton died at his home in Cambridge, Mass., October 21, 1908. He was born in Cambridge, November 16, 1827, was graduated at Harvard in 1846, and went to India as supercargo in 1849, remaining there about two years; later he went to Europe, where he

¹ Vol. 14, part 5, p. 299, Sept., 1892.

spent two years, and was again on the Continent from 1867 to 1873. From 1862 to 1868 he was editor of the *North American Review*; in 1874 he became professor of history and art at Harvard University, and served in that capacity until 1898, when he resigned and became professor emeritus. Professor Norton was largely instrumental in founding the Archaeological Institute of America, and became its first president, an office which he held until 1890. He manifested particular interest in the excavation of Assos in Asia Minor, and in the founding of the American School of Classical Studies at Athens; but although the important investigations by Bandelier in the Pueblo country of our Southwest were conducted during Professor Norton's presidency, his belief was that because the arts of the American aborigines are not comparable with those of the peoples of the Old World, American archeology is not worthy of serious study. Professor Norton was the author of *Considerations on Some Recent Social Theories*; *Historical Studies of Church Building in the Middle Ages*, and *Notes of Travel and Study in Italy*. While the chief subjects of his study were Dante, and Greek and Italian art, he edited the letters of Lowell, of Carlyle and Emerson, of Goethe and Carlyle, and of Ruskin, and the *Writings of George William Curtis*. Honorary degrees were conferred on him by Cambridge and Oxford, Columbia, Harvard, and Yale.

F. W. H.

Prof. Frederick Starr, of the University of Chicago, has returned from a seven months' trip to the Philippine islands, whither he went at the invitation of the Insular Government to give instruction in anthropology and ethnology at the annual Teachers' Assembly, held at Baguio, the summer capital, from April 18 to May 15. In connection with that work, Professor Starr conducted, at the Assembly, an Anthropological Conference, devoted to questions relative to the Malay race, extending through three days—probably the first ever held in Malaysia. On the completion of his assembly work, Professor Starr traveled widely in the islands, visiting many of the more interesting of the native populations. Among these were the Negritos (Aetas), Benguet Igorot, Bontoc Igorot, Ifugao, Moro of various groups, and Bagabo. He also visited and made observations on several of the civilized and Christian peoples, as the Ilocano, Pangasinan, and Tagalo. He collected a considerable mass of ethnographic material and made many observations of interest. In making a general survey of the field of Philippine ethnology, Professor Starr was anxious to learn what opportunity exists for the sending of well-equipped students into the area to conduct serious original investigations. Professor Starr's

personal interest was largely in the political and social conditions in the islands. During his absence in the Philippines, the French Government conferred upon Professor Starr the *Palme d'officier de l'Instruction publique*. This is the third recognition that he has received from foreign governments. In 1900 the Netherlands gave him the Museums Medal, and in February of this year the Congo Free State bestowed on him the cross of an officer of the Order of Leopold II.

John Henry Wright died at Cambridge, November 26, 1908. The son of a missionary to Persia, he was born at Urumyah, February 4, 1852, and was educated at College Hill, Poughkeepsie, and at Dartmouth and Leipzig, at the latter university being a student of classical philology and Sanskrit in 1876-78. Professor Wright was assistant professor of ancient languages in the Ohio Agricultural and Mechanical College, 1873-76; associate professor of Greek at Dartmouth, 1878-86; professor of classical philology at Johns Hopkins, 1886-87, and professor in the American School of Classical Studies at Athens, 1906-07. He was editor of the *American Journal of Archaeology*, 1897-1906, and of other magazines and books devoted to classical subjects. He was also a member of the Archaeological Institute of America and president of its Boston Society at the time of his death; a fellow of the American Academy of Arts and Sciences; a member of the American Philological Association, serving as its president in 1894; and a member of the American Anthropological Association, to which he rendered valued service as a member of its committee on archeological nomenclature.

THE Department of Archeology, Phillips Academy, Andover, Mass., has announced the following free lectures for the present season:

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| Oct. 27. | Games of the American Indians. | Warren K. Moorehead |
| Nov. 17. | Five American Nations: Conquerors of the Snow, Forest, Mist, Desert, and Plains. | Harlan I. Smith |
| Dec. 8. | The White Races. | Charles Peabody |
| Jan. 12. | The Metal Ages. | Charles Peabody |
| Jan. 26. | Lewis and Clark Expedition to the Head of the Columbia. | Warren K. Moorehead |
| Feb. 9. | Lewis and Clark Expedition to the Pacific. | Warren K. Moorehead |
| Feb. 23. | Caves at Home and Abroad. | Charles Peabody |
| Mar. 9. | Social Life of the American Indians. | Warren K. Moorehead |
| Mar. 23. | Lake Dwellings and the Bronze and Iron Cultures. | Charles Peabody |
| Apr. 13. | Origin, Accomplishments, and Destiny of the American Indians. | Warren K. Moorehead |

THE DEGREE of Doctor of Philosophy in Anthropology was conferred for the first time at the University of California in May, 1908. The recipient, S. A. Barrett, presented as his thesis *Pomo Indian Basketry*, a study containing the results of field work extending over a number of years. Mr Barrett received the degree of B.S. at the University of California in 1905, and of M.S. in 1909. He spent the academic year 1907-08 in the study of anthropology at Columbia University. In 1906 he was appointed museum assistant in the department of anthropology of the University of California. At the present time he is in South America under the auspices of the Heye Expedition.

THE DEPARTMENT OF ARCHEOLOGY of Phillips Academy, Andover, Mass., announces that the publication of Mr Warren K. Moorehead's work, *The Stone Age*, is now assured. It will be issued in two volumes, of about one thousand pages, with many illustrations, and is designed to be "an archeological encyclopedia of the implements, ornaments, weapons, utensils, etc., of the prehistoric tribes of the United States." The volumes will be published by Houghton, Mifflin & Company, of Boston and New York, and will be sold to subscribers at cost, five dollars.

It will be of interest to ethnologists, who already realize how rapidly are passing away the older members of our Indian tribes, to learn of the death, on December 5, near Stidham, Oklahoma, of Rolly McIntosh, former chief of the Creek Nation, aged seventy-six years; and also of the death of Hump, a former leading Sioux warrior, at his camp at Cherry Creek, South Dakota, followed shortly afterward (December 16) by the demise of the celebrated American Horse, at Pine Ridge agency.

It is announced that the collection of implements of the Bronze Age, formed by Canon William Greenwell, of Durham, England, will be presented to the British Museum. This collection of implements of the Bronze Age is regarded as the most extensive of its kind in private hands, and is said to compare well in many respects with that already in the British Museum. It includes specimens from nearly all parts of Great Britain and other countries of Europe, and also from Asia.

DR ARTHUR J. EVANS, F.R.S., who resigned the keepership of the Ashmolean Museum of Oxford University at the close of the year, has given to the Museum the collection of Anglo-Saxon jewelry and other relics bequeathed to him by his father, the late Sir John Evans. With it is also a comparative series illustrating the early Teutonic art of the Continent, including specimens of Scandinavian, Frankish, Lombard, and Gothic work.

ACCORDING to the *Bulletin Périodique du Comptoir Ethnographique de Belgique*, Dr Blackmore, of Salisbury, England, has given to that city a fine museum building in which have been installed his splendid eolithic and paleolithic collections. The same publication states that a new archeological society, called the East Anglian Society of Prehistorians, has been founded at Norwich (Norfolk). Dr Allen Sturge is its first president.

WE learn from *Nature* that Mr N. W. Thomas has been selected by the Secretary of State for the Colonies to conduct an investigation into the laws and customs of the native tribes of southern Nigeria. The tribes to be studied are, in the first instance, those of the old kingdom of Benin, but it is probable that the inquiry will be continued and include the natives of the other West African colonies.

MR WILLIAM H. HOLMES, chief of the Bureau of American Ethnology, has been elected president of the American Anthropological Association and vice-president for Section H (Anthropology and Psychology) of the American Association for the Advancement of Science for 1909. Dr George Grant MacCurdy, of Yale University, has been elected secretary of Section H.

THE annual meeting of the American Anthropological Association was held in Baltimore, December 28 to January 2, in affiliation with Section H of the American Association for the Advancement of Science and the American Folk-lore Society. A full report of the proceedings of the meeting will appear in the next issue of this journal.

WE regret to record the death, at Paris, on November 18, in his sixty-seventh year, of Dr Theodore-Jules-Ernest Hamy, honorary director of the Musée d'Ethnographie; president of the Société des Américanistes of Paris, ex-president of the Société d'Anthropologie, and a member of many other learned bodies.

DR J. W. LOWBER, F.R.G.S., F.R.A.S., of Austin, Texas, has been granted the diploma of fellow of the Royal Scottish Geographical Society. Dr Lowber is a member of the American Anthropological Association and a fellow of the American Association for the Advancement of Science.

MRS FREDERICK F. THOMPSON has given to the New York State Museum as a memorial of her father, former Governor Myron H. Clark, the sum of fifteen thousand dollars for a representation of the culture of the Six Nations of New York, to be known as the Clark Museum of Iroquois Culture.

DR ALBERT ERNEST JENKS, professor of anthropology in the University of Minnesota, was the representative of the American Museum of Natural History, New York City, at the inauguration of Dr Hill as president of the University of Missouri, December 10 and 11.

PROF. WILLIAM Z. RIPLEY, of the department of economics of Harvard University, delivered on November 13 the annual Huxley lecture before the Royal Anthropological Institute. His subject was "The European Inhabitants of the United States."

DR PERCY GARDNER, professor of archeology at Oxford, and Dr Barclay Vincent Head, sometime keeper of the department of coins and medals in the British Museum, have been elected corresponding members of the Prussian Academy of Sciences.

THE next Prehistoric Congress of France will be held at Beauvais during the summer of 1909. The Belgian Congress of Archeology will hold its session at Liège from July 31 to August 5.

MR WARREN K. MOOREHEAD of Phillips Academy, Andover, Mass., has been appointed by President Roosevelt a member of the United States Board of Indian Commissioners.

AT a meeting of the American Antiquarian Society held at Worcester, October 21, Professor Otis T. Mason and Mr F. W. Hodge, of Washington, were elected to membership.

THE *American Antiquarian and Oriental Journal* will henceforth be published at Salem, Massachusetts, instead of in Chicago. Rev. Stephen D. Peet will continue as editor.

THE Anthropological Society of Stockholm has elected Dr Sven Hedin to honorary membership in the Society, and has conferred on him a Wahlberg gold medal.

THE council of the University College, Bristol, England, has appointed Dr John Beddoe, F.R.S., honorary professor of anthropology.

THE Broca prize for 1908 has been awarded by the Anthropological Society of Paris, to Dr Paul Rivet.

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