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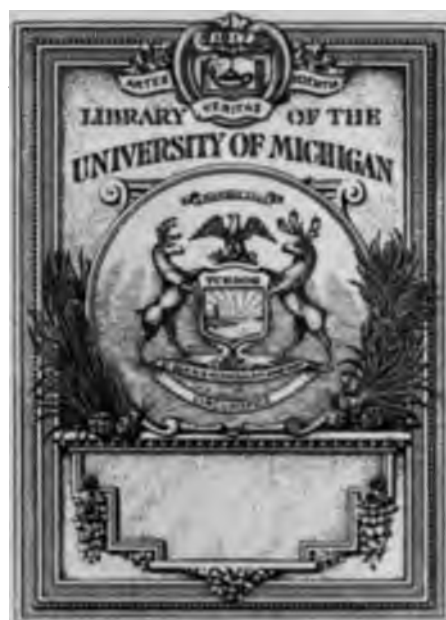
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and not so near the north pole. So far as science is at present concerned, either view is attended with difficulties.

If man existed in pre-glacial times, it remains uncertain whether the climate was that of the torrid zone, and the conditions were such as now exist in that zone, or like the arctic and the conditions were such as might prevail in the arctic regions. It is also a question whether man could have endured the climate, from which ferocious and hardy animals fled, and which changed the "fauna" of Europe from animals now found only in Africa, such as the hippopotamus, the rhinoceros, and the hyena, to the reindeer, the seal and the other arctic animals.

I. Our first inquiry is concerning the abodes of man during this glacial age. The theory is common that paleolithic man made his appearance at this time, that remains of fire and feasts are found in the gravels and in the caves, and that the paleolithic cultus was now introduced, and was as distinct as that of the neolithic, iron or bronze ages. This, however, has been recently questioned. There are those who even maintain that this age is a myth, that the so-called paleolithic relics discovered in America give no indication that a paleolithic cultus ever prevailed here. The theory that they were "accidental fractures" or natural formations has also been revived. It is said that pressure upon the surface of gravel roads will leave the underlying stone fractured into shapes resembling paleolithics, and so it may be that during the ice age many of these rude relics were formed, and are "accidents" rather than man's workmanship. The drift beds enclosing the implements and animal remains are formed of layers of sand, gravel and loam, which extend along the river valleys, which reach sometimes in Europe to a height of several hundred feet. They were not deposited by the sea, but by rivers, which were much wider, deeper and more rapid than at present. The melting of the accumulated masses of ice and snow caused the rivers to rise and flood extensive portions of country and spread the debris and boulders and the remains of animals beyond their channels. The deepening of the channels was the result of the drainage, as the ice receded and gravels were left on the terraces. The supposition of some is that it was during the closing scenes of the glacial age that man appeared; and that, unlike the brute creatures, he was capable of erecting habitations for himself, and built these amid the ice fields. His mechanical skill began to be developed in the rude architecture as well as art of the period. Others hold that architecture was longer delayed, that there were no habitations until late in the neolithic age. Caves were man's first abodes. He afterwards erected his rude huts by the side of the sea and threw around them the refuse which made the kitchen middens. He next resorted to the lakes and built houses on platforms, making the lake-dwellings which are now so celebrated. He

then built upon the high land and began to erect the "barrows," or chambered tombs, in imitation of the abodes of the living. The next stage was marked by the megalithic monuments. In the meantime his art passed from the neolithic to the bronze and to the iron age, and its cultus made corresponding advance. It is maintained that the architecture of historic countries grew out of prehistoric beginnings, since the cave tombs, the conical "treasure houses," the topes, the temples and earliest structures of historic lands contained the same features found in the caves, barrows, lake-dwellings and megalithic monuments. Some ascribe them all to the Turanian race, the same race that erected the earliest structures in Central Asia. Others say that there were three distinct races—preglacial, post-glacial and historic.

Under these circumstances we are at liberty to form our own opinion as to the abodes. We may picture man as a savage and compare him with the so-called "Littoral people," who dwelt on the edge of the "ice sheet"; to the fishermen who dwelt in the South Seas, or to any people who are found in a primitive state. The flint tools of antique type, were not unlike those used by the natives of Australia. Possibly the paleolithic people were like the Australians. The stone implements used by the Shoshones of Wyoming are not so well made as those found in the drift gravels. Rudeness of workmanship is then no evidence of antiquity, though it may help us to understand the cultus. We may, perhaps, acknowledge two horizons, the earlier and the later, and say that the morning and evening are alike, and yet this does not quite satisfy us, for the animals, the scenery and the surroundings are very different. The sections which were laid open in the "gravel beds" of the Amiens, twenty-five feet deep, revealed the bones of quadrupeds, such as the elephant, rhinoceros, bear and hyena. But this "horizon" is very different from the one contained in the valley of the Delaware, where rude relics are found at varying depths. We do not learn from either of these sources what the earliest abode of man was. In the valley of the Somme, where flint relics were found, there were "peat beds" from twenty to thirty feet in depth, and the relics were like those found near the lake-dwellings, with the remains of animals resembling those now inhabiting Europe. This enables us to fix upon the date and cultus of the "peat beds", but not that of the "gravel beds". Some have imagined that the houses were like those of the Eskimos, constructed of ice or the bones of extinct animals. But the carved relics of the Eskimos show a cultus far in advance of the paleolithic age. We can not show that the Eskimos were ever a paleolithic people. We have no means of determining what the habitations of man were during this early period. There are human beings who burrow in the ground and protect themselves in that way; others shelter themselves from the wind by throwing up a "brush screen."

three periods of cave-dwelling. The first corresponds to that which has already been spoken of as belonging to the period of the gravel beds, and perhaps contemporaneous with it, for the same kind of animals are associated with human remains. The second period was that which was marked by the presence of the reindeer, and by delineations of the mastodon, the bison, the aurochs and other wild animals. The third by the presence of the bones of recent animals and many relics of a neolithic type. The overlapping of the earliest cave period and the period of the "gravel beds" is one of the plainest facts of science. In this period, however, the osseous remains of bears, wolves, foxes, gluttons, stags, mammoths and hyenas are accounted for by the supposition that they were washed into the caves by floods during the higher levels of the water courses, and the increased swiftness of the streams having availed to carry into these caves all of these bones and to cover them with a deposit of pebbles and mud.

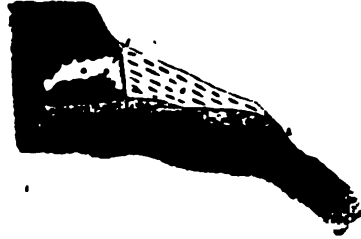


Fig. 3.—The Cave at Aurignac.

To illustrate: In the Cave at Gailenreuth were the remains of eight hundred cave-bears. Dr. Buckland calculated that there were fifty-five hundred animals of the same species entombed there. There are many caves in which a crust of stalagmite has covered a large amount of bone earth. This bone-earth is sometimes stratified and rests upon a basis of pebbles, which differ from the rocks in the neighborhood, and were evidently brought from distant places.

In general, the bones are scattered indiscriminately through the earth, and some of them are fresh looking, as if they had been introduced into the cave when covered with flesh.



Fig. 4.—Pebble Trench.

Others exhibit marks of having been drifted in by water. Rolled stones often underlie the bone-earth. It must, therefore, be assumed that the bone caves owe their deposits in a great measure to the agency of water.

It might be suggested that the bones were deposited in the caves near the close of the glacial period by the very same strong currents which swept the gravels along the river valleys and buried the carcasses of the extinct animals, and that during the glacial age neither the gravels or caves were inhabited by man. This would show that the first abodes of man actually date with the post glacial age, though the character of the man

is not revealed. This must be learned from the contents of the caves. The question would be whether the animals were like those which are now found in the frozen mud of Siberia, or were they similar to the tropical animals? Were all of the animals, such as the rhinoceros, hippopotamus, cave-bear, hyena, mammoth and mastodon, covered with hair and fitted to endure an Arctic climate?

Dr. Schmerling devoted many years to the examination of caves in the valley of the Meuse. He explored about forty caves and found in them the remains of the cave-bear, hyena, rhinoceros, reindeer, red deer, wild cat, wild boar, horse, fox and wolf. He found human bones in only three or four of the caves. He found, however, the Engis skull imbedded five feet deep in a breccia, associated with the remains of the rhinoceros, reindeer and horse—some of them ancient and some modern. This was in 1833. Dr. Fuhlrott found the Neanderthal skull in 1857, in a small grotto near Dusseldorf, Prussia. Fig. 2. This grotto was situated about sixty feet above the bed of the river Dussel. It

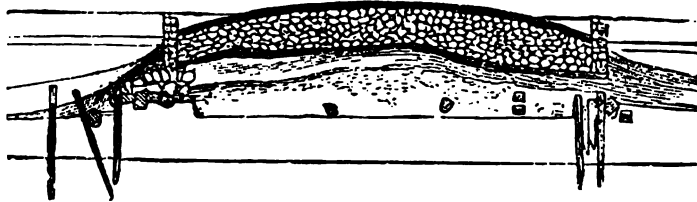


Fig. 5.—The Crannogs of Ireland.

was found by a man who unceremoniously threw it out, but Dr. Fuhlrott rescued the upper part of the skull and a part of the skeleton. There were no extinct animals in the grotto, though the bones of the mammoth and cave-bear were found in neighboring districts. This skull is pronounced the most ape-like of any human crania yet discovered. The Engis skull was likewise fragmentary. Dr. Huxley says there is no mark of degradation in any part of its structure; it is a fair average human skull and may belong to a philosopher or a savage. The body of the Neanderthal man was very heavy, thick set and short. The Engis skull was deposited in bone breccia five feet below the surface and was probably a savage later than the Neanderthal man. The cave which contained this skull has been quarried away, though other caves have been found in the same vicinity and very remarkable skulls have been exhumed. The man of Spy has been described by Max Lohest. There were three layers of ossiferous beds in the grotto of Spy. In the upper layer were the bones of the mammoth, bear and deer, flint scrapers, points, blades and knives of Mousterien type, also delicate thin relics notched like saws. Under the stalagmite was a layer of the bones of the rhinoceros, reindeer, mammoth, cave-

bear, hyena, cave-lion and horse, deer, wolf, dog, sheep, cat and pig. Numerous hearths were found in this layer, implements of ivory, chalcedony, opal, also 140 Mousterien points and fragments of pottery. In the third layer, along with the bones of extinct animals, were two skulls, both very thick, with prominent eye brows, retreating foreheads, heavy jaws, large orbits—points characteristic of the Neanderthal, Constadt and Naulette skull. There was an abundance of flint implements, which differed from those in the upper layers. This discovery would indicate that the caves were occupied, at this earlier period, by a distinct race. Still the skulls of this class have



Fig. 6.—Standing Stones.

all been discovered in a certain district, in the Meuse. It is uncertain whether the race was distributed over the continent.

Kent's cavern, near Torquay, England, was discovered by Rev. J. McHenry, in 1840, and explored by Mr. Pengelly in 1864. It contained a layer of stalagmite. First, or lowest down, was the "breccia" and the bones of the cave-bear. Next, the old stalagmite floor, covered with mud and stones. Next was the cave earth, four feet in thickness, and containing the bones of the elephant, rhinoceros and the hyena; also weapons of chipped flint and bodkins of bone and needles and harpoons. Near the top was a layer of burnt wood, with remains which indicated cooking of animal food. The cave was covered with a second crust of stalagmite. The next bed contained bones of modern animals. Sir William Dawson says the animals found in Kent's



Fig. 7.—Lake District.

cave are all of them post-glacial. They inhabited the country after it arose from its great glacial submergence. The evidence is that the cave was inhabited by man, perhaps even at the time of extinct animals. It was occasionally used as a place of refuge up to the time of the Roman conquest. The record covers

a long period of time, though how long is uncertain. The arrow-heads found in this cave are significant. They prove the use of the bow and show that the cave-dwellers were hunters as well as fishermen. Still, the horizons of the caves are so near together that we are very liable to confound the latter with the earlier cultus and to say that the earliest tokens present evidences of fixed abodes, whereas they may have been the result of floods which swept into the caves.

In 1872 the Cave of Mentone, near Nice, France, overlooking the Mediterranean, was explored and the skeleton of a man was

found imbedded twenty feet below the surface. A chaplet of shell beads, and perforated teeth of the stag, covered the skull, a bone implement was upon the forehead and two spear-heads were below the head. The remains of the urus, the cave-bear, cave hyena, were found in the deposits above the skull. The following year (1873) three additional skeletons, with pierced sea shells and teeth for a head-dress, and a necklace and bracelets of shells and teeth were found, also implements of bone and stone, made of limestone and sandstone, chipped but not ground.

These caves, whether in the north of Europe or in England, or in the south of France, may have been used as habitations,



STONES OF STENNES, ORKNEY.

or they may have served as burial places soon after the floods had ceased to sweep into them and deposit the bones of extinct animals, though they furnish very little evidence as to the condition of man during the so-called paleolithic age. They show little skill in architecture or art until after the introduction of the neolithic age.

The cave at Aurignac illustrates this point. This cave, which is situated at the foot of the Pyrenees, contained within the grotto seventeen skeletons, but at the opening was a slab of rock which closed the vault. See Fig. 3. Outside of the cave was a deposit of ashes and charcoal, hearth-stones and works of art, with the bones of extinct animals, but no human bones. The record, if interpreted, would be that it was a sepulchral vault, but at the portal of the tomb funeral feasts had been held. Among the funeral gifts were weapons wherewith to chase the gigantic deer,

cave-lion, cave-bear, and woolly rhinoceros, and yet in connection with these ashes were knives, sling-stones, flint cores, flint flakes, and a chunky stone, tools made of reindeer horn, and a bodkin, and within the grotto was a tusk carved in imitation of a bird. Here, then, we have a new record. We have succeeded in tracing back the sacred rites of burial to an early date. We have seen the existence of totemism in the carved birds. We find the use of fire and funeral feasts, and yet all these which seem so modern are in close contact with the bones of nearly all the extinct species, cave-lion, hyena, Siberian rhinoceros, gigantic deer and mammoth cave-bear, and reindeer, as well as the brown



ROCK OF MOU-A, HETLAND.

bear, wolf, fox, wild-cat, horse, ass and pig. No one can doubt that this cave was occupied through many periods of time, though it is a question whether the earliest cave dwellers were contemporaneous with extinct animals.

This cave and its contents lead us to that remarkable series of caves and rock shelters which are near Vézère, in the south of France, which have yielded so many works of art. These have been described by Mr. Thomas Wilson and a name been given each by him. They are as follows:—La Moustère, La Madeleine, Langerie Haute, Langerie Basse, Grotte d'Enlène, Les Eyzies and Cro-Magnon. Dr. Wilson divides the cave period into three or four epochs. The first he calls the Chellean, and says "that it is purely paleolithic." The second Mousterian, the third Solutren, and the fourth Magdalenian. Dr. Charles Rau has also described the relics from these caves and has shown

pared them to the relics from the caves of Switzerland. We may learn from both these writers about the changes which went on during the time that caves were used as abodes. The Chellean implements are as rude as those of St. Acheul, but the Solutrien relics are as far advanced as those of the lake-dwellings.

An excellent description of the cave-dwelling period is one given by Martin Conway.* Without undertaking to specify the localities or the particular caves, he furnishes a description of the cultus that prevailed. It includes not only art but the religion, tribal customs and other peculiarities of the cave-dwellers. Their delineations of animals upon the fragments of reindeer horn, tusks of ivory and walrus' teeth have been often spoken of. Among the animals is the hairy mammoth, possibly a pair of them, a reindeer, a squatting stag, two running reindeers, two aurochs, two horses' heads, two fishes and a horse and a human

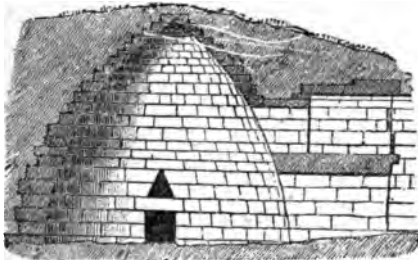


Fig. 10.—*Treasure House of Atreus.*

figure and various animals carved in the round. Among the industrial tools were lances, harpoons, arrows, needles of reindeer horn, pierced fossil shells and wolf's teeth from La Madelaine; also knives, borers, arrow-heads, whistles from Laugerie Basse, bone awls, scrapers, plates of ivory

from Cro Magnon, a browsing reindeer from Thayngen cave, Switzerland, and an implement from the jaws of a cave-bear from Hohlefels cave, Wurtemberg.

Here, then, we have a picture of the cultus of the cave-dwellers which may be compared to that of the early lake dwellers, but which exceeded the cultus of the kitchen middens, thus showing that the caves may have been occupied through three periods of time.

The savage tribes clothed themselves in skins or fur. Shells and stones were brought from a distance, which shows that there was a rudimentary commerce among the people. They had no domestic animals, made no pottery, and did not cultivate the ground. They hunted the wild horse, the reindeer and the urus. They lived near the mouth of caves and perhaps in skin tents. They occupied their leisure in engraving with wonderful fidelity and skill the likeness of animals in the chase. Among them the mammoth, the seal, the cave-bear and the ibex. They represented the human figure accompanied with animals. There was an extraordinary delicacy in some of their drawings. There is a tiny likeness of a reindeer's head scratched upon the frail bone

*Dawn of Art, Rau's Early Age of Man, Dowker's Cave Dwellers.

of a bird, which, when examined through a magnifying glass, is surprising in its workmanship. They also sculptured in the round. Portions of a statuette of a urus, the head of a horse, the handle of a dagger carved in the likeness of a reindeer, are notable examples. These exhibit the freedom and certainty of an artist's hand, the natural gift trained by close observation, but there are no traces of a preliminary stage of development to this art.

Totemism was a prominent factor in the religion of that period. It is probable that the animals depicted were the totems of the Cave-dwellers. It was religion that ruled the art of the period. This may account for its perfection. Totemism implies tribal organization and subdivision, for it springs from the belief in the intimate and special relation of the class which bears the particular animal as its totem. The tribal organization is not one of mere descent, but one that depends upon the religious sentiment as the relationship of the clan extends beyond the tribe to which the clan belongs, and embraces all the clans of other tribes which bear the same totem.

III. Burial customs in prehistoric times are worthy of study. The final resting places furnish us hints as to the architecture which prevailed. The posture chosen was often that of sleep, the body lying on its side, with the arms crossed and the knees drawn up to the chin; the whole was covered with a quantity of red powder. This custom was common among certain hunter tribes in America, though most of the bodies which are covered with red ochre are in a recumbent attitude. The habit of un-fleshing the skeleton was also common in America, as well as in Europe. The paleolithic folk also buried treasures with the bones of their dead. They kept the bones within the precincts of the abodes of the deceased. This was owing to their religious belief. The temporary separation of the body from its double required that the bones should be laid in the cave or dwelling in which he had lived, or in a barrow or tomb built in the semblance of it. The implements, weapons and ornaments were buried with the body, sometimes broken in order that the ghosts might be set free, for the use of the ghost or spirit which always hovered near. We find traces of this belief in ghosts prevailing throughout the world. It is as common in the New as in the Old World and was prevalent among the uncivilized races everywhere.

The use of fire was, perhaps, common among the cave-dwellers. At the Brussels Congress it was stated that in one of the Keggio caves human bones were found mixed with those of animals, and both showed traces of having been burned, though these are supposed to be neolithic. At Solutre, Mayence and Corsica, large slabs of stone laid flat and covered with heaps of cinders, which formed the family hearth, have

been seen. The baking of pottery is proof that the use of fire was known in remote times, but pottery is generally regarded a true sign of the neolithic civilization, and is denied as belonging to the paleolithic. Cannibalism is supposed to have prevailed in this period. In the Pyrenees and the caves of Lourdes and Gourdan human bones have been found mixed with cinders and ashes upon the hearth. Excavations at St. Giron have brought to light a hearth covered with a layer of stalagmite and numerous fragments of human bones. Caves in Portugal contained human bones split lengthwise. This custom prevailed as much in the neolithic as in the paleolithic. The cave-dwellers have been compared to the Eskimos, as the bone carving is very similar. The "reindeer period" is illustrated by this means, but no skulls like those of the Eskimos have been found in the caves of Europe. This overthrows the theory that the Eskimos are the descendats of the cave-dwellers.

The picture of the condition of man during the cave-dwelling period is a varying one. It is in reality a moving panorama and exhibits to us the progress of mankind from a low condition up to an advanced stage. There was probably a change in the climatic conditions. The fauna became more like that which now prevails in some regions. The primeval forests began to appear. The huntsman followed animals, some of which have survived into the present age. There was one type of horse which the people of Solutre, in France, slaughtered in great numbers. The bones of 40,000 horses were found in rubbish heaps. This kind of horse became rare and disappeared, for there was at the commencement of the neolithic age, no horse in Western Europe. In Europe the three epochs were marked by three different animals. The earliest by the mastodon, the second by the reindeer and the last by the wild horse.

The question now arises whether historic tombs can be traced back through prehistoric times, so as to make a succession from the cave period, or the paleolithic period, up to the historic. In answer to this question it may be repeated that the European archæologists have recognized a series of tokens which begin with the very beginning of the neolithic age and go through the bronze age, to the very beginning of the iron age, making subdivisions or epochs to the prehistoric period. They are as follows: 1. Kitchen middens. 2. The lake-dwellings. 3. The barrows. 4. The cromlechs and dolmens. 5. The standing stones, menhirs and alignments. 6. The earth circles, with enclosed triliths and standing stones. 7. The pit-houses, towers and circular buildings. This is the list, though it does not indicate the order of time, for on this point there is a great variety of opinion. It will be noticed that of the series four or five were used for the abodes of the living. They were as follows: The kitchen middens, the lake-dwellings, the earth circles, the pit-

houses, possibly the alignments. The following were used for tombs, the barrows, both stratified and chambered, the dolmens and cromlechs, and occasionally a small earth circle. None of these pre-historic structures belong to the paleolithic age. Paleolithic relics are not found in or near any of them, except in the lowest layer of the kitchen-middens, nor have the structures ever been found in the gravel beds, or associated with any ancient animals.*

There was a wide gap between the paleolithic age and the neolithic, which has never been filled or even bridged. The pre-historic structures, such as we have mentioned, are all on the neolithic side, no structure whatever on the paleolith. This, at times, brings doubt whether there was any such thing as a paleolithic age, and make it a serious question whether the paleolithic cultus will ever be ascertained. The discovery of rude relics on the desert hills, several miles from the Nile, by Flinders Petrie, and of flints, near Thebes, in the Valley of the Nile, by Gen. Pitt Rivers, may prove the existence of man in Egypt before the time of the pyramids; but they do not reveal the date of his appearance, nor the manner of his living, nor the character of his abodes. These rude relics, which are now under discussion, have been found in the gravels of the Delaware and of the Ohio. They may prove to be human fabrications. If so, they will furnish the data for the geologist to study. One of the questions which will come up before him, is the time of the first appearance of man. The natural history of man has not been recorded by any fossils. All the evidence there is, is that furnished by these rude relics and a few human bones which have been discovered. What record is there more?

There are no houses or hearths, no pottery vessels, no domestic tools, no evidences of permanent abode. If there are any traces of fire, they are so scattered and so mingled with tokens of a later age that they are very uncertain data for the archæologist, and are useful for the geologist for only that one question.

We go over the whole pre-historic period and find the stone age, the copper age, the bronze age, filled with the structures which not only betoken the presence of man, but speak volumes concerning his habits and customs and modes of life, his religious notions, his art forms, his architectural devices. We ask whether the advocates of the so-called paleolithic age have not been building too much on an uncertain foundation. It seems to be largely conjecture whether man who contended with the extinct animals had any home. The skulls of the Neanderthal man and the man of Spy and the Cro-magnon man may be ever so low in their character, yet they reveal nothing as to the char-

*There are megalithic monuments and "pit-houses" in India and Japan which resemble those in Great Britain. There are no such monuments in America. For this reason some would ascribe the "barrows" to the Turanian race, but the megalithic monuments to the Aryan race.

acter of their abodes. They came from the caves and not from the gravels. The bodies which have been found lately in the cave at Mentone signify nomore than do the few arrow-heads which are said to have been found in connection with the bones of the cave hyena and cave bear, in a large cave in the Ozark Mountains. The arrow-heads would show that this last cave belongs to the neolithic age. Tombs are confined to the neolithic age; there are no tombs in the paleolithic age. From these, as well as the caves, we may ascertain the date of the earliest abodes. Some of the tombs indicate that the circular hut was the earliest abode, thus confirming the story of the kitchen-middens; others, however, are in the shape of deep earth caves, covered with various structures, pyramids, topes, treasure-houses, adoratorios, temples, tents. The sense of sacredness surrounds the house throughout the entire prehistoric age, and these temple tombs are only perpetuating the shape. The passage tombs have been quoted as proving that man lived during the ice age and constructed houses like the ice huts of the Eskimos.

The Igloo of the Eskimos and the Yourtz of Siberia are furnished with passage-ways. They seem to be peculiar to the Hyperboreans. The passage tombs of Europe may perpetuate the style of house which prevailed during the time of the reindeer, but it is noticeable that they were occupied by a race which differs from the so-called troglodyte, who by some are ascribed to the paleolithic age. We are not carried by any of those back of the neolithic age, and will find it useless to make the relics, which have been so thoroughly studied by the archæologists, the basis for a theory as to the houses. The cultus which prevailed during neolithic times is to be learned from the caves and the tombs. From these we learn the character of the earliest abodes of man; but we know nothing of his abodes in the paleolithic age.

MAN AND LANGUAGE;
OR, THE TRUE BASIS OF ANTHROPOLOGY.

BY HORATIO HALE, M. A., F. R. S. C.

[The following essay first appeared in the Transactions of the Royal Society of Canada for 1891, under the title of "Language as a Test of Mental Capacity," and was therein further described as "an attempt to demonstrate the true basis of anthropology." The paper attracted considerable attention among scientific men in different countries, and was reviewed by very eminent writers with favorable comments and some friendly criticisms in such periodicals as "Nature," "L'Anthropologie" and the North American Review. It had the honor of being reprinted in the Journal of the Anthropological Institute of Great Britain and Ireland. A desire has been expressed in various quarters that it should be republished also in this country, in some medium more generally accessible than that in which it originally appeared. In the present new addition, as it may be styled, an attempt has been made to meet the objections of the courteous critics above referred to, as well as to correct a few errors and apply some deficiencies that have been noticed in the course of the revision.]

I.—LANGUAGE A NATURAL FACULTY OF PRIMITIVE MAN.

As man is beyond question the highest being in animated nature, it might reasonably be supposed that anthropology, "the science of man," would rank highest among the natural sciences. Not only, however, has that prerogative not been conceded to this science, but the curious fact must be recorded that only within the last decade has even an equality with the other sciences been at last, very slowly and grudgingly, allowed to it.* This recent acknowledgment has been mainly due to two scientific developments, as they may be styled, both of the first importance. The earliest of these was the establishment of the fact, ascertained through the researches of Boucher de Perthes and his followers, of the great and hitherto unsuspected antiquity of man upon the earth. The other was the acceptance by the large majority of naturalists of the doctrine of evolution, as applicable to the human species, along with all other parts of the creation.

The reason why scientific men in general have hesitated so long, and still hesitate, to accord to anthropology its true position among the sciences, is one which must be said to do them no discredit. They have had what must be deemed a natural and reasonable feeling that this branch of science, as commonly studied, has no title to the special rank claimed for it. If man is merely an ordinary animal, and is not separated from other animals by a line as distinct as that which separates a tree from a stone, or a stone from a star, why should he claim a whole

*It was not until the year 1882 that in the American Association for the Advancement of Science, at its thirty-first annual meeting, anthropology was raised from the humble position of a "subsection," or mere department of another science, to the rank of a full "section." Two years later, a similar advance in dignity was accorded to the science in the British Association, at its fifty-third meeting.

main department of science to himself, and not be content with his modest "subsection" along with the birds, the insects, the vegetables, and the other members of the great biological section? It must be admitted that the chief authorities in this science during the last thirty years, whether evolutionists or opponents of evolution, have offered no satisfactory reply to this objection. The reason of their failure is evident enough. With very few exceptions these eminent men have deliberately put aside the teachings of comparative philology on this subject, and have had recourse solely to evidences drawn from physiology. Yet it is certain that the grand characteristic which distinguishes man from all other mundane beings is articulate speech. It is language alone which entitles anthropology to its claim to be deemed a distinct department of science. Until this truth is clearly understood, scientific men in general will have a right to look askance upon the pretensions of a so-called science which has no established laws, lays down no definite principles, and puts forth no conclusions which claim any higher assurance than that of plausible conjectures. If geology or biology were in the same position, who would venture to claim for them the distinction of true sciences?

The two main grounds on which are rested the claims of language to be deemed the true basis of anthropology are: first, its position as the only certain test of the affinities of races; and, secondly, its not less important position as the only sure test of the mental capacity of any race. The first of these grounds has been discussed in a former essay. In a paper read in 1887, at the meeting of the American Association for the Advancement of Science, under the title of "The True Basis of Ethnology," and published in the "Popular Science Monthly" for January, 1888, under the title of "Race and Language," I endeavored to bring together the evidence and authorities in support of the proposition that in language, and language alone, is to be found the true criterion of the genetic relationship of any two populations. It will be enough, perhaps, for the present to say that these arguments have been tersely and happily summed up by the most eminent of living philologists, Prof. Max Muller, who, in the third lecture of his recent publication, "Three Lectures on the Science of Language and its place in General Education," fully accepts this proposition, and confirms it by many illustrations and arguments.* I may add the practical example of my distinguished friend, Dr. D. G. Brinton, who in his admirable work, "The American Race," has deliberately put aside all other tests, and has based his classification of the tribes of this continent solely on the distinction of linguistic stocks. But in referring to this subject on the present occasion, my only object is

*"I agree with Mr. Horatio Hale that the most satisfactory, nay the only possible division of the human race is that which is based on language."—"Three Lectures," etc., p. 40.

to disclaim for myself any title to originality in the conclusions which have been thus powerfully sustained. These conclusions were derived from the writings of two American philologists of earlier days, Peter S. Duponceau and Albert Gallatin (both, indeed, of European birth—the one French and the other Swiss), who in their works laid the foundation of American ethnology; and their conclusions have been sustained by a very eminent authority, Theodore Waitz, once deemed, before the present physical school acquired its undue predominance, the chief of German anthropologists. The first volume of his great work, “*Anthropology of Primitive Races*,” was translated and published in London in 1863 for the Anthropological Society of that city, as the best existing introduction to the science for whose study the society was established. In this volume he lays down the proposition, and illustrates it with abundance of facts and arguments, that “the scientific method at present applied in comparative philology possesses a higher degree of authenticity, and offers better guarantees for its results, than the methods of physical anthropology and craniology.” He shows also the futility of the common objection that men may change their language, but not their physical appearance. As he points out, and as history confirms, no people ever yet changed its language until it had become so intimately mingled with another people as to receive from them, along with their language, a large infusion of their blood. The common—one might almost say the vulgar—instance on the other side is that of the negro, or rather the “negroid” populations of the southern United States and the West Indies. All these populations speak some language of Arvan origin, and on the principles of linguistic ethnology should be regarded as Aryans—which, say the objectors, they certainly are not. But this assertion simply betrays in those who make it an ignorance both of historical facts and of scientific principles. The name of Arvan originated in ancient Bactria and northern Hindostan. Some three or four thousand years ago a light-hued people, composed of wandering herdsmen, descended from the northwest, in Tartar-like hordes, upon the plains of northern India, then occupied by swarthy tribes, whose descendants are now known as “Dravidians” and “Kolarians.” These communities of Indian negroes, as far south as the Godavery river, were subdued, and in great part absorbed, by the invading bands. Other conquering hordes of the same light-hued race descended upon southern Europe, overpowered and assimilated its brown-skinned populations (probably of North African origin), received their southern color, and gave them their own northern language. If we give the name of Arvan to the dusky people of northern Hindostan and the brunette nations of southern Europe, why should we refuse it to the swarthy people of America, who speak languages of the same stock and have probably an equal infusion of Arvan blood?

It should be borne in mind that among the negroid communities in the United States and the West Indies very few individuals of pure African blood remain. There is probably not one in a hundred, certainly not one in ten, who has not some infusion of Aryan blood. In our scientific classification the Aryo-Dravidian nations of Hindostan and the Aryo-Iberian nations of southern and western Europe are all styled Aryans. Is there any good reason for refusing the same style to the Aryo-African inhabitants of America? The only reason (and that not a scientific one) is the sentiment that the negroid Africans stand on a lower intellectual grade than that of the negroid Dravidians or the swarthy Iberians. If such a prejudice exists, the surest way of dispelling it is by a study of the original languages of these races. It will appear that many of the African languages stand on at least as high a grade as that of the Iberian or Dravidian tongues. And this, it may be added, is not saying little, for the character of these tongues evinces a high intellectual capacity in the people who speak them.

We are thus brought to the main subject to which the present essay is devoted—the consideration of language as a test of mental capacity. And here it is just that a tribute should be paid to the candor and discernment evinced by Darwin in relation to this subject, a discernment which contrasts markedly with the blindness of some of his followers, who are physiologists and nothing else. The transcendent value of language in the intellectual equipment of the human species was clearly apparent to him. I quote the whole of the striking paragraph (section 73 of “The Descent of Man”) in which his views are set forth: “Man in the rudest state in which he now exists is the most dominant animal that has ever appeared on this earth. He has spread more widely than any other highly organized form; and all others have yielded before him. He manifestly owes this immense superiority to his intellectual faculties, to his social habits, which lead him to aid and defend his fellows, and to his corporeal structure. The supreme importance of these characters has been proved by the final arbitrament of the battle for life. Through his powers of intellect, articulate language has been evolved, and on this his wonderful advancement has mainly depended. As Mr. Chauncy Wright remarks: ‘A psychological analysis of the faculty of language shows that even the smallest proficiency in it might require more brain power than the greatest proficiency in any other direction.’ He has invented and is able to use various weapons, tools, traps, etc., with which he defends himself, kills or catches prey, and otherwise obtains food. He has made rafts or canoes for fishing or crossing over to neighboring fertile islands. He has discovered the art of making fire, by which hard and stringy roots can be rendered digestible, and poisonous roots or herbs innocuous. This discovery of fire, probably the greatest ever made by man,

excepting language, dates from before the dawn of history. These several inventions, by which man in the rudest state has become so pre-eminent, are the direct results of the development of his powers of observation, memory, curiosity, imagination and reason. I cannot, therefore, understand how it is that Mr. Wallace maintains that 'natural selection could only have endowed the savage with a brain a little superior to that of an ape.'"

To the views so eloquently and convincingly expressed, only one qualification seems to be required; but that is one of the greatest importance. Articulate language is spoken of as an acquired art, a "discovery of man." If the habit of walking upright was a discovery of man, then in the same sense we may doubtless accept the use of speech as his discovery. But from what we know of the bodily structure of the human species, we are sure that the first members of that species, however they may have come into existence, must, after passing the period of infancy, have assumed the upright position. And from our knowledge of the vocal organs and the brain of the human species, we may be equally sure that the first human beings who had passed beyond the infantile stage must have spoken to one another in articulate language. Furthermore, as we have every reason to believe that the first human beings were as tall, as strong, and as active as any of their descendants, so we have equally good reason to believe that the language which they spoke was as well constructed and as expressive as any language that is now spoken.

This assertion may at first thought seem startling, but I believe that the more carefully it is considered and discussed, the more clearly its reasonableness will be apparent. Fortunately, however, we are not reduced to mere analogical reasoning for evidences of its truth. This can be abundantly shown by an analysis of the languages spoken by those tribes of men who, in the opinion of all anthropologists, are now in the lowest stages of culture. If it shall appear that some of these languages are as well organized and as expressive as those of the most civilized nations, it will be evident that the capacity for speech, like the capacity for walking erect, has nothing to do with culture, and that, as I have elsewhere said, to talk of "barbarous languages" is as absurd as it would be to talk of barbarous complexions, barbarous hair, or barbarous lungs.

It is deserving of remark that for the materials of the study into which we are now about to enter, we shall be indebted almost entirely to the labors of missionaries. There can be little question that one reason why linguistic anthropology, which treats man as an intellectual and moral being, has of late years been superseded by physical anthropology, which treats him as a dumb brute, is that the pursuit of the latter science—if science it can be called—is so infinitely the easier. To measure hum:

bodies and human bones; to compute the comparative numbers of blue eyes and black eyes in any community; to determine whether the section of a human hair is circular, or oval, or oblong; to study and compare the habits of various tribes of man, as we would study and compare the habits of beavers and bees; these are tasks which are comparatively simple. But the patient toil and protracted mental exertion required to penetrate into the mysteries of a strange language (often without the aid of an interpreter), and to acquire a knowledge profound enough to afford the means of determining the intellectual endowments of the people who speak it, are such as very few men of science have been willing to undergo. Only in rare cases has a Lepsius among the Nubians, or a Washington Matthews among the Hidatsas and Navajos, been found equal to the task. Many have gathered vocabularies, which have been useful in determining the affiliations of races, but which, unfortunately, at the same time, through their necessary imperfections, have given rise to gross errors, such as the current opinions that the languages spoken by barbarous people are poor in expression, have few general or abstract terms, have no substantive verbs, and no real inflections. For the proofs which enable us to dispel these errors, and to disclose the true character of these languages and the capacity of the people who speak them, we are indebted mainly to the enlightened and indefatigable efforts of missionary zeal.

II.—AN AMERICAN EXAMPLE.—THE ATHAPASCANS, NORTH AND SOUTH.

One of the most remarkable products of this zeal is the huge folio volume of the Rev. Father E. Petitot, on the language of the "Dènè-Dindjié" Indians, published in 1876 by the distinguished explorer, M. Alphonse L. Pinart, in his valuable "Bibliothèque de Linguistique et d'Ethnographie Américaines," and representing the results of twenty years of labor in one of the most uninviting regions of the earth. The "Dènè-Dindjié" are the Indians known to American ethnologists as Athapascans (a name given to them by Gallatin in his well-known "Synopsis of the Indian Tribes"),—and later and more generally as the Tinné people. *Tinne, dene, dindjie* are three of the numerous dialectical forms which the word for "man" assumes in the numerous septs composing the northern branch of this great family, occupying the whole of that North American Siberia which spreads (south of the Eskimo) from Hudson Bay on the east to Alaska on the west, including also the northern interior of British Columbia and part of its sea-coast. It is a dreary region of rocks and marshes, of shallow lakes and treacherous rivers, offering no attractions except such as the hunter finds in the numerous fur-bearing animals which roam

over it and afford to the native tribes a precarious subsistence. When this resource fails, they live on lichens, which they gather from the rocks. Their dwellings are tents of skins, or rude huts made of the boughs of the stunted trees which here and there grow in the scanty soil. The people live in small scattered bands, with little of what can be called a social organization. M. Petitot depicts them with a strictly impartial pencil.

In bodily aspect, he tells us, they differ from the Eskimo, and resemble more nearly their southern neighbors, particularly the Sioux. They are tall and slender, with high but receding foreheads, wide cheek-bones, and prominent brows, beneath which the large eyes gleam with an ophidian lustre. The heavy upper eyelid, a little oblique, lends often to the glance something peculiarly suspicious and distrustful. The straight shining black hair descends in heavy locks over the eyes and shoulders. The color varies, but though clear, is never so white as that of Europeans, having always a tinge of brown.

In character the Tinné people unite, in our author's opinion, the usual defects of savages with more good qualities than are ordinarily combined with these defects. Their hard life makes them selfish, proud, severe towards women and old and weak people--though blindly indulgent to their children--and also cowardly, lazy and deceitful. But he adds, "how many other vices commonly ascribed to savages are unknown to them?" They are humane and gentle to their equals,--are sober and averse to strong liquor; they are not vindictive; theft, rage and violence are unknown among them. They are eager for instruction, and inquire about everything, like children. They do not lack sagacity and penetration; but he adds the remark which will be found significant--"their intelligence is evidently in the swaddling clothes of infancy; their faculties are, so to speak, benumbed or shackled by a bar, which is nothing else than that forced and abnormal condition which we style barbarism."

The language spoken by these people, as it is fully analyzed and minutely set forth by the author, is one of the most remarkable emanations of the human intellect. It possesses all the qualities and constituents which persons not familiar with the discoveries of modern philology are wont to regard as peculiar to highly cultivated idioms--capacity for varied expression, wealth of inflections, aptitude for word-formation, the substantive verb in different forms, and many auxiliary verbs. To give even an outline of this extraordinary language would take us beyond the reasonable limit of such an essay as the present. A few examples, selected as fair specimens, must suffice.*

The primary roots of the Tinné language, as of the Sanscrit, are all monosyllabic, and usually have a signification of a

*In the words of the aboriginal languages quoted in this paper, the "scientific orthography" has been employed. The elements of this orthography may be briefly

general or abstract character; thus, *thay*, sand, really signifies "the minute, decomposed object"; *shion* signifies age, maturity; *tthen*, bone, is understood properly to mean "the long hollow object." From these are made secondary roots by prefixing or adding a particularizing vowel—*thayé*, minute, broken up; *edjion*, ancient; *etlthæn*, bone. There are other derived roots or "themes" formed by prefixing to the simple roots various particles, as *de*, *dæ*, *ne*, *kwe*, *in*, sometimes with a slight euphonic change in the root. Thus, from *thay* (the minute, sand-like object), we have *dedhay* (the *dh* pronounced like *th* in *this*), meaning salt (that which resembles sand); from *shion* we have *nelshion*, grown up (that which has come to maturity); from *tthen* we have *dællthæn*, hard (i. e., bone-like), and with two particles, *in* and *kwe*, prefixed and combined, replacing the initial consonants of the roots, *inkwene*, hollow and long (like a bone).

One of the most notable of these derived forms is the word for *man*. *Ni* or *ne* (which, as a monosyllable, usually has the consonant duplicated,—*nni* or *nne*,—to express an emphatic pronunciation is the Tinneh root-word for "earth." The particle *de* (otherwise in various dialects pronounced *di*, *te*, *ti*, *tæ*, *the*, etc.), which conveys the meaning of "that which is of," or "that which pertains to," is prefixed to this monosyllable to form the derivative term for man (*tinne*, *dènè*, etc.) already referred to. Man is pre-eminently the being that pertains to the earth. The word corresponds, not with the Latin *vir*, but with *homo*, and in its plural acceptation means "people." It is used, like the German *man* and the French *on* (a contraction of *homme*), as an indefinite personal pronoun in phrases corresponding to the "*man sagi*" and "*on dit*" of those languages. (*Dènè asel'ni*, *on me l'a dit*; *dènè ze'li*, *on imite*). It even becomes, on occasions, an indefinite article (but generally in an abbreviated form), when referring to human beings or to parts of the human body, as with *el'a*, father, *denel'a*, a father (lit., some one's father); *inla*, hand, *deninla*, a hand (i. e., some one's hand). The working of the combined powers of deduction, abstraction, and generalization has rarely been exhibited in any language more strikingly than in the formation and use of this word.

It is, however, as might be expected, in the Tinneh verb that the capabilities of the language in the way of expression are most fully shown. In many other American languages, as is well known, the verb possesses an immense variety of minutely expressive forms, which, when these languages were first studied, awakened much wonder and admiration. Later on, when the physiological and "brutal" view of anthropology overpowered

described in the phrase "vowels as in Italian (or German), consonants as in English." The only additions here required are the *æ* to represent the short *u* in *but* (French *eu*, German *o*); the Spanish *n* to indicate the nasalized *n*,—sometimes weak, as in the French *bon*, sometimes stronger, like our *ng* in *singer*; and the apostrophe (') affixed to various consonants and some vowels to give them an aspirate or guttural sound, as *k'* to express the German *ch* or Spanish *j*, and *r'* to indicate a strongly guttural *r* (or *grasseye*). Slight variations of pronunciation are not important in studies of the present cast.

for a time its philological and intellectual aspect, a period of depreciation set in. Even the always candid and usually careful Darwin was so far influenced by the arguments of his ill-informed followers that he allowed himself to speak slightly of "the extremely complex and *regular* construction of many barbarous languages," as a sign of immaturity and imperfection. If extreme complexity in language is a mark of low organization, the Greek of Plato and the Arabic of Avicenna must take a very humble rank. On the other hand, if irregularity of grammar gives a claim to admiration, then the most complex of American languages, the Iroquois, Algonkin, and Tinneh, may fairly rank beside those exceedingly irregular tongues, the Homeric Greek and the Vedic Sanscrit—both of which, it might be added, should, in reference to the condition of the people who spoke them, be classed as "barbarous languages,"—so little did Darwin, or rather his authorities, with all their classical attainments, know of the first principles of modern philological science. To find a perfectly regular language we must look, not to barbarous tribes or civilized nations, but to the inventors of Volapük and other artificial creations of the art. It will not be necessary to dwell on the points in which the forms of the Tinneh verb resemble more especially those common to it with others of the highly organized American languages—the numerous conjugations, the pronominal transitions from subject to object, and the like. But certain special facts must be noticed which will show its claim to be ranked in the intellectual scale on the same level with the most notable linguistic families of the old world. It possesses and constantly employs the substantive verb in various forms. The root of the principal form is *li*, of which the present tense, with the personal pronoun prefixed, is as follows:

SINGULAR.		DUAL.		PLURAL.	
<i>edi</i> ,	I am.	<i>idli</i> ,	we two are.	<i>yaidli</i> ,	we are.
<i>nenli</i> ,	thou art.	<i>ali</i> ,	ye two are.	<i>yaul'i</i> ,	ye are.
<i>enli</i> ,	he is.	<i>kenli</i> ,	they two are.	<i>k'eyondi</i> ,	they are.

Examples—*dini nenli*, thou art a man (*homo es*); *uya enli*, he is ashamed; *nezun esli*, I am good.

Exactly as in the Aryan languages, this substantive verb becomes an auxiliary verb in forming secondary tenses of other verbs. With certain particles, *wa*, *wo*, etc., prefixed to the root *li*, it helps to make the future or conditional form, thus resembling, as M. Petitot remarks, the English shall, will, should, and would. Thus, *daedi*, they say, has in the future or "eventual" tense, *daedi walli*, they will or would say.

Another very common auxiliary verb has for its root *le*, considered by M. Petitot to be the same as the word *hand*, which is *la* or *le* in different dialects. He compares its use as an auxiliary and in other respects to that of the English *do*. It may be well to give a part of its conjugation, to show the error of the common notion,—which was long since exposed by Dupon-

ceau, but constantly crops up,—that American languages have not proper inflections, but only agglutinative forms:

PRESENT TENSE.			PAST TENSE.	
<i>as'lé</i> , I do.	<i>adailyé</i> , we do.	<i>as'l'a</i> , I did.	<i>adailya</i> , we did.	
<i>anelé</i> , thou dost.	<i>adaul'é</i> , ye do.	<i>anenla</i> , thou didst.	<i>adaul'a</i> , ye did.	
<i>anlé</i> , he does.	<i>adanlé</i> , they do.	<i>anla</i> , he did.	<i>adanla</i> , they did.	

The difference between *anlé*, he does, and *anla*, he did, is as clearly inflective as that which exists in Latin between *facit* and *fecit*. Many still more striking examples could be given; but for any who have studied these languages they will be needless. We may turn to certain classes of verbs which vary in their terminations and forms of conjugation according to the nature of the actions or ideas which they express, such as "verbs of motion," "instrumental verbs," "verbs of mental action," and the like. That there should exist in a language of wandering savages a distinct class of verbs with peculiar terminations entirely devoted to expressing the operations of the mind will seem to many persons surprising. The surprise, however, will proceed wholly from that prejudice of race which refuses to regard the people of other and especially of less cultured races than our own as endowed with natural capacities equal, and possibly superior, to those which governed our forefathers in the formation of our speech.

The "verbs of mental actions" comprise all verbs expressive of operations of the intellect and feelings, including thought, mental suffering, passion, will, and the like. They are classed in no fewer than eight conjugations, distinguished by their terminations, each conjugation having its own special form in the present, past and future tenses. Thus *yenesshen*, I think, of the second conjugation, has in the preterite *yenidhi*, I thought, and in the future (or "eventual") *yenusshi*, I shall or may think. *Naosshær*, I commit, has for preterite *naosthilshær*, and for its future *nawussthir*. It should be observed (as the last example may indicate) that the expression "mental actions" includes in this language a much wider scope than might at first thought be suspected. To this class belong not merely verbs meaning to pity, to trust, to hate, to aspire, and the like, but the verbs to punish, to forbid, to be free, to be hungry, (i. e., to desire food), to kill, (indicating an action of the will), and even to die, which is apparently regarded as the cessation of mental power.

Any neuter or intransitive verb may be made transitive or receive a causative signification by inserting the sound of *l*, derived from *le*, to do. Thus *yenidhen* signifies he thinks, while "he thinks him good" would be *nezun ye yenildhen*, lit. "good him he deems. So *danutsar*, we weep; *da-ne-nul'tsar*, we cause thee to weep, where *da* is we, *ne* is thee, and the inserted *l* (which is aspirated for emphasis) puts the verb in the causative form.

NOTE—In the last sentence in the note at the beginning of this article read "edittou" for addition, and "supply" for apply.

ANCIENT ETRURIA.

BY THOMAS WILSON.

Etruria is almost pre-historic. It lies in that vista of the past which is almost entirely beyond the pale of history. The few dim and cloudy patches of tradition which have come to us through the classic historian are hardly worthy the name of history. Tested by the archæologic discoveries of modern times, they are growing less certain and less trustworthy; and yet they were of great benefit. By them the archæologist came to know of the existence of the Etruscan people; he was enabled to search for the archæologic evidence, and when found to recognize it as Etruscan. In this way Etruria had a great advantage over other pre-historic countries, for without this knowledge, slight though it may have been, the discovery of Etruria and its people might have been postponed along with other pre-historic peoples until the present century.

Etruria occupied that part of ancient Italy which lies in the form of a crescent, bordering on the Mediterranean sea, west of the Tiber and Appenines, with the southern horn at Rome and the northern in the neighborhood of Spezzia. Florence, Arezzo, Gobbio and Todi, with the Apennines, indicate generally the eastern boundary. There may have been outlying colonies on the north and on the south, but this was Etruria proper. North, Etruria Circumpadana; south, Etruria Campaniana. The subdivisions of this territory are unknown, but there were twelve capital cities. These cities are believed to have been the following, beginning as to locality, on the south: Veii, eleven miles north of Rome, Caere (or Cervetri, the modern name), Tarquinii (Corneto), Fallerii, Vetulonia, Volsinii, Rusellae, Clusium (or Chiusi), Perugia (or Perugia), Cortona, Arretium (or Arezzo), and Volterrae.

There were many other cities. These were only the capitals. In some cases the occupation of the site has continued into modern times. Cervetri, Orvieto, Chiusi, Perugia, Cortona, Arezzo are modern cities upon ancient sites. Some, indeed many of them, retain traces of Etruscan architecture and occupation. But other of these cities have been deserted so long ago that the memory of man runneth not to the contrary. Veii, Tarquinii, Vulci, Vetulonia, Volsinii, Rusellae, Volterrae are some of them. There is nothing to indicate to the common eye that these spots were once great cities. Here and there a bit

of pottery, a worked stone, or some such article, or perhaps an irregular mound, or ditch, is all that remains to tell the tale, and it—the tale—has remained untold and unknown how many centuries, one cannot even guess, but far back into the Roman Republic, and possibly into the time of the Roman kings.

GOVERNMENT.

There does not seem to have been any one city capital of the province or country, nor does there seem to have been any central government. Each city (and we may suppose, with it the surrounding country) seems to have had a government of its own, but its form, its power, or its duties are almost unknown beyond the fact that it had a governor, or head man, who was called Lucumo or Lucumone. Each city could, apparently, make war or peace without the intervention or consent of the others, yet they could, and did, combine for both. In this respect they seem to have been somewhat in the form of a federal republic—each city being sovereign for some purposes, and combining all the cities for other purposes.

The Lucumones appear to have been the head of the church, as well as of the state, and to have combined the functions of high priest with those of governor. How the Lucumones were selected is not known. They may have been wise men, augurs, prophets, and so had some divine commission, real or pretended. There was no monarchy and no king, so far as we know.

RELIGION.

The Etruscans had a religion, of course. It was on the same general plan as that of the Greeks and Romans—with gods of different attributes and for different purposes. They seem to have had, as it were, private gods—the Lares and Penates—for each household; the figures, made of bronze and terra cotta, are still found in the tombs. There seems to have been less individuality, less opportunity for independent action or belief, than among the Greeks and Romans. There was more mysticism. Their gods seem to have been more exclusive. Their great gods could only be consulted by the authorized priestly authority at the appointed times and after the requisite ceremonies. Their decisions, as made through the priests, were more absolute. In this way they more resembled the Druids.

LANGUAGE AND LITERATURE.

The Etruscans had a language and must have had a literature. Roman historians mention indefinitely the fact that there were Etruscan writers of history, tragedy, song, hymns, etc., etc., etc. These have all perished and the world has no means of their recovery. The inscriptions, sometimes painted, sometimes

engraved on their tombs, can be, and have been, studied at leisure. Although the Etruscan alphabet is well known and the Etruscan words are easily rendered into living languages, yet their meaning when thus rendered is unknown. All the learning and labor bestowed on them has, in this regard, been without result beyond the defining our want of knowledge. These inscriptions have been discovered until they number thousands. The cardinal numbers, from one to six, the names of which were given on the sides of a cube of dice; but their order—which is one and which is six—is unknown. The numerals, known to us as Roman, were really Etruscan. The writing, both of figures and letters, was usually from right to left, though instances have been found to the contrary.

ART AND ARCHITECTURE.

The Etruscans were skilled in both. Their principal arts were painting, sculpture, principally in relief, engraving always intaglio on the Scarabei and by incised lines on their bronze, the working of precious metals, and the making and decoration of pottery. These arts are principally known to us by the preservation of objects in the tombs.

The art of Etruria, like its civilization, had many epochs. Some of these epochs show great similarity with Grecian art, others with Egyptian art. The relations of these, especially the latter, is unknown.

The sculpture, the engraving, and the working of precious stones and metals were unique. They seem to bear no relation with that of any other people, if we may except the form of the scarab with that of Egypt.

Gold-working was carried to a high degree of excellence by the Etruscans. Their ancient style has been revived and become fashionable in the modern world. Its peculiarity consisted of the decoration of what would otherwise be a plain surface, by minute balls, almost specks, of gold thickly dotted over it.* The only place where similar jewelry of the pre-historic times has ever been found was in the Crimea, and to the north-east of the Black sea.

The ceramic art of Etruria was carried to a high degree of perfection. The size and number of its examples, their elaborate and difficult convolutions, the purity and elegance of form, the firmness and delicacy of handling and design in the decorations, together with the fragility and fineness of the substance, show that the Etruscians ranked high as artists in clay and terra cotta. I reserve discussion of sculpture and painting until I speak of the tombs and the vases, which combine the greater portion of these two Etruscan arts.

*Mrs. Wilson's Gold Fibula.

Of architecture but few examples remain. A few years ago it could have been said that there were no remains of any Etruscan temple, palace, church, or house; not one was to be seen, even in its ruins, nor has any one ever been seen so as to be described by a person worthy of credence. This was true until the summer of 1887, when the ruins of a temple were discovered at Falerii.

Walls, possibly some gates, and the tombs with their contents, are all that remain of the architecture, in fact, of the civilization of these ancient peoples. All else seems to have been swept away by, or during the Roman conquest, and to have perished before the advent of the reliable Roman historian. The walls around some of the Etruscan cities, Cortona, Perugia, Fiesole, Volterrae, with two or three gates, the upper parts reconstructed (for example, those at Perugia, by the Emperor Augustus), the tombs, especially at Corneto, Orvieto and Chiusi, the arch of the tomb of the Gran'Duca, the arches over the aqueducts or sewer at Cloaca Marta near Corneto, and the Cloaca Maxima at Rome, the walls and arches of Roma Quadrata, and those on the Aventine Hill (for these are believed to have been the work of Etruscans); these are about all that are left to us.

These arches were, without doubt, the work of the Etruscans. That they were the inventors of the arch is shown in several ways. It is conceded even by the Roman historian that the arches in the walls around Roma Quadrata were the earliest work belonging to Roman civilization, and that they were built by Etruscan workmen.

The walls which have just been mentioned bear their own evidence of being Etruscan, and the arches in them show the various stages of progress until they arrived at the perfect arch shown in the earliest Roman work.

The arch of Cloaca Marta and Cloaca Maxima are evidences of the excellence of Etruscan architecture and the skill of Etruscan workmen. But the finest example which I saw, and the one which filled me with admiration, was the arch of the Tomba di Gran'Duca near Chiusi. It was a round, barrel arch, twelve and one-half feet long, nine feet and nine inches wide (the span of the arch), with blocks of stone from two to four feet long and twelve to eighteen inches thick, laid without cement, yet perfect in all its parts; water-tight, without a slip or break in any joint, and yet rivaling in its antiquity the foundations of Rome.

THE TOMBS.

The tombs of Etruria are of several kinds, and with many differences between them. These differences are believed to indicate different epochs of civilization, and by the methods of study, comparison, locality, position, and sometimes superposition, together with the identities or similarities of objects found

therein—means all known to archaeologists—they have been enabled to decide upon some chronologic order to those tombs.

The earliest belonged to the bronze age and are not at all Etruscan, although found in Etruria. They are distinguished as a place of sepulchre by the presence of incinerated bones placed in what is called "hut urns," accompanied by the cutting implements peculiar to the bronze age. These urns were made of clay, baked black, in the form of a hut, round, though occasionally oval, from one to two feet in diameter, with a conical roof nearly the same height. They had a large door, or opening in the side, by means of which the ashes were placed within. I have prepared a representation of a series of the Etruscan tombs which are now on exhibition at the National Museum. The first and earliest is called *Tomba a Pozzo*, or well-tomb—so named for being in the form of a well. Number one of the series is a perpendicular section representing the one-half of such a tomb. A circular hole was dug, say three feet in diameter and four or five feet in depth. The bottom was paved with pebbles, and around the sides a certain height, leaving a hole in the center, in which was placed the pot or urn containing the incinerated bones. The hole, with the urn inside, was covered with a large, flat stone; more pebbles were laid on its top, first regularly, then irregularly, and then filled up with earth. Whether there was any monument erected or mark placed over such a tomb is not known, but no indications thereof have been found. These tombs or graves are found in the greatest number in the neighborhood of Chiusi. They are scattered indiscriminately over the face of the country, but principally upon the hills where they appear to have been preserved by the forest growth. Comparatively few have been found in the lower or level lands, but this may possibly be accounted for by the centuries of cultivation.

Apparently the next in chronological order are the *Tombe a Fosse*, or ditch tombs. These are made after the manner of the usual grave of the present day. The burial was by inhumation and not by incineration. A smaller ditch was made at the bottom of the grave, leaving a ledge along each side; the body was placed in this smaller ditch in a recumbent position, with the intended offerings or objects; and the *fosse* or ditch was covered with stone slabs, fitting closely, and supported on the ledge on each side. In opening these tombs the stones are broken with sledge hammers by the workmen and piled up at either end of the grave. The original of the copy now in the National Museum was opened in the presence of myself, Mrs. Wilson and Violet, at Corneto, in March, 1886.

Succeeding these are the *Tombe a Camera*, or chambered tomb. These were made in the form of a chamber or room, with a horizontal entrance through the door on the same level as the bottom of the tomb. The example shown in the National Museum

comes from Orvieto and was tomb No. 98 in the excavation made by Signor Ricardo Mancini during the year 1886. We assisted at the excavation, spending a week at work in the cemetery. Much of the pottery now displayed in fragments in the two cases in the National Museum came from this tomb. I found here the Etruscan scarab I now wear. I had it mounted. There appeared to be a street of tombs, with doors and entrances therefrom, as shown. Some of the doors are but huge slabs of stone, which have to be moved bodily in order to obtain entrance, while others are, as here shown, hung on pivots and can be opened and closed. Such is the door at the Tomba di Gran 'Duca at Chiusi. A pair of such doors—originals—are to be seen in the Museo Fiana at Orvieto and another at the Etruscan Museum in Florence. In these tombs a bench was left on either side, and sometimes across the end, for the reception of the body, which was placed thereon in a recumbent position. Occasionally a burial by incineration was made in these tombs, the urn containing the burnt bones being placed on the floor at the extreme end. The furniture of this tomb at the museum is original and genuine. It was a virgin tomb, having never been violated. This is exceedingly rare, most of the Etruscan tombs having been opened in ancient times, many of them more than once. It is the belief of archæologists that they have been opened first to despoil them of their precious metals, then for the objects of bronze and pottery, and, lastly, possibly for the sake of the cut stone of which the tombs were constructed. Some were visited only once or twice, but it is rare to find them virgin, as was this.

Next in order, possibly only a variation of the last division, are the painted tombs. These are chambered tombs, sometimes of many chambers. They are approached by a stairway cut in the solid rock or clay, descending from twenty to forty steps from the surface to the door of entrance. There is frequently a vestibule; sometimes but one large chamber, and in some cases with lateral chambers. These are literally houses for the dead, excavated out of the solid tufa rock, and being ten to twenty feet beneath the surface. Occasionally they have been excavated out of the hillside, with an entrance on the level, instead of descending. The bodies were placed in sarcophagi and ranged around the chamber on the benches of solid rock. The tomb of the Tarquinii at Cervetri is thirty-five feet square, with two supporting pillars, with benches in double tiers, rock hewn, and niches above them, sufficient in all to contain fifty corpses, while on the walls above are scratched or painted the epitaphs of the dead, in which the name of Tarquin appears no less than thirty-five times, or over thirty-five bodies. On these walls, in this style of tomb, are found the paintings which give to them the name of painted tombs.

The painted tombs are exclusively Etruscan. They have been

discovered in many localities, but the greatest number are at Corneto. These have been excavated and put in order. They have a guardian and are under lock and key, and are usually the property of the government.

Let me describe the necropolis of Tarquinii, and with it some of the painted tombs: Tarquinii was the ancient city, Corneto is the modern. The former was situated, as was usual for Etruscan cities, on a tongue or point of land of the high plateau at the original level formed by the tufa rock, when it was deposited during the outburst from the neighboring, but now extinct, volcanoes. This tufa has been eroded by the streams which, forming their little valleys, left the original plateau with points or tongues of land, surrounded on two or three sides by precipices from fifty to one hundred feet or more in height. On these points, overlooking these precipices, nearly all Etruscan cities in the south were built. They were chosen evidently as places of great natural strength. The stream which cut the ravine and formed the valley left a corresponding plateau upon its opposite side, and this plateau was the cemetery. Such was the position of most of the Etruscan cities and cemeteries.

Stand with me on the battlements of the old castle at Corneto, itself a ruin of no mean antiquity. We face westward. At the foot of the precipice below us flows the little river Marta on its southward course to join the sea. To our left, between us and the blue Mediterranean, lie the marshes, or plains, so full of deadly miasma that no one dares dwell there during the summer. On our right is the little ravine, or valley, that separates our precipice from its fellow of the same height opposite. On that plateau stood the once proud and populous city of Tarquinii, one of the capitals of Etruria. On our plateau stands the comparatively modern town of Corneto, while stretching off behind us on the same ridge was the necropolis.

On one of these plateaux was the city of the living; on the other the city of the dead, and this was in those far-away ages long before the history of man began. Then one of these plateaux was life, activity, intelligence, science, art, and history; and the other was silence, desolation, death and the grave. In this age, these conditions have been reversed. The plateau of the city now represents the silence and desolation of death; while nearly all we know of the life, intelligence, art or history of the city, or its people, is that gathered from the tombs on the other plateau.

The city of Corneto appropriates annually two thousand francs, and the explorations are carried on systematically, year after year, by a corps of experienced workmen; the results being carefully and regularly noted, and the products reported and placed in the museums, the whole being done under governmental supervision. These workmen are digging here, every-

where, in every direction and at every place. The number of tombs discovered may be counted by the hundreds, but those painted and preserved numbered, at my last knowledge, twenty-five. This evidently had been a necropolis for a long period, during different ages or epochs, for the tombs discovered have been of different types, and at different depths, and the articles found of many different kinds, so many as to preclude the possibility of their belonging all to one age. Tombs or funeral deposits may be found within one and a half or two feet from the surface, others at a depth of several yards. Some are small, others are large; some with smaller stones, others with larger; some better made, others worse; some with steps leading down, some without, etc., etc. There is a large circular monument near the center of the cemetery, scarcely buried under the surface. I could not understand what purpose it had served except that it had a sepulchral chamber with steps leading down.



PALESTINE EXPLORATION.

BY THEODORE F. WRIGHT.

Exploration in Egypt is very easy. The sand may be moved as readily as light snow. The climate permits labor all the year round, and in fact never obstructs the work for a single day. The people are ready to work, reasonably trustworthy, and not disposed to be lawless. All these favorable conditions would not avail if the government were hostile, but on the contrary it is in favor of excavation, gives its full authority to promote the undertaking, provides the best possible quarters for a museum, and permits a generous disposal of objects to distant cities in which they can do the most good in an educational way. Moreover, excavation is rarely unsuccessful in bringing to light within a brief time objects of great value, which fully justify the outlay and give constant stimulus to the work.

In Assyria, on the other hand, there are so many difficulties to contend with that no one expects thorough work to be done in the valley of the Euphrates till, in some way, conditions shall have been changed.

In Palestine we have an intermediate situation in every sense. The government is hostile to excavation, and reluctantly grants from time to time a firman or permit for a specified time and place. The climate makes work in winter and in summer utterly impossible, and narrows the explorer's opportunity to a few weeks in the spring and autumn. The people are of so mixed a character that, if some are found willing to work, others annoy and

obstruct, stealing everything they can lay hands on, and never to be fully trusted. The material to be moved is very different indeed from Egyptian sand. The explorer is deprived at once of everything which he finds, and sees it carried away to Constantinople, where it can do very little good. And the danger to the explorer's health is so great that he is almost sure to be ill when strength is most wanted.

In view of these difficulties the question may be asked, Why persevere? Why not wait till conditions become more favorable? The answer is obvious. Not only will there be no improvement in several respects which depend upon physical causes, but the work demands to be done on account of the danger that precious objects may be destroyed. The appearance of the Moabite stone is a pathetic appeal to make no delay in recovering such objects lest they be utterly destroyed, as that came near to be. The cutting out of the Siloam inscription shows that nothing is safe that has a money value. Moreover, the very demand of the age for the treasures of the past will not submit that Palestine be neglected, but insists first of all that it be made the field of archæological research. Therefore we have the noble amount of work which, since our own Robinson, has been done in spite of all dangers and difficulties, till we have perfect maps and hundreds of identifications, and till the Palestine Exploration Fund has received general recognition and an encouraging degree of support. But what it has done is as nothing compared with what remains to be done in the way of excavation. The inscribed tablet found in May last at Lachish has aroused an eager hope that others will be found with less difficulty. Mr. Bliss, the explorer, who has every qualification needed for his work, has so far recovered from his illness of last summer that he resumed work in the fall, and the Quarterly Statements are enriched by his graphic accounts.

It may be truly said that at Lachish, the exploration has gone down from the present life of Palestine to that which belonged to the days of Abraham, if not earlier, and that, if the work be supported, this will be done in other places till we shall know about Melchizedek and his religion, about the founders of Sodom and the builders of Hebron.

"MAN AND THE GLACIAL PERIOD."

BY WILLIAM H. HOLMES.

"Man and the Glacial Period," by G. Frederick Wright, Vol. XLIX of "The International Scientific Series," just issued by D. Appleton & Co., is a work that aspires to speak to a popular audience upon two important branches of science—the geology of the ice age and the history of the human race during that period. Portions of this work are devoted to the discussion of early man in America, and to these portions I propose briefly to call attention. Man, the leading subject in the title of the work, does not appear upon its pages until well on toward the close, and some fifteen or twenty pages only are given to the American division of the subject. Three or four times that number are devoted to early man in Europe. The statement of the American evidence is conveniently brief and may be summarized in a few words. Relics of art were first discovered in the gravels at Trenton, New Jersey, in 1875, and in 1888 sixty specimens of rudely flaked stones had been taken from recorded depths, and were therefore available in evidence. It is stated that below the superficial soil, which is about one foot in depth, the modern Indian flint implements entirely disappear and implements of paleolithic type only are found. In 1884 our author prophesied that similar evidence of glacial occupation would be found in Ohio, where the conditions are closely analogous, and subsequently a flint "implement" of paleolithic type was recovered from a depth of eight feet in glacial formations in Madisonville, and later a second "implement" was found at a depth of thirty feet in coarse gravels at Loveland. In 1886 a similar object was obtained from a depth of eight feet in gravels at Medora, Indiana. Another specimen considered to be of the Abbeville type was obtained from a depth of sixteen feet in glacial deposits in Tuscarawas County, Ohio, and finally numerous pieces of flaked quartz were found in gravels at Little Falls, Minnesota. Up to the present time, according to our author, the above are all the instances in which relics of art are directly and indubitably connected with deposits of this period east of the Rocky mountains. On a subsequent page mention is made of one other "implement," but it is conceded that there are many chances of error with respect to it.

Thus it is seen that the establishment of two facts of the greatest possible importance in human history—the glacial age of man in Eastern America and the existence here of a paleolithic culture—are allowed to be dependent upon this evidence,

and no questions are asked as to its competency, and no doubts are expressed as to the advisability of publishing the conclusions as final. Next to the finds at Trenton, the Minnesota evidence has generally been regarded as the most important, but recent explorations make it necessary to throw this out entirely; this being omitted it is seen that sixty-four specimens of roughly flaked stones collected in four localities, largely at unsafe depths, and by four persons none of whom claim to be skilled in the observation of gravel phenomena, constitute, if our author is right, the entire array of evidence. Although attention is thus called to the small number of specimens brought forward, I would say that this is not necessarily a vital failing, and it is not the chief failing of the evidence; it is not the quantity so much as the quality that calls for attention. As bearing upon the latter point there are three things to be considered: first, that the evidence of the finding of these objects in place in undisturbed gravels is not satisfactory. With respect to the sixty specimens found upwards of a foot in depth at Trenton, it may be said that the foot limit is not a safe one, either for a city or a country site. The uprooting of forest trees intermingles the contents of the soil to the depth of three or four feet and the various excavations conducted upon a town site in 200 years of occupation makes "recorded" depths to twice or thrice that depth of most uncertain value. Loams and gravels reset after being disturbed so that the disturbance is in cases impossible of detection. The main difficulty of the unskilled observer is to distinguish between objects included in the ancient gravel when it was formed, and those embedded recently by descending from the surface into excavations. The expert student of gravels is often exceedingly puzzled in the observation of these phenomena and each year is teaching him greater caution. Neither of the four collectors referred to are geologists, and as they could not have appreciated the need of extreme care, the chances are very great that mistakes have been made, and science, which accepts important conclusions only on unimpeachable evidence, is fully justified in querying each and all of these finds and in asking for additional observation of the highest class.

In the second place these objects are referred to as *implements*, as if no question as to their exact nature had ever been raised. It is upon the assumption that they are bona fide implements, that the theory of a culture otherwise unobserved in America is set up and elaborated. Implements are objects adapted to a use, and the evidence of their status as implements is specialization of shape or indications of modification by use, neither of which features is observed in any single one of the sixty-four specimens upon which so much has been predicated of peoples and culture and age. That they resemble certain types of European paleolithic implements is sufficient for our author, who overlooks the important fact that they bear a much

closer resemblance to the thousands of rude failures found upon Indian work shops in all parts of this country.

Thirdly, could science be brought to accept as fully satisfactory the evidence of unprofessional observers that these objects were found in place in the gravels, thus recognizing the presence of man in glacial times, it still cannot concede the establishment of a theoretic culture in the eastern United States until some completed implement, some finality of art is recovered to serve as an index of culture grade. The only specimen of the sixty-four referred to having decided indications of being a finished implement, and the only one suggestively resembling a European type, is the one from Tuscarawas county, Ohio, and that can be duplicated from the refuse deposits of any of the great Indian quarry-shops of this country. If analogy of form is to be used at all in this discussion these objects must be classified with American rejects left by modern neolithic implement-makers upon shop sites, and not with foreign implements.

Four of these rude specimens, said by inexperienced observers to have been found in place in glacial gravels, are considered sufficient to establish the existence of the glacial man of palaeolithic culture throughout the vast valleys west of the Alleghanies, and sixty still less specialized specimens of like pedigree, satisfy the supporters of the glacial palaeolithic idea east of the mountains. This is indeed a most meager and unstable foundation for the imposing superstructure reared upon it.

The evidence relating to glacial man on the Pacific coast is equally voluminous, but with few exceptions is less conclusive, and the grade of culture indicated by the finds is not paleolithic, but of a high neolithic type closely resembling, and perhaps superior to, that of the historic peoples.

A most serious feature of this popular presentation of meagerly supported conclusions as if they were fully accepted by the scientific world, is their adoption by such writers as Fiske, and their incorporation into standard historic works.

Seeing that our author has not himself made a single original observation bearing directly upon the subject he would, in re-writing this work for the next edition, be warranted in omitting all that he has said with reference to man, and especially to paleolithic man in America. This would give the slowly accumulating evidence a few years to overtake the already well developed theory, and would serve as a partial corrective to the large installments of unsafe matter already furnished by inconsiderate book makers to a credulous people.

PALEOLITHIC MAN IN NORTH AMERICA.

BY HENRY W. HAYNES.

The recent repeated attacks upon Professor G. Frederick Wright for presenting a summary statement of the evidence of the existence of paleolithic man in this continent, in his lately published work, *Man and the Glacial Period*, seem to call for some notice on the part of those who maintain the truth of his hypothesis. But first it is proper to enter a protest against the general tone of the criticism referred to. It is characterized by such an arrogant assumption of superior and infallible knowledge as to fully justify the retort in kind; while running through it is a strain of "mutual admiration" on the part of the critics, and of manifest prejudice against the inter criticised, sufficient to warrant the suspicion that it has been prompted mainly by personal jealousy.

Whether the glacial period was a unit, or whether it ought rather to be divided into several successive stages, makes no difference with regard to the reality of the existence of man upon this continent at that early time. It is not necessary to determine whether man was pre-glacial, inter-glacial, or post-glacial, provided it appears that he was actually living here as the contemporary of certain animals, now either extinct or migrated to colder regions, but whose bones have been discovered in gravel deposits recognized by geologists as laid down during the glacial period, or have been found in caverns, where they have been sealed up by layers of stalagmite formed subsequent to it. The question hinges solely upon the fact of the discovery in these same deposits, or caverns, together with the bones of such animals, either of human bones, or of objects fashioned by man's hands, upon the genuineness of the objects so claimed as the work of man, which are principally known to archaeologists as *paleolithic implements*, and upon the reasonable certainty that they were so fashioned either previous to, or contemporaneous with, the deposits in which they occur.

The term *paleolithic man* (as the etymology of the word implies) can be properly applied only to man who is proved to have been living under such conditions as these. It is necessary, therefore, to understand precisely what is meant by the term *paleolithic implement*, as upon this point great confusion of thought prevails in this country, though this is not the case in the old world. It has been gravely argued that all rudely chipped implements, wherever they have been found, ought to

be so named, just as all polished stone implements are properly called *neolithic*. But this is directly opposed to the experience of every explorer of Indian shell-heaps and village sites in which both kinds of implements are found commingled. Something more than the mere method of fabrication is required to make it proper to designate an object as *paleolithic*. Mr. William H. Holmes has found, near Washington, cart loads of rudely chipped, unfinished Indian celts, but, I think, no trained archæologist would hesitate for a moment to pronounce that the objects figured by him in the article entitled "A Quarry Workshop" (*American Anthropologist*, Vol. III, Plate IV) do not bear the slightest resemblance to real paleolithic implements. Consequently, in my judgment, this much vaunted discovery has not any bearing upon the question at issue. Experience as to what genuine paleolithic implements, those discovered in Europe and universally acknowledged by archæologists there to be such, really look like, is demanded, before it can be either asserted or denied that similar objects have been discovered in this country. The engravings and figures of such objects, to be found in books, are very misleading as to their actual appearance, and are only useful to those who are familiar with the originals. This whole subject has been fought over and settled long ago in Europe. No sooner had Dr. John Evans, the most eminent authority upon this question known to science, brought forward the view that only one particular style of flint implements is ever to be found in the river gravels, or sealed up in caverns once the abode of man, and that they are quite unlike the flint implements found in or near the surface soil, than he was taken to task, and "wasters" from the sites of manufactures of flint implements, and rude tools found in the Danish kitchen-midden, were brought forward as precisely resembling those objects for which a much greater antiquity was claimed by him. But so different is their shape and style, and the method of their use, so unlike is the character of their clipping, and such clear and unmistakable traces of great antiquity do they exhibit, that no archæologist in Europe at the present time thinks of questioning Dr. Evans' assertion that "the general *facies* of a collection of implements from the river drift, and one from the surface, is entirely distinct" (*Ancient Stone Implements*, etc., page 569).

No fact in archæology is now more conclusively established than that man once actually lived *in some regions* as the contemporary of certain extinct animals, and that he fashioned at that time only a certain peculiar type of stone implements; but that at a later period, *in the same regions*, his implements are found to exhibit a more elaborate and finished type, resembling precisely those used by the inhabitants of this continent at the time of its discovery. Even Mr. Holmes admits that "the *possibility* that there were glacial men, inter-glacial and post-

glacial men *somewhere upon this continent*, is not seriously questioned by any one." (Science, XX, 296 Nov. 25, 1892.) But on the very next page he adds that "the exclusively rude period of flaked art, observed in Europe, is so extraordinary that its repetition in other countries would approach the marvelous." This is a very strange conclusion on his part. Is there anything marvelous in the fact that man everywhere should have passed through similar stages of progress, if he is everywhere the same being? Is it marvelous then to expect to find paleolithic implements in North America, unless Mr. Holmes means us to understand that in his opinion this continent was not peopled until man had reached the neolithic stage of culture? But Mr. Holmes ventures the assertion that "there is not in the museums of Europe or America a single piece of flaked stone found in place in the gravels of America and satisfactorily verified that can with absolute safety be classified as an implement at all." (Ibid, p. 297.) This is a pretty bold statement. Does Mr. Holmes actually mean to claim that he is the only living man who is competent to form a judgment in regard to "the specialization of shape" in an object, or capable of having a reasonable opinion as to what is and what is not an implement? I hope I am not trenching upon the bounds of modesty when I venture to assert that I have carefully studied many undoubted implements, found in this country and verified satisfactorily, which precisely resemble the numerous paleolithic implements that I have studied with equal care in Europe, and that they do not bear the slightest resemblance to the "thousands of rude failures found upon Indian workshops in all parts of this country" to which he alludes. So, too, his statement that "none of these articles exhibit well defined evidences of having been used," (Ibid, p. 296) is, to my personal knowledge, equally wide of the fact. Mr. Holmes seems to be fond of making startling assertions, as where he states that "quarrying was accomplished mainly by the aid of stone, *wood and bone* utensils, aided in some cases, perhaps, by fire. With these simple means the solid beds of rock were penetrated to depths often reaching twenty-five feet." (Ibid, p. 295.) I have italicised the words *wood and bone* to direct attention to the impossibility of such a statement as this, which bears directly upon his capacity to form an opinion upon matters about which no one knows anything positively.

The *gentleness* of objects discovered in this country, which Mr. Wright claims to be the equivalent of the paleolithic implements in Europe, is solely a question to be decided by experts in such studies. Until these critics can establish their competency to pronounce against such objects contrary to the opinion of other men who have enjoyed equal, if not superior, opportunities for forming a correct judgment regarding them, the probabilities may fairly be said to favor their acceptance. Peculiarly rash is Holmes' statement in regard to the implement found

in Tuscorawas, Ohio, and figured by Mr. Wright in his book, (Fig. 71), that it "can be duplicated many times from the refuse deposits of any of the great Indian quarry-shops of this country." Now not only does this implement precisely resemble in form, plan and mode of chipping, the paleolithic implements of Europe, but it also possesses the characteristic glossiness and waxy touch, which are only to be found upon genuine paleolithic implements, and which can only be recognized by having the different objects in one's hand, as I have pointed out in another place. (Proceedings of Boston Society of Natural History. XXV, 49).

On this continent it is only in beds of gravel in which there have been discovered what are claimed to be paleolithic implements, that the bones of such animals, extinct or migrated, as the mammoth and the reindeer, have been met with. No similar discoveries in caverns have been made in North America. The age of such beds of gravel, in which these objects have been found imbedded, is solely a question for geologists.

All of Mr. Wright's critics have joined in casting a doubt upon the antiquity of certain implements, made of white quartz, which have been discovered by Miss Babbitt, near Minneapolis, upon the ground that it either has been or will be proved that "implement-bearing layer is unquestionably modern, and not glacial, nor post-glacial". (Science, XX, 249.) Now, inasmuch as Mr. Warren Upham, one of the most experienced and careful of the geologists connected with the United States Geological Survey, has carefully studied the question as to the geological position of these objects, and vouched for them as belonging to the glacial period (proceedings of the Boston Society of Natural History, XXIII, p. 436-447), it will be at least modest for these gentlemen to wait until his position has been refuted before passing their arbitrary judgment upon the question.

As to the precise geological position of the Trenton gravels, in which the greatest part of the paleolithic implements of North America have been discovered, there has been much discussion among geologists, but inasmuch as no one claims that they are of recent origin, it will be needless to dwell upon that question here. It will be probably quite enough for me to quote the language of Mr. W. J. McGee, one of Mr. Wright's most acrimonious critics, upon this point: "It is in the aqueo-glacial gravels of the Delaware River, at Trenton, which were laid down contemporaneously with the terminal moraine, one hundred miles further northward, and which have been so thoroughly studied by Abbott that the most conclusive proof of the existence of glacial men is found." ("Paleolithic Men in America", in *Popular Science Monthly*, November, 1888.) It seems that as late as four years ago the "geomorphology" of the "New Geology" (Science, XX, 317) saw nothing in the age of the Trenton gravels to militate against the existence of paleolithic men in North America.

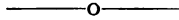
There remains to be considered the question of the *authenticity* of various finds, especially of those made at Trenton by Abbott and several other competent observers. Here, even at the risk of being relegated among the "inconsiderate book makers", who are accused of having belogged the question, I must be permitted to refer to what I have published elsewhere for a complete setting forth in detail of the evidence and argument bearing upon this question, as this would require far more time and space than are now at my command. (See *Narrative and Critical History*, edited by Justin Winsor, Vol. I, Chap. VI.; the *Prehistoric Archaeology of North America*.)

I have here shown that these discoveries of Dr. Abbott are not liable to the imputation of probable errors of observation or record, as would be the case if they rested upon the testimony of a single person only. In September, 1876, Professor Putnam was present at the finding *in place* of two paleolithic implements, and in all has taken five with his own hands from the gravel at various depths. Mr. Lucien Carr also visited the locality in company with Professor J. D. Whitney in September, 1878, and found several *in place*. Since then Professors Shaler, Dawkins, Wright, Lewis, and others, including the writer, have all succeeded in finding specimens, either *in place* or in the talus along the face of the bluff, from which they had washed out from freshly exposed surfaces of the gravel. The whole number thus far discovered by Dr. Abbott amounts to about four hundred specimens. Of these, sixty have been taken from recorded depths in the gravel.

As no one has questioned the authenticity of the discoveries that have been made at Madisonville, Loveland and New Comerstown, Ohio, and at Medora, in Indiana, it is needless to waste time upon them. That only a few paleolithic implements have thus far been discovered is sufficiently to be accounted for by the equally notorious fact that very few persons have searched for them, and by the difficulty many experience in discriminating between such objects and the ordinary "wasters" of Indian fabric.

There remains, lastly, for consideration the question whether implements found in glacial gravels are contemporaneous with them, or whether they may not have been subsequently introduced into them. We are told that none of the discoverers are "skilled in the observation of gravel phenomena;" that "gravels reset after being disturbed"; and that there is great difficulty in distinguishing between "objects included in the ancient gravel when it was formed and those imbedded recently by descending from the surface into excavations." Here's a "mare's nest", indeed! So professional geologists, like Shaler, Whitney, Dawkins or Lewis cannot be trusted to distinguish between disturbed and undisturbed gravels! The fact is, that it is not difficult to discriminate, and nothing more is required to do this than a trained habit of observation on the part of the

student. As it is understood by every one that this is the first matter to be attended to in every find, a skilled archæologist, like Putnam, Carr, or Abbott, is just as competent to determine whether the gravel has been disturbed in which he has found an implement, as another archæologist, like Homes, is to assert the contrary. It seems to be assumed by Mr. Wright's critics that everybody is a simpleton who dares to claim that there is good evidence of the existence of paleolithic man in North America. The truth of this hypothesis does not rest upon the merits or demerits of Professor Wright's book. Those who maintain it are quite willing to await the developments of the future. *Magna est veritas et prævalebit.*



ANCIENT EARTH-WORKS IN ONTARIO.*

BY HON. C. A. HIRSCHFELDER.

In my paper read last year before this section I referred to the different modes of burial adopted by the Hurons, confining my remarks upon that occasion solely to the district inhabited by that tribe. I purpose in this paper to briefly describe a few of the more interesting earth-works which I have surveyed in the Huron country and other parts of the province. There is really no authentic way of computing the age of our prehistoric remains. We have the historic date of 1649 as the period when the Hurons were almost exterminated by their deadly foes, the Iroquois, the few remaining being driven from their ancient abode, now known as Simcoe County, to Lorette, near Quebec, so that all earth-works in that district are anterior to that date.

The counting of rings in trees is far from being reliable, but in this northern region, where there is only one growth a year, some idea, in this way, can be formed of the age of a tree. That the Hurons occupied the same district for several centuries is evident from the fact that some forty or fifty ossuaries have been discovered in their country, and, as the "Feast of the Dead", through which custom the ossuaries originated, was only held every eight or ten years, they must consequently have resided permanently in their beautiful country for at least three or four hundred years.

In the midst of a large forest in the Huron district there is a circular ditch more than half a mile in circumference and only four feet deep. A good-sized man would be able to shoot his arrow from therein with little more than his head and shoulders exposed to danger. To judge from the age of the joining trees and from the depth of vegetable mould in some parts of the intrenchment (a depth of three feet), I am inclined to consider this a very ancient fort.

of a paper read before the A. A. A. S., at Rochester, 1892.

Another relic of the past admits of being described, but what its object may have been I am unable to conjecture. In the Township of South Orillia there is a circular excavation one hundred feet in diameter and twenty-three feet deep, tapering gradually downward until at the bottom it is but twenty five feet in diameter. The farmer who originally owned the property on which it is situated, thought he could detect the remains of an entrenchment around it, which had been constructed from the sand taken from the pit, but of this he did not appear to be certain. At the present time there is no appearance of its having been circumvallated.

There are many single graves within a radius of half a mile, to the south, east, north and northeast, many of which were opened years ago, but I could learn nothing as to what was discovered in them. Many stone tomahawks were found near and I picked up one on the edge of it. The pit is about fifty yards from a hill, and is on comparatively level ground. We dug in several places till we reached the clay, but were not rewarded with a find.

About eighty rods distant there are the remains of a camping ground, with such marks of former occupancy as are afforded by the presence of ash heaps, fragments of pottery, etc.

On a small island in Lake Couchiching (a little lake adjoining Lake Simcoe), there is an old semi-circular fort. The island on which it is situated is divided from the mainland by a narrow strip of water. The fort is so constructed as to render a landing by an enemy possible only by climbing up the embankment. It commands a view in every direction, so that surprise would be impossible to a watchful garrison. The embankment which constitutes the fort is 470 feet long, with a uniform height of four and a half feet. It is ten feet wide at the base and four at the top. The creators of this fort have left no trace of their identity, or of the period of its construction, but being situated in the Huron country it is, no doubt, a work of that tribe.

A second fort somewhat similar to that above described is situated in the County of Lambton, about two miles inland from the River St. Clair. This fort consists of an oval embankment eight hundred and twenty-four feet in circumference, the inside is one hundred and eighty six feet across at the widest part, and its length is three hundred and twenty-six feet. The embankment in this case is six feet thick at the base and three at the top. There are two entrances to this fort, each about three feet wide, one facing the northeast and the other opposite. On digging inside we found broken pieces of earthen vessels, the bowl of a small pottery pipe and a flint head. The specimens of pottery were similar to those usually found among Indian relics. This fort closely resembles the one described in Lake Couchiching, and I think they were constructed by the same people. Dead trees were lying on the embankment which must have seen some three centuries ere they fell.

A fort of unique and singular construction is situated in the County of Elgin. It is the most interesting work of defense I have examined in Canada and bears a strong resemblance to works described by Squier and Davis in their valuable book entitled the "Mounds and Monuments of the Mississippi Valley." The fort measures four hundred and twenty-eight by three hundred and twenty-five feet, the measurement being taken from the interior embankment. It is of a somewhat oval form. Two walls of earth and two entrenchments surround this fort. The external wall has a uniform thickness of from thirty-five to thirty-eight feet; the interior is somewhat smaller, while the larger ditch, which is situated between the two embankments, is twenty feet wide and five feet deep. Inside this large ditch a ledge some five feet wide runs completely around the fort, which was so constructed that a man could lie on it full length and be protected by the external embankment, which apparently had been made some two feet higher than the ledge. This style of construction, so far as I am aware, is unique. An invading enemy in order to gain an entrance would have first to get over a ditch, then to climb a wall and there encounter a row of men lying flat on the ledge, while behind them would be standing another row. If the enemy managed to get through this part of the fort, they would have a second wall to climb before they could reach the fort proper. A creek runs along the western limit, encompassing part of the artificial ditch, but does not break the embankment which terminates at the northwestern side of the fort in a steep valley some sixty feet wide.

This valley affords the only apparent entrance, except at the southwestern corner, where the embankment seems to be somewhat lower, as if a gateway had been there. An intelligent farmer who had lived near the fort for twenty-eight years informed me that human bones were frequently found, at one time, in the immediate neighborhood. I obtained some broken specimens of pottery, flint heads, bones of animals, three stone axes, and a stone pipe from this locality.

This ancient fort, being constructed on altogether different principles from the other works of defense found in Canada, I am inclined to class it as a work of the Mound-builders, and believe it remains as a solitary monument of the farthest eastern point inhabited by that ancient people. It has all the appearance of great age, its thick walls of earth and deep intrenchments having alone preserved it from the devastating hand of time. There are gigantic trees growing in the fort, on the embankment and in the intrenchment, several of the largest having grown subsequently to the construction of the work. Many of them measure more than eight feet in circumference; while one of the largest is eleven feet, three inches, and must be nearly four hundred years old.

The position of a fort which I have not as yet described invests it with exceptional interest. It is situated in the County of York on an elevated region styled "The Ridge", which con-

sists of hills, about one and one-half miles wide. This ridge constitutes the dividing point between the rivers which rise within its borders. Those to the north of it flow into the northern lakes, and those to the south into the southern lakes. It would have been impossible to have selected a better site for a stronghold. The fort crowns a solitary knoll, which is separated from the adjoining hills by a precipice about one hundred feet high, and unless the garrison were overpowered by numbers, the fort might be regarded as impregnable. Trees of great size are growing within and around it, some of which having been uprooted displayed to view relics of various kinds. Hundreds of bodies have been disinterred immediately outside this fort, owing to the construction of roads in the neighborhood. The circumstance of their being no evidence of interment within this fort, while the remains of the dead of all ages extend to the distance of half a mile to the southwest, west and northwest of it outside, leads to the conclusion that its defenders must have been conquered by overwhelming numbers. The area of the fort consists of about eight acres. There are traces of a ditch which originally surrounded the embankment, but no other evidence of its having been circumvallated. The ordinary evidences of occupancy were found within, such as pipes, pottery, flint heads, stone axes and ash piles; also a great quantity of human bones, the remains of old and young, male and female.

The site of an aboriginal village, situated as it generally was on the brow of a hill, at the foot of which was a stream, is an interesting locality for the antiquarian to visit. The Indians seem to have had an eye for scenery, choosing the most picturesque spot; and one which would command a view of the adjacent country for miles. Liable, as they always were, to sudden attacks, such a precaution was necessary as a safeguard against surprise; but, independently of this, they seem to have chosen positions where Nature stood out in all her grandness. These sites are now becoming fast obliterated by the plow of the husbandman.

Editorial.

THE ARCHÆOLOGISTS AND THE GEOLOGISTS.

There are several problems before the archæologists of America at the present time, which demand the utmost candor and care in order to solve them. They are problems which involve such subjects as: the antiquity of man; the origin of the species; the rise of civilization; the progress of human society; the beginning of art and architecture; the development of written language; the organization of government; the position of the family; the source of religious customs. These hinge together in such a way that the solution of one has a great effect upon the others. The array of subjects is certainly very formidable, and the responsibility of grappling with them is almost appalling. Hitherto, the archæologists have been inclined to leave these subjects for other departments of science to answer. The sociologists have for many years been speculating about them, but have as often led the public into serious errors as they have into the truth. The zoologists have been chary of them; for their department had more to do with the animals and plants, especially in their organized growth, and has not reached up to the question of man's first appearance. Just now the investigations of American geologists have struck upon fields where archæologists have found the footprints of man. We have been pressing them for a decision in reference to the gravels. It has not come to us in an answer which is entirely satisfactory, for the disputes have arisen which almost drown the voices, and we catch no very distinct utterance. The contentions that have arisen do not seem to be advancing the truth.

The disputing parties have turned right about face. Bible students are contending for a longer time than the government geologists are inclined to grant; but the date of man's appearance is not put as far back as most of the scientists would expect. The question is, as to the responsibility of the archæologist. All of these problems have relation to man and his progress, and properly come under the department of anthropology. Now there is no other continent which furnishes a better opportunity for studying this department than America; but it is in the combination of archæology and ethnography that we learn the history of man on the continent. It may be that the new department of science called "geomorphology," will assist in deciding one question—the antiquity of man; but nearly all other problems the anthropologists have exclusively to themselves.

This makes the subject of prehistoric archaeology in America more important and throws responsibility on the specialist. In reference to all the problems mentioned above, there have been such variations of opinions in the course of twenty five years that one grows cautious and is slow in accepting the decisions of others. It is well that there are two parties in nearly all the branches of science, for the opinions of one may be set off against the other, and the facts are likely to be brought out more clearly by these means. We learn this, however, from experience: that it is useless for those in one branch of science to wait for a decision from another department. Every branch of science has its own field, every specialist his own mission; every study its own results. The archæologist may assert his independence, exercise his own judgment, meet his own responsibilities, and, with all due respect for those at work in other fields, define his own boundaries and understand his own limits. A few discoveries may put parties now in contention in an entirely different attitude, and the answer come to us which will entirely overturn our theories. The archæologists who have been seeking for information will find that it varies with the expiration of every season, and no special vantage ground is gained. It is a question, also, whether we should remain all of the time upon these borders. The fields are full and yield much better harvest than the corners of the fences. These little points, which seem to be so important when in dispute, are not turning points and should not be magnified. We have the whole continent to study and a wonderfully instructive field before us. Every department of anthropology is represented in America. With a virgin soil and an unobstructed vision, with very few complications and scarcely any accumulations from later history, the map of prehistoric America is the most suggestive of all sources of information. To this map we may go and find the answer to any of our problems. It may be the same answer Europeans receive when they dig downward into the depths of the earth, or it may not; yet it furnishes us a column, which is as reliable as that furnished to the geologist. The strata appear, as we pass over the continent from south to north, exactly in the order in which they would appear if we were going down beneath the surface in certain localities. We find the relics and remains, the symbols and ornaments, the tribal and religious customs, growing simpler and ruder as we traverse the continent, each one fairly representing the different ages and periods. These are as instructive in reference to the culture periods and many other subjects which we are investigating, as are those which come from deep explorations, and we conclude that the study of the map will be as profitable as the study of the uncertain horizon of the gravel beds.

I In reference to the culture periods, the map of prehistoric America is very instructive. It may not give the same divisions

into ages; at least, not the same tests for the divisions. Yet other tests are furnished. We have been accepting the European divisions into paleolithic and neolithic, but as archæology is now in America, we doubt whether it is important. The culture periods, or culture grades, at least, can be ascertained without any assistance from the study of the paleolithics, which are now in dispute. We do not need to ask any one's opinion in reference to these. If we were to decide as to dates and were thinking only of the time which had elapsed since man first appeared upon this continent, we might be dependent, but that does not decide the question of the antiquity of man in general. If it is only a question of culture without regard to the time, we can dismiss this intruder called the paleolithic age, and solve our own problems from the study of the different phases of what is called in America the "stone age," without dividing it into paleolithic or neolithic.

The point in dispute now is whether the rude relics found in the gravels can really be classed with the paleolithics. Scarcely any of them are found in connection with the bones of extinct animals; very few are found at any great depth; there are no traces of fire in connection with them. The bones of man are conspicuous by their absence. A few maintain that animal figures or totems can be recognized in them, but this needs confirmation. In America there are so few paleoliths on which he can establish a culture period that the American archæologist is perhaps justified in ignoring for the present the whole subject. He can afford to do this, for nothing is really at stake, and he saves himself much perplexity in reference to certain disputed points.

In Europe this age seems to have been established by the co-operation of the geologists and archæologists a number of years ago. There has been no uncertainty there, from the geological standpoint; the main question has been how far archæologists could or should carry it. Some have gone to great lengths. They have taken the rude relics out of the gravel beds and caves and then have sought out similar relics in all parts of the earth. They have found them upon the chalk hills of England, on the desert sands of Africa, in the midst of the megalithic monuments of India, in remote regions of Asia; wherever they have found any relics which had the evidence of fracture, they have imagined they were paleolithics. Some have been blind even to the distinction between the rude and the finished flint relics. Such has been the case in this country. Mr. Samuel Aughey found a neolithic arrow-head in the loess of Nebraska, and called it, on account of its position, paleolithic; and Prof. Wright takes the steatite ollas, pestles and mortars found in the auriferous gravels and places them before the paleolithic age, though he leaves the geological date uncertain. The archæologists have not endorsed these conclusions. The neolithic age, in their opinion, did not precede the paleolithic. The division into the stone, bronze and



SOCIOLOGICAL MAP OF AMERICA.



ARCHÆOLOGICAL AND GEOLOGICAL MAP.



ETHNOGRAPHICAL MAP OF EUROPE AND ASIA.

are to be classed with the western tribes rather than the eastern, and the line of progress should be traced from the northwest coast to the mountains of the interior. We may imagine that this is the route by which the people migrated, and that the structures of the northern tribes lead up to the architecture of the central regions by lines which are now unseen. We do not know this, for the grade of society found among the pueblos as well as the state of architecture are in strong contrast with anything found elsewhere. The development was unique. These tribes were isolated; they were evidently very ancient. We can not trace the elements of culture to any other region. It was a distinct stage, as distinct as any step in the great pyramid. The pueblo style of architecture fills one particular region of the country, and is peculiar to it. It is the architecture of the great plateau of the west.

The next step is represented by the Nahua race. We may call them Aztecs, Toltecs, Miztecs, or any other name, it matters not. The history of the race and its connection with the Maya race at the south has been studied by many authors. The style of architecture is unique, the state of society peculiar, the type of religion unlike any other. The field is a rich one, and full of problems to the archaeologist and ethnologist.

The next step will be represented by the Maya culture. This blossomed out in the midst of the rich plains of Honduras, Yucatan, Nicaragua, and was full of barbaric magnificence. We know little of the religion of the people, but imagine it was less cruel than that of the Aztecs of Mexico. The origin of the art and architecture is unknown. Some imagine that they can trace a resemblance between the symbols of Central America and India and Egypt. Prescott, Humboldt and Stephens all recognize the resemblance. The line of transmission is very obscure. It and was given by any single traveler, or by any colony from either the East or the West, history has no record of it, and tradition does not even mention it. In Peru we find dolmens that remind us of the same structures in Great Britain, Europe, and India. It may be that the early culture of India was transmitted, and the megalithic monuments of Peru were the result. The art of Peru was fully equal to that of Central America and Mexico. This view of the map of prehistoric America, under the figure of a pyramid, shows us how magnificent a field is presented to the archaeologist for his earnest study. The fascinating influence comes after we begin to read the story, though we are very slow in learning the rudiments. The system Mr. L. H. Morgan has given fits remarkably well into the geography; and the prehistoric map of America wonderfully illustrates the different stages of human growth. The social status is divided into first, second and third grade of savagery; first, second and third grade of barbarism; and two grades of civiliza-

tion. The social grades seem to be dependent upon the means of subsistence, the material surroundings and other physical causes, such as climate, soil, material for building, means of communication, facilities for travel, character of boundaries, separation from other people, etc. The ethnic character was the result of environment, according to this writer. The system with its details cannot be given here; but the art and architecture are prominent factors, and they vary with the growth of society.

III. The race question has come up in Europe. It has been a disturbing subject. It has unsettled the science of ethnology. Very few seem to know the origin of the races. The Semitic scholars are better satisfied with their discoveries than are the students of the Aryan race. The three races, Aryan, Turanian, and Semitic are, however, still visible; they appear in different places. The lines of migration are different. The race centers are different; and yet the old names are retained. Mr. J. C. Ball* maintains that the old Accadian language was the same as the Egyptian and Chinese. Dr. A. H. Sayce says that the Hittites belonged to the same race. These were all Turanians. Mr. Isaac Taylor classifies the Etruscans with the Turanians. Dr. H. Hale and others say that the Basques, Iberians were Turanians. What shall we say of the American aborigines? The study of the American languages seems to have developed the theory that they were a distinct and separate race. Others, such as Dr. J. C. Meggs and Sir Daniel Wilson, hold that there were three or four distinct races. The evidence is that the American race was more recent than many of the Asiatic races; and that prehistoric works here began to be built long after the historic age in Asia. Science gives no satisfactory explanation of this, but Asia seems to be the starting point of all the races.

The evidence is increasing that the historic races flourished in these southern Asiatic regions before any race appeared in the the northern regions. J. Stuart Glennie† maintains that a white race distinct from the Aryan and preceding the Semitic once lived in the region north of the Caspian sea and east of the Ural, and that the dispersion was caused by certain geological changes. This is for geologists to determine, but archæologists generally maintain that the ancient Turanian was followed by the Aryan race west of the Ural mountains and the by Semitics at the south. See map.

We ask the question whether the Turanian race, which spread so extensively through Europe, Asia (the Dravidics were Turanians), and Polynesia, and so were the aborigines of Europe and Asia, might not have spread also into America. The Aryan race is modern compared to the Turanian. Aryan civilization is recent. The Semitic race was at an early date much more ad-

*J. C. Ball, "The Accadian and Chinese Language," proceedings of the Society of Biblical Archaeology, Feb., 1890, page 207.

†J. S. Stuart Glennie, "Aryan Origins", Contemporary Review. Dec., 1892.

vanced than the Aryan. Semitic civilization intervened between the old Turanian and transmitted it to the Aryan.* Greece and India received an Aryan culture, but Europe was a wild, uncultivated region long after Semitic empires had declined in Asia. The Aryans were so late in their development that they could remain in their northern seats and leave only the lake-dwellings and barrows and megalithic structures as their monuments. The Turanians were earlier than this; the Americans were earlier. Civilization appeared on both sides of the Pacific at a very early date. American civilization was earlier than European. The south of Europe was in civilization at the opening of the Christian era, but the north of Europe was in its primitive savagery. The civilization of Central America, Mexico and Peru, the barbarism of the Mound-builders and the semi-civilization of the Cliff-dwellers and Pueblos will probably date back as early as the Celtic history in Europe. The Norsemen were beginning to move toward Great Britain about the time that the southern Mound-builders were building their pyramids in the Gulf States. The Norman conquest occurred about the time that the wild tribes came down upon the Mound-builders and drove them from their chosen seats on the Ohio River. The megalithic monuments of Peru, so similar to those of India, of Japan, and of the north of Africa and Europe, would indicate some Asiatic race had reached America. This may have been the Turanian race who were the great builders of the whole world.

The tinge of a higher civilization appears in the monuments which are scattered along the Pacific Coast, from Mexico to Yucatan, and from Yucatan to Peru, which bears comparison with that which is recognized in the cave temples of India and pagodas of China, though the connecting links are not plain. The monuments found in Micropesia consisting of pyramids, temple enclosures, fortifications are very ancient, but they are unlike either those in India or America. Still, the civilization which appeared on both sides of the Pacific was much in advance of that which appeared on either side of the Atlantic.

The evidence is that if man did not appear earlier on the Pacific coast, he at least had reached a higher grade of civilization than upon the Atlantic coast. If the development from a state of savagery was unaided by contact with other older races, we must allow a much longer time for the inhabitants on the Pacific coast than on the Atlantic, and give an intermediate date to the cliff-dwellers and pueblos of the interior.

*W. J. Moore, "Comparative Chronology," in *American Anthropologist*, October, 1902. The extension of semi-civilization in the Orient and in Africa while archæologists in Northern Europe and America, dispose most of the geologists to carry back the date of the glacial invasion to twenty thousand or fifty thousand years. The conflicting claims of physical sciences, astronomy, history and geology, cannot fail to reduce the estimates of the antiquity of man from the common standpoint, stratigraphic, geological and paleontological. The improbability of human existence in the early Tertiary waves well towards an impossibility. It is inherently improbable that man existed beyond the middle of the pleistocene.

IV. The question of the antiquity of man may be settled by the joint study of the three classes of scientists—archæologists, geologists and zoologists. A consensus is desirable. European archæologists have been claiming great antiquity for paleolithic man, but are not entirely agreed. M. de Nadaillac, who is an advocate for the division between neolithic and paleolithic, but who would dismiss the bronze from America, says that pottery is found among the paleolithic relics of Europe. This leaves the European archæologist even uncertain as to his evidence, whether a relic is really paleolithic, for the testimony in reference to the extinct animals and the nature of the gravel is neutralized by the pottery. The excavations by M. Dupont of the Meuse and Lesse have brought to light fragments of pottery in connection with bones of paleolithic animals. Schmerling found fragments of pottery in the Engis cave and in the cave at Spy. M. Fraipont found similar fragments. M. Virchow maintains that the tertiary man is not proven, that while the skull of the man of Spy is of a low grade, yet the discovery of pottery shows that he belongs to the neolithic age, and the skull itself has a capacity equal to that of many others that may be classed as superior.

The date of the glacial period is now computed at less than ten thousand years, which is about the length assigned to the historic period. In Chaldea the date of history has been carried back nearly five thousand years. If we place the antediluvian world before the Chaldean Empire we shall have history extending back of the glacial age. Genealogical history; as given in the bible, which is acknowledged to be the best book upon the subject, requires about seven thousand years.* How shall we account for the distribution of the human race over the whole globe? The ordinary student would say that the existence of man must have been later in America than in Europe, Asia or Africa. The existence of preglacial man in Europe would require an older date for man than in America, unless we revolutionize our science. History certainly began earlier there, and we should expect geology to be as early in its record. Archæology goes back further.

*"The Antiquity of Chinese Civilization." See McGee's article in *The Anthropologist*; *The Chronologist* run back to the era of Yau, 4288; *The Hindoo*; *The year of Dillejug*, 4992; *The Jews*, 5885; *The Greek Church*, 7400.

The Olympiads 2,867, Roman, 2,641, Era of Nabonassar, 2,638, American geologists, N. H. Winchell and F. G. Wright, 10,000. Five thousand years ago the builders of the Pyramids established the solar cycle of one thousand four hundred and sixty-four years' length. Two thousand years ago the Chinese and Hindoos a cycle of four thousand six hundred and seventeen.

NOTED ARCHÆOLOGISTS.

The world of science and letters has been called upon during the past few months to mourn the loss of several of its most distinguished scholars and heroes, and among them several noted archæologists, in Europe as well as in this country. We may say that no two men could be mentioned in either country whose names have been more prominent than those of M. De Quatrefages of Paris, and Professor J. S. Newberry of New York. Both of these gentlemen were originally devoted to other departments of science and came to the field of archæology, one from the side of zoology, and the other from geology; but both accomplished much toward the upbuilding of the new and great department which is now so likely to be the most prominent of all. They are entitled to the utmost respect and the kindest feelings for the work they have done. Both of these gentlemen were remarkable for their breadth of mind and for their clearness of comprehension, and for their devout spirit and their entire freedom from any taint of iconoclasm, which has a tendency to impel one to tear down the work of others for the purpose of building one's self up.

Professor Quatrefages was a professor of Natural History in the Museum of Paris for nearly forty years. He was born at Berthe-Benne, France, February 10th, 1810, and was, at the time of his death, over eighty years of age. In 1838 he was appointed Professor of Zoology at Toulouse, and made some especial studies of the rodents. He afterwards went to the Museum of Paris, and was there associated with H. Milne Edwards. He then gave himself to the study of the invertebrates. In the year 1882 he was appointed Chevalier of the Legion of Honor and was elected a member of the Academy of Science, taking the place of the distinguished Savigny. His best work was in the department of Anthropology. He was a believer in the variety of the species, and held the opinion that man constitutes the *fourth kingdom* in nature. His views found expression in the "Report of the Progress of Anthropology in France", in 1867, and, in his later work, "The Human Species", published in 1876. He has written extensively on human craniology, soliciting the co-operation of such men as Dr. Hamy and others. Mr. de Quatrefages was distinguished for his genial disposition and kindness, for his independence and freedom from all sectarian notions on one side, and from the evils of agnosticism on the other. His death was a positive loss to present science.

The death of that remarkable man, Sir Daniel Wilson, is so recent that we are unable at present to do more than mention

his name; but we hope, at another time, to give a tribute of respect to his memory.

It will, perhaps, interest our readers to look upon the portrait of Professor Edward A. Freeman.* This gentleman has not been generally recognized as an archæologist, but we learn from a review of his life that in the early part of his literary career he was especially interested in that subject and wrote several essays upon it: one, entitled *Essay in Window Tracing*; another *The Architectural Antiquities of Gower*; *The History and Antiquities of St. David's*. He was born in Staffordshire, in 1823. Entered Oxford when he was eighteen; was elected fellow when he was twenty-two. He spent his vacations in long rambles among the old cathedrals. After leaving the university of Oxford he went to Spain and Southern France, and traveled about the small and unfrequented towns, there finding traces of the Saracens. In 1886 his lecture on the history and conquest of the Saracens was published. He was engaged in gathering material for a history on the Norman Conquest at the time of his death. He has written much on historic subjects, and, in fact, all through his life, seemed to be devoted to that department of history which bears hard upon archæology, although his history covers almost every age and department.

The portrait given as a frontispiece in this number carries us back of the immediate present, but at the same time reminds us of another prominent member of the generation fast passing away. Prof. S. S. Haldeman was a resident of Chickies, Pa., near Philadelphia, and died at his home in that placé, in 1888. He was a man of letters, but had a very great taste for archæology. His penchant was collecting beads and pottery. His articles in *THE AMERICAN ANTIQUARIAN* were devoted to identifying the relics of the prehistoric age with the description of historic times, as those of Professor J. S. Newberry were devoted to identifying the mines and relics of ancient peoples, the two men coming to the subject from opposite directions.

Professor Haldeman and M. de Quatrefages were quite as different in character as they are in appearance. In fact, the chief resemblance between the two consists in the fact that both gave themselves to the advancement of archæology at a time when that science was in the first stages of its progress and while the strongest efforts were needed to establish the foundation principles. M. de Quatrefages, however, came into the field from the scientific side, rather than from the literary, and for this reason, perhaps, made much the deeper impression.

*We are indebted to Messrs. Fowler, Wells & Co. for the wood-cut of Professor Freeman, as well as for the cut of M. de Quatrefages.



PROF. L. L. DE QUATREFAGES.

of maps, diagrams and illustrations. We know of some nations of ancient times among whom the spiritual callings of mankind were still undivided and in the power of one class of men. The *vates*, as the Romans called them, were simultaneously poets, soothsayers, medicine-men and popular leaders. In some American tribes we observe the same want of subdivisions, but among the higher organized tribes the spiritual interests are subdivided among two, three or up to five classes. Thus the medical profession among the Maskoki or Creek Indian counts up the *uwa'lalgi*, the *hili's-haya'gi* and the *aliktchalgi*, whom we can best designate as the diagnosticators, the compounders of medicine (or druggists) and the pathologists. Among the Ojibwe (or, as Dr. Hoffman spells the name, Ojibwa) there are four classes of men which can be regarded as medical practitioners. One of them are the Wabeno or "men of the dawn," because their fire-dealing ceremonies generally terminate at the dawn of the day. Another class is formed by the Jessakid, who are the revealers of hidden truths, the seers and prophets; they undergo no initiation; their gift is given them by the thundergod or thunderbird, who counsels evil, and this evil is averted by the men of the Mide-class. The third and most important class is formed by the Mide or shamans, who are of both sexes, and whose spirits or manitus surpass in efficiency those of the Jessakid. A fourth class is made up by the herbalists or Mashkitikew-inini, of whom many are females. The "Grand Medical Society" is formed chiefly by individuals of the Mide-class and is subdivided in four degrees, each of whom has its special arbor-like meeting place, or midewigan, its own ceremonial, especially for initiation. Not all of the Jessakid-men belong to it, and still fewer of the Wabeno. The northern tribes or bands of the Ojibwe have the *otter* as the symbol of their Midewiwin, the southern ones the great miges, which is a sacred medicine bag made of an *otter-skin*. It is probable that similar organizations once existed among the other tribes of the Algonkin linguistic family, although Hoffman mentions as such the Menomonee Indians only. The rite of the Midewiwin was given by the great spirit or Kitchi Manito to Minabozho for appeasing the discontent of this spirit, who is regarded as the servant of Kitchi Manito, and whose name is rendered by "Great Rabbit." The brother of Minabozho was destroyed by the malevolent underground spirits, and he now rules the abode of the shadows; he is the chief in the "land of the midnight sun". The institution of the "Great Medical Society" is still in full vigor among the northern people. The influence wielded by the Mide generally is beyond belief, especially when they have reached the fourth degree. The initiation into any of the four degrees takes place toward the end of summer, and is regarded as a memorable epoch of the year by the young and old. The participants paint their faces in a manner peculiar to each degree, and the author gives splendid illustrations in color to show how this is done. There is also a special paragraph on initiation by substitution (p. 285). The details mentioned by Hoffman are of the most consummate interest; there are charts on mythic descendencies and traditions; the origin of the Anishinabeg or human beings, and the bark records of the Mide-priests are other topics which no ethnologist can afford to ignore.

PROF. ADOLF BASTIAN'S TRAVELS IN INDIA.—The philosophical systems of India and other eastern countries have just been presented to the studious public in a new shape by Adolph Bastian, the director of the Archaeological

Museum in Berlin. His "Ideale Welten in Wort und Bild" contain the results of his two years' travels in India (1890 and 1891), ethnographical as well as philosophical, the title of the three learned volumes being about equivalent to "imaginary worlds" or "mytho-theological speculations." The first volume, "Travels in East India, made in 1890, for ethnologic studies and collections," richly illustrated, is followed by volume second, "Ethnology and History in their Points of Connection, Partly Relating to India"—whereas volume third deals exclusively with the "Cosmogonies and theogonies of Indian religious philosophic systems, especially those of the Jainists." Berlin, 1892, Emil Felber, publisher; 22 plates, 900 pages. The cosmogonic systems of India differ considerably among themselves. World-creation is often followed by immediate destruction, and when the Brahmanic pious penitents withdraw to their upper heaven, others of their class are still engaged in destroying what is around them. In the Buddhist system over thirty skies are piled upon each other, and the heights up to which destruction by water, or by the fiery element, has to occur is regulated with accuracy. Where the sky touches the earth, there on the horizon begins creation. The details of the Hindoo systems are well-nigh inexhaustible, and the supputation of years in their celestial chronologies embraces not thousands, but hundreds of thousands of them for one era or dynasty. Their metaphysic and theogonic theories seem but vagaries and form an enormous contrast with the sober systems propounded by the Chinese law givers and wise men. The more characteristic features of both are represented graphically in the plates, and show many analogies with our mediæval paintings of heaven, purgatory, creation and the flood. The rest of Bastian's own travels occupies but a limited space in the books before us, but by his comparative method large room is given to the discussion of analogies of India with Greece's, Japan's and Polynesia's cosmogonies and the theologies of other parts of the world.

" *Cosmos* ", a spirited ethnologic and geographic weekly periodical published in Braunschweig, Germany, has gained a well-merited reputation by its interesting contributions from all parts of the globe. The editor, Prof. Dr. Richard Andree, is doing his best to accompany them with photographic portraits and views of the sights described, and also inserts many articles of his own into the weekly, which has just begun its sixty second volume (two volumes a year). North and South America are not neglected. Since the beginning of July there were articles printed on Navigation of Brazilian Rivers; Decipherment of Maya Codices; Indians of the North-western Coast; Emblems found in Mounds of the Gulf States; Archaeology of the Poccatpetl; History of the Niagara Cataract; Earthquake in China; Types of North American Indians.

ROBERTO RY GROSSEKOPF, who is perhaps the most industrious and active linguist of our epoch, has contributed to the acts of the *Congres des Americanistes*, held in Paris, 1890, a memoir on the Baniva language, which is spoken on the Rio Negro, a river connecting the Upper Orinoco with the Amazon. Our author has utilized four vocabularies, embodying several dialects of this rather vocative language, which belongs to the extensive South American family variously called Carib, Maipure and Arawak. The first of these three appellations causes confusion and should be discarded at once; the name Maipure—which means *caiman*, points to the central loca-

tion in the group and is preferable. A list of the Maipure dialects is given by de la Grasserie on the first page; the most of them are spoken in Brazil, the Moxo and the Baure in Bolivia. They all belong to the *Nu* languages of C. von den Steinen, because their personal pronoun *I* is expressed by *nu* or *no*, also the possessive *my*, *mine*. The second person, *thou* and *thy*, *thine*, is marked by the sound *pi*, *pe*. The author has gathered over a thousand nouns and verbs from his sources, but as we have no texts, no grammatical sketch of Baniva can be attempted as yet. From R. de la Grasserie's pen we have also received a pamphlet of 31 pages: *Des recherches récentes de la linguistique relatives aux langues de l'extreme Orient*; Soc. de. Linguistique, VII, 3d number, 1891. Also, *De la possibilité et de conditions d'une langue internationale*; Paris, Maisonneuve, 1892, pp. 56.

COUNT HYACINTHE DE CHARENCEY has remitted some pamphlets embodying his latest studies in the fields of European and American linguistics. His titles are as follows: (1) "Sur quelques étymologies de la langue basque;" in *Congrès scientifique international des Catholiques*, 1891, pp. 11. (2) *Phonétique Souletine*; i. e., the phonetic portion of the Basque dialect of Soule, Southern France, pp. 56. (3) *Des suffixes en langue quiché*; Caen, 1892, 8°, in *memoirs de l'Académie de Caen*, pp. 76, treats of the well-known Maya dialect of Kiche, the most important of all the Guatemala languages of that family. (4) Reprint of Padre Ripalda, Soc. Jesu, *Catecismo y expocición breve de la doctrina cristiana*; translated into the Yucatec or Maya language by Padre J. Ruz in 1847. In *Actes de la Société philologique de Paris*, Tome 21, année 1892, pp. 50. (5) This reprint is preceded by the vocabulary of one of the Melanesian dialects called Wagap, spoken in the northeastern parts of New Caledonia; divided in two sections (a), Français, Wagap, Anglais, Allemand; (b) Wagap, Français. Both sections occupy the first 152 pages of the same volume, the twenty-first.

THE CONTRIBUTIONS TO BAVARIAN anthropology and prehistoric research contain part of the Transactions of the Munich Anthropological Society and have now reached their tenth volume under the able editorship of Prof. J. Ranke and Nich. Rudinger. The two first instalments of the tenth volume are illustrated with thirty plates and are exclusively dealing with craniology. John Ranke's article, "on some regular relations between the brain, the frontal part and the basis of the skull," is subdivided in three sections, and gives the author's observations on the skulls of monkeys, dogs, human skulls, human adults, human embryos and the phenomenon of prognathism so universally observed among all races of mankind. This phenomenon is subdivided into normal and pathologic prognathism, both showing alternation between a more orthognathic and a more prognathic position of the upper jaw of the human subject. The report embodies 128 pages in small folio, and was published in 1892, in Munich.

BOOK REVIEWS.

Manners and Monuments of Prehistoric Peoples. By the Marquis de Nadaillac. Translated by Nancy Bell. G. P. Putnam's Sons, New York and London. 1892.

It seems singular that a French archaeologist should be teaching the English and American people in reference to the archaeology of their own lands. The Marquis de Nadaillac does this as successfully as any one could, but the disadvantages of distance will have their effect notwithstanding the ability of the writer. This was apparent in the former work, entitled *Pre-historic America*, and is also manifest in this book, inasmuch as it is devoted to a more general subject.

The author treats of the Stone Age, and maintains that there never has been a Bronze Age in America, and prefers the division into a paleolithic and neolithic periods. He differs from some American archaeologists. He repeats the statement made in the first book "that the shell of the glyptodon was used as a roof to the dwellings of primeval man," and maintains that the early inhabitants of America had to contend with powerful mammals and fierce carnivora, both of which assertions remain to be proven. He says that excavations in a rock shelter, in Alaska, yielded a harpoon, which lay side by side with some of the most ancient quaternary mammals, but does not give his authority. He seems to confound the bone relics in the mounds of America, some of which are modern, with those found in the caves of Europe, which are generally very ancient. Otherwise than this the book is an excellent summary of the present status of archaeology in Europe and furnishes a great amount of information about the prehistoric antiquities of that continent. The last chapter contains an account of the discoveries by Schlieman in Hissarlik, which is valuable for its illustrations and contents, but mars the chapter by citing the Pemberton stone hammer by way of comparison, as if it were a genuine relic. There are specimens enough in this country which contain the Swastika, and *THE AMERICAN ANTIQUARIAN* has referred to them repeatedly, so that there is no reason for the author to go back so far and take a doubtful relic for comparison. The absence of American authorities from the notes is a striking feature of the book. Our readers who desire a summary of European archaeology and are posted on American will find the work exceedingly useful, as the author is well informed as to the technicalities and details of prehistoric science. He has brought together the facts in reference to a great variety of tokens of all ages from the caves, kitchen middens, lake-dwellings, megalithic monuments, including the idols of Easter Islands, ancient boats from Denmark, weapons from the caves of France, clothing from lake dwellings, the nurhags from Minorica, monoliths from Orkney Islands, bronze objects from Siberia, relics from Caesar's camps, and vases from ancient Troy. It covers a wide field and presents a great variety as the result of his gleanings.

The Lost Atlantis, etc. By Sir Daniel Wilson. MacMillan & Co., New York, and David Douglas, Edinburgh, publishers. 1892.

This book is the crowning work of a busy life. Sir Daniel Wilson was the president of the University of Toronto. He was the author of several

notable works and a learned man in the department of archaeology. This his last book was finished just before his death. The preface was written by his daughter. It is a collection of monographs on such subjects as trade and commerce in the Stone Age, pre-Aryan origin of American man, the æsthetic faculty of aboriginal races, the Huron and Iroquois, relative racial brain weight, etc. The title is fanciful and not descriptive, for the attempt to trace a connection between Europe and America is criticised by the author and is not regarded as established. The reader will find the generalizing habit of Dr. Wilson continued in this volume, but it is a habit regulated by sound sense and not given to visionary speculation. The book is published without engravings and does not contain a portrait of the author. Aside from this it is a model of neatness and elegance.

The Iroquois Trail; or, Footprints of the Six Nations, including David Cusick's Sketches. By William M. Beauchamp, S. T. D. Printed by H. C. Beauchamp, Recorder Office, Fayetteville, N. Y.

The reprinting of David Cusick's Sketches has been demanded for some time. Rev. Mr. Beauchamp has met the demand and added to the "reprint" over a hundred pages of notes. There is one deficiency about the volume—it does not contain the cuts. These could be easily secured from the Bureau of Ethnology and should have been added.

Mr. Beauchamp, the author of the notes, is authority on Iroquois history and New York archaeology. He is a wonderfully patient investigator and a sound scholar. His writings are well known through the medium of THE ANTIQUARIAN, but much of his literary work remains unpublished. Such authors and scholars should be encouraged by the public more than they are, for they are great benefactors. If a fraction of the money which has been laid out on the natural history of New York could be given to the publication of aboriginal history and archaeology, it would be a great credit to the state.

The Beginnings of New England; or, The Puritan Theocracy in its Relations to Civil and Religious Liberty. By John Fiske. Boston and New York: Houghton, Mifflin & Co. 1892.

Walter Raleigh in writing history thought that he must begin with the creation of the world and so never finished his work. Mr. John Fiske is more successful. He dates the beginning of New England with 476 A. D., and draws the contrast between the Roman idea and the English idea, giving the first chapter of forty-nine pages to this subject. The Puritan exodus is given in the second chapter, and the planting of New England in the third. These were purely and exclusively English. The short lived New England Confederacy was also among English colonists. The causes that broke it up were mainly religious differences. The fifth chapter treats of King Phillip's war and contains a review of the missionary work. The author thinks that the Puritans were as kind as the Quakers in their treatment of the red men, but the explanation is found in the jealousies between the Indian tribes. The wild tribes imagined that the converted Indians were only adopted by the whites to increase their military strength and their civilization was looked upon with disfavor. This is the most interesting part of the narrative. The book ends with a review of the religious sentiments and beliefs of New England, and gives a very good picture of the Puritan character. The most questionable part of the book is that which treats of witchcraft, but the author is careful

in avoiding prejudices and in making rash statements and upon the whole is fair in writing the history of the times, and especially the history of the "delusion."

A Study of Greek Philosophy. By Ellen M. Mitchell. S. C. Griggs & Co. 1891.

This little hand book on Greek philosophy well fills a vacant place. Some such work was needed. She does not undertake to discuss the teachings of the philosophers, but gives a sketch of the different schools. The general reader can gather a clear idea of the drift of Greek thought, as each one of the philosophers is introduced in his order and the teachings of each explained. The work begins with Thales (600 B. C.), the Ionian philosopher, and ends with Proclus (412 A. D.) and the Neoplatonists, which thus covered a period of over a thousand years,—a long time for any ethnical school of thought to continue. It is not to be wondered at that the Greeks have had such an influence upon modern scholars, for their philosophy, their art and their literature form the connecting links between the ancient and the modern world and the channel through which the best products of Oriental thought has reached the Occidental minds. The book is neatly printed and beautifully bound and will be useful to any one interested in the study.

Days of Art in the Ancient World. By William Martin Conway. MacMillan & Co., New York. 1891.

This is a charming book and one which every archaeologist should have. It is an excellent summary of art in the Stone and Bronze Age, and contains also an essay upon the legacy of Egypt and of Chaldea, and of Mediterranean peoples, Etruscans and Phoenicians. It contains in the small compass of 185 pages a great deal of information. Its price is in the reach of every one.

Hindu Literature, or, The Ancient Books of India. By Elizabeth A. Reed. Chicago: S. C. Griggs & Co. 1891.

This work is written in an interesting style and furnishes a review of the ancient literature, mythology, cosmogony, stories and legends of the Hindus, as clearly as could be expected under the circumstances. The resemblances between the mythology of India and Greece is spoken of. The multiplication of deities is referred to. The second grand division—the age of the bronze—is treated in the fifth chapter. In the ninth there is a comparison between the Mosiac cosmogony and that of the Hindus. The descent of man from a single pair is a doctrine of both. The Ramayana and the Hind are also compared.

The Danube from the Black Forest to the Black Sea. By F. D. Millet. New York: Harper & Brothers. 1892.

Those who have been constant readers of *Harper's Monthly* will remember the series of articles upon the Danube. This series is now published in book form and constitutes a beautiful volume. It is more satisfactory to read a book connectedly than articles disjointedly. The book is also a work of art fully equal to the magazine, for the paper is heavier and the engravings come out better. It is almost like taking a voyage down the Danube to look at the pictures, for we see here the churches, the castles, the bridges, the waterfalls, the ferries, the rocks, the flatboats, the peasants, the monasteries, the ruins, the streets of the villages, the watch-towers, the

Hungarian cattle, the swine herds, the washerwomen and the water-carriers, the fishing stations, the Gipsy girls, the threshing scenes, the camps, Turkish vessels, Bulgarian shores and Bulgarian carts, the old mosques and wind-mills, just as the voyagers saw them. The volume is written in the itinerary form. Each day's experience is carefully recorded and the scenes are transferred to the page by the engraving and the letter-press. We see through three pairs of eyes—the eyes of the traveler, of the photographer and of the draughtsman. Nothing can exceed the correctness of the pictures except the scenes themselves. The Danube is out of the way of most of the tourists, but is very attractive at certain points. One passes from the cultivated to the wild and from the wild to the civilized again, and comes in contact with two or three distinct races and types of character, and begins to realize how diverse is the population of Europe. Trajan's bridge in ruins reminds us of Roman times, but the "Last Toilet in Camp" brings modern scenes to view.

On Canada's Frontier. By Julian Ralph. New York: Harper & Brothers. 1892.

This is a book which would attract the attention of the hunter and the adventurer, and will also charm the ordinary reader. The scene is laid in Canada, and the different chapters bring out the variety which may be found in that extensive domain. The inhabitants with which the traveler comes in contact are mainly Indians, half-breeds, voyagers, lumbermen, members of the Hudson's Bay Company and fur-traders. The game which is found are moose, wild deer, caribou, wolves, and occasionally bears. The fish is the speckled trout. The conveyance is for the most part the "bark canoe," occasionally the York sail-boat, though the dog-trains and toboggans are mentioned frequently. The traveler passes through dense forests; he traverses swift rivers, crosses large lakes; he lodges in Indian camps, log-houses, at trading posts, and in tents, under the shadow of great trees, and has a varying experience. Several Indian tribes are visited, the Black Foot, the Tinnehs, the Chinooks, though to the writer they seem to be all alike. The best part of the book is the engravings, for these not only bring out the beauty of the scenery, but also the features, dress, equipments, abodes, customs and surroundings of the different people. There are pictures of the Indians running races, engaged in clan dances and war dances, of the faithful missionary Father Lacombe and his people, of the hunters with their packs and accoutrements, of fishermen with their wrappings, of fur traders and the Indians in council, of the Courier de Bois and their friendly greetings to the naked savages, the titled gentlemen who made their home so long in the distant regions, of the many camps of hunters and the dog trains and the pack horses. The pictures which have most interested us are those of the bark canoes, three or four different patterns of which are given. There is no water craft that is more beautiful than a bark canoe in motion. It is as light as a feather and cuts through the water as the bird does the air. There is also a picture of the common dug-out, and two pictures of the big canoes of the Northwest coast. All of these canoes are propelled by the paddle; oars were not often used by the natives. The picture of the Hudson Bay man—quarter-breed—is true to life. Just such faces were once seen on the streets of St. Paul, for there was a time when these quarter-breeds came with their creaking carts drawn by a single ox, from the Red river to the Mississippi river to sell their furs and get supplies. It is well that these pictures are taken before other changes have occurred. These faces and forms set in the frame-work of the northern forests are brought before our eyes without the necessity of going such a long distance to see them. It is a wild life which has its charms.



DR. I. A. LAPHAM.

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PRE-COLUMBIAN COPPER MINING IN NORTH
AMERICA.

BY R. L. PACKARD, WASHINGTON, D. C.

The broad classification of the successive stages of culture of the prehistoric peoples of Europe into the stone, bronze and iron "ages" was based upon prehistoric finds, and is an induction derived from observation similar to that relating to the succession of the different orders of animals and plants in geological history. It is also confirmed, as far as bronze and iron are concerned, by ancient tradition, for in early historical times it was known among the Greeks that bronze had preceded iron at an earlier period, and this knowledge, passing to the Romans in a later age, was expressed in the line of Lucretius, which has been frequently quoted in this connection, "*Sed prior aeris erat quam ferri cognitus usus.*"

But there is evidence to show that the use of copper was independent of, if it did not precede, that of bronze, particularly in places where the metal was indigenous. This evidence consists in the discovery of copper implements and weapons, instead of or sometimes accompanying bronze, mingled with numerous stone articles of the same character in various places in Europe and the East. The prehistoric people had learned the art of extracting copper from its ore, and in some cases practiced it near the places where the metal was used for implements and weapons. Prehistoric copper mines have been reported from the Urals and elsewhere, and a circumstantial account of such a mine, which was discovered in 1827 near Bischofshofen in Salzburg, in Germany, has been published by M. Much, an archæologist who examined it in 1879.* The traces of the old workings, nearly obliterated after so long a time, had led to the establishment of a flourishing modern copper mine on the same vein, just as

*Die Kupferzeit in Europa und ihr Verhältniss zur Cultur der Indogermanen. Wien, 1890.

the trenches on the outcrops of the copper-bearing rocks in the Lake Superior district served as guides to modern miners in sinking shafts there. The Salzburg mine, however, was in copper ore and not native copper, and was a mine in the proper sense of the term, with extensive underground workings. The remains of small smelting furnaces, with slag heaps and other rubbish, were found in the neighborhood, in the midst of which were a few pieces of the copper produced from the ore on the spot by the prehistoric smelters.* No iron tools or signs of their use were found in this mine, which was assigned by the archæologist who examined it to the time of the neighboring lake-dwellers, who used its copper for weapons and tools. Another mine in the Tyrol, referred to by the same author, was also apparently worked to supply a colony of lake-dwellers situated near by.

It might be expected on both mineralogical and metallurgical grounds that copper would be used before bronze, and even before smelting was discovered, because copper, like gold and silver, is found in the native state in many places, while considerable metallurgical skill is necessary for the production of bronze. Moreover, bronze is an alloy of copper and tin, and, except in the comparatively rare cases where copper and tin ores occur together, tin would have to be transported to the copper smelters to produce the alloy. In North America,† while copper was known to the natives, bronze had not appeared at the epoch of discovery by Europeans, and neither smelting nor even melting was necessary for the production of the copper articles found in use by the discoverers.

The first comers to the northern part of this continent were struck with the absence of metals in the native weapons and implements, and found their place supplied by stone and bone. The inhabitants were in the neolithic stage of culture. They were, indeed, in possession of copper, but, as far as the discoverers observed, it was almost exclusively used for ornamental purposes, and formed, apparently, no part of the native equipment in the arts of life. Exclusive of the Spaniards, the earliest voyagers who left records or reports of their explorations, sailed along the coast, or visited different parts of it, from Labrador to Florida, and the inhabitants of the whole sea-board were found sparingly in possession of the "red metal." Thus, in the account of Cabot's voyage in 1497, given in Hakluyt, there is this brief statement: "Hee (Cabot) declareth further that in many places of these Regions he saw great plentie of copper among the inhabitants." The account is a translation from Peter Martyr, and the words "great plentie of" are not warranted by the original.‡ Cabot's

*A piece of this copper gave on analysis: Copper, 98.46 per cent; sulphur, 0.09 per cent, slag, 0.44 per cent; while a copper tool found in the workings gave copper 97.78 per cent, nickel 0.88 per cent, iron a trace, lead 0.05 per cent, sulphur 0.24 per cent, slag 0.07 per cent.
 †By North America is meant only the non-Spanish portion of the country.
 ‡Orichalcum in plerisque locis se vidisse apud incolas prædicat.

observations were made on the northern coast of the continent, and he went as far as 60° north latitude. A similar brief statement is given in the account of the voyage of Cortereal in 1500, who is said to have gone as far north as 56°. The account (in Ramusio) describes the painted inhabitants, their clothing of skins and other particulars, and states that they had bracelets of silver and copper. The mention of silver is unfortunate. Verazano's report goes more into particulars. He coasted from 34° to beyond 41° north latitude, in the year 1524, and made several landings. He says of the natives at a point on the coast apparently in the neighborhood of New York that they had "many plates of wrought copper, which they esteeme more than golde." On sailing along the coast to the eastward he saw certain hills and concluded that they had some "minerall matter in them, because," he says, "we saw many of them (the natives) have beadstones of copper hanging at their eares." On the southern and eastern coast, therefore, according to these accounts, the copper was used for ornaments. Neither of the observers quoted speaks of copper weapons in that part of the country, which they would have been likely to notice, as they naturally paid special attention to the arms they might have to encounter. Nor did later explorers who described the equipment of the natives in detail have occasion to give greater prominence to copper.

In Cartier's second voyage to the St. Lawrence, in 1535, he kidnapped the principal chief of a local tribe to take with him to France, following the common practice of the time, and this chief was visited on shipboard by condoling members of his tribe, who were assured that he would return the next year, "which, when they heard," says the account in Hakluyt, "they greatly thanked our Captain and gave their lord three bundles of beaver and sea wolves skinned, with a great knife of red copper that commeth from Sagenay." Here is an instance of a copper weapon or implement. The quantity of copper which the North American Indians possessed at the epoch of discovery, although the metal was diffused over a very wide territory, was very small compared with stone. A glance at collections of aboriginal articles, like that of the Smithsonian Institution in Washington or the Peabody Museum in Cambridge, will at once show how relatively insignificant it was. The Smithsonian has between six and seven hundred copper articles from mounds, graves and other sources within the territory of the United States, while there are thousands of stone arrow and spear heads and implements in its collection. The Peabody and other copper collections are very much smaller. A closer examination of the Smithsonian exhibit will show that the copper articles from the south and east are mainly of an ornamental character and few in number compared with those found towards the northwest. As Wisconsin is approached the copper articles not only increase in number, but

the proportion of arrow and spear heads and implements far exceeds that of the ornaments. Among the Wisconsin specimens are pieces of "float" copper, varying in size from those weighing several pounds down to nuggets, which indicate the convenient material of which some of the manufactured articles were probably made. If one were to prepare a map showing by shading or colors, as is now the practice, the relative number of aboriginal copper finds in the United States, the deepest shade or darkest color would at present be in Wisconsin. This condition is no doubt largely due to the indefatigable zeal of Mr. F. S. Perkins of Wisconsin, who has devoted himself for many years to collecting copper articles of Indian origin from all parts of the State, over two hundred of which are in the Smithsonian cases. But the phenomenon can be explained in another way when one reflects that Keweenaw Point is directly north of the State and was the seat of the ancient copper mines, which have attracted the attention of archæologists, and was the center of distribution of the native copper which was the object of the desultory mining carried on there. Wisconsin is also in a very favorable situation for receiving the drift which brought "float" copper from the copper-bearing rocks of Keweenaw, which "float" was apparently often manufactured into implements. The State covers a district which was near the mines and is in a direct course for people leaving them going south. It may be found that that district was the seat of the ancient miners themselves.

The yield of mounds, graves and fields, as shown in the collections, confirms in a general way the observations of the first discoverers. In the eastern and southern parts of the country the majority of the copper articles which have been found are breastplates, bracelets, beads, bobbin-like objects and other ornaments, while in the north and west, and especially in Wisconsin, implements and weapons prevail. The Wisconsin specimens are like those figured by Whittlesey (Smithsonian Contributions, XIII), which were found in the mining district itself, and those found at Brockville, Canada, and shown in Wilson's Prehistoric Man. Others, apparently of the same character, are mentioned by Wilson as being found near Marquette, Michigan, east of the copper district.

The present evidence, therefore, shows that copper had not passed its ornamental or precious stage on the seaboard and in the south at the time this continent was brought to the attention of Europe. It was not a part of the general native equipment, either for war, or hunting, or other useful purposes, and its position in the native economy was not like the noticeable part it played in the armament of the Mexicans and Central Americans of the same period.

At the advent of Europeans copper was eagerly sought for in trade with the whites. An official present of copper articles is

particularly mentioned in the account of Cartier's voyage before referred to, and Ralph Lane writes from Roanoke, in 1585, to his company in England that they could not do better than send over copper articles of all kinds to trade with; "copper carryeth the price of all, so it be made red," he explains. The copper obtained from the whites was very soon, with other imported things, disseminated by barter among the different tribes. In Frobisher's third voyage to the Labrador coast (lat. 58°), in 1578, he noticed the evidence of this aboriginal trade, and says "the natives have traffic with other people, and have barres of iron, arrowe and speare heads and certain buttons of copper which they use to weare upon their foreheads for ornament, as our ladies in the Court of England doe use great pearle." This trade with the natives must have been considerable. The fishing fleets which swarmed in the northern waters carried on trade, and copper and iron articles formed a part of their outward cargoes. According to Anthony Parkhurst, who had been in the business and on the fishing grounds, trade to Newfoundland from England was brisk in 1548, and an estimate which he made for Hakluyt shows that in 1578 there were one hundred Spanish vessels engaged in cod fishing, twenty to thirty whalers from Biscay, fifty Portuguese and a hundred and fifty French and Breton vessels. The English contingent was then much smaller than in former years.

After the arrival of Europeans, bringing an assortment of "novelties" of all kinds, there was no reason why the Indians should trouble themselves further to obtain domestic copper by the toilsome process of searching and digging for it, because they now had not only a ready and sufficient supply of that metal for ornamental purposes, but were introduced to many other things of superior attractiveness, especially iron, in the form of knives, hatchets, etc., which at once superseded copper for practical use. "The Chippewa chief, Kontika, asserted in 1824 that but seven generations of men had passed since the French brought them brass kettles; at which time their people at once laid aside their own manufactures and adopted those of the French."* The testimony of the earliest voyagers to the possession of copper ornaments by the natives is therefore of importance, because there was very soon enough of the imported article in the country to make a show. Incidentally, also, archaeologists have to keep this fact of foreign importation in mind in deciding upon the origin of copper articles in "finds." Lake Superior copper, of which pre-Columbian Indian articles were made, occurs in the native state, and is free from the impurities which are found in copper that has been smelted, so that chemical analysis could often decide whether a given specimen was of

native origin or imported. On some copper articles found in the north, specks of silver have been noticed. This is as sure a token of Lake Superior copper which has never been melted as a stamp could be.

In the absence of evidence that the Indians of the United States had any knowledge of smelting it must be inferred that all the copper they possessed was found in the metallic or native state. There is nothing to show that they were aware of the existence of copper ore as a source of metal. No remains of smelting places, or slag, or other indications of metallurgical operations have yet been found. If they had known smelting they could have had an ample supply of the metal, because ores of copper are comparatively abundant in the United States, while as a matter of fact, copper was a rarity with them. Native copper occurs in small quantities in many places in the United States, but there is no evidence at present that the northern Indians had knowledge of any but two localities where it could be obtained in any quantity. These were the Coppermine River in the British possessions, and the Lake Superior copper district. The latter affords the most remarkable occurrence of native copper in the world, and the present mines on Keweenaw Peninsula—including the famous Calumet and Hecla, the Tamarack, Quincy and others—are of world-wide fame. The same deposits were worked superficially over their whole extent long before the advent of Europeans to these shores.

By referring to the map of Michigan it will be seen that Keweenaw Peninsula is a prominent geographical feature and extends a considerable distance into Lake Superior. Its north-western shore and the continuation thereof through Ontonagon County is practically parallel to the opposite or north shore of the lake. Through the middle of Keweenaw Point runs a belt of elevated land, which is several hundred feet above the lake in some places, and extends from the extreme point through the peninsula and Ontonagon County into Wisconsin. This elevated belt, which is known as the "mineral range," sometimes rises into bluffs, which are abrupt on the southeastern or shoreward side, but sloping in the opposite direction or toward the lake. The dip of the formation (sandstone, and sheets of igneous rock including conglomerates) composing this range is in a general northwesterly direction, or towards the lake and the north shore. On Isle Royale, near the north shore of the lake, the same formation occurs, but dipping in the opposite direction, viz., to the southeast or towards Keweenaw. "Trap" rock carrying copper is also found on the north and east shores of the lake at St. Ignace and Michipicoten Island. The copper-bearing series of the "mineral range" consists of sheets of igneous rocks—diabase, diabase-amygdaloid and melaphyr—which include beds of conglomerate all carrying native copper. Both of these classes of rocks are

mined. The famous Calumet and Hecla mine is in the conglomerate, as is also the Tamarack, while the Quincy, Atlantic, and others are in the amygdaloid rocks. The product of the mines is divided by the miners into three classes, stamp rock, "barrel work" and mass copper. By stamp rock is meant that which contains the copper in fine particles and is sent to the powerful steam stamps to be crushed, in order to separate the grains of copper by washing (jigging), just as gold bearing quartz is stamped. "Barrel work" means the pieces of copper which are large enough to be detached from the rock without stamping, and are packed in barrels and sent directly to the smelters. They vary in size from pieces about as large as the hand to those not too large to be conveniently packed in barrels. Pieces too large for this constitute the third class, "mass copper," which includes the huge pieces of many tons weight, which are occasionally met with. All this copper shows as such in the rock, and the ancient miners had only to follow down a promising outcrop showing "barrel work" for a few feet and hammer away the rock from the copper to secure the latter. When they came upon mass copper they were compelled to abandon it after hammering off projecting pieces, because they had no tools for cutting it up and removing it. Several instances of this sort have been found.

The ancient "mines" were not mines in the strict sense of the word, because they were not underground workings. As described by Whittlesey, who examined them at an early date,* they were shallow pits or trenches, and sometimes excavations in the faces of the cliffs, scattered along the mineral range from Ontonagon to near the end of the peninsula. At the time modern mining began they had become mere depressions in the ground, owing to the accumulations of earth, leaves and decayed vegetable matter, within them. Forest trees were growing in them and upon the waste thrown out of them, so that it was difficult to distinguish them from natural depressions due to the weathering of the rock beneath the soil, or, in some cases, from the hollows left by the upturned roots of fallen trees. After their character was discovered, however, they served as guides to the modern miners, who often sank shafts upon the copper-bearing rocks, which were revealed by clearing them out. No mine has been opened on the lake that was not thus "prospected" by the old miners. Trenches like those on Keweenaw Point and Ontonagon, but if anything more elaborate, were found on Isle Royale and Sir William Logan mentioned similar workings on the east shore of the lake, near Maimansee. All of these workings contained stone hammers or mauls, amounting in all to a countless number. A few wooden shovels, strongly resembling canoe paddles, were found in some of the diggings, together with the

*Smithsonian Contributions, XIII, 1862

remains of wooden bowls for baling, birch-bark baskets and some spear or lance heads and other articles of copper. In Ontonagon County the old workings were for the most part shallow depressions only a few feet deep. Some of them in the bluff which showed outcroppings of copper rock were hardly large enough to shelter a bear, while others were larger. In Houghton County (*i. e.*, on the Keweenaw promontory) on the Quincy location, there were broad and deep pits in the gravel, probably dug for the float copper, lumps of which are still met with in the neighborhood. At the Central mine, further out on the point, there was a pit filled in with rubbish, which was at first supposed to be natural. It was five feet deep and thirty long. On examination, "a flat piece of copper, five to nine inches thick and nine feet long, was found, which formed part of a piece still in the vein. Broken stone mauls were all about it, showing that the miners could do nothing with it. Its upper edge had been beaten by the stone mauls so severely that a lip or projecting *rim* had been formed, which was bent downwards." Other localities toward the end of the peninsula and at the Copper Falls location are described by Mr. Whittlesey, and as late as 1890 depressions in the ground of small dimensions were pointed out to the writer at the latter place as the work of the old miners. Modern miners would regard the whole system as nothing more than prospecting work and not mining proper, as there were no shafts or tunnels or underground workings of any kind. As Mr. Whittlesey expressed it, "the old miners performed the part of surface explorers."

I am fortunate in being able to add to the foregoing the testimony of an eye-witness of some other discoveries in this district, viz., that of Mr. J. H. Forster, a well-known mining engineer who lived in the district many years. He was at one time superintendent of one of the mines, and was engaged on the Portage lake ship canal as state engineer when the canal was opened, when he discovered some copper articles in an ancient grave at that point. He writes in regard to the discovery of old operations: "The largest mass of float copper found in modern times . . . weighed eighteen tons and contained very little rocky matter. When found in the woods it was covered with moss and resembled a flat trap boulder. It had been manipulated by the 'ancient miner' and much charcoal was found around it. Its top and sides were pounded smooth and marks of stone hammers were apparent. All projections—every bit of copper that could be detached—had been carried away. . . . Subsequent explorations disclosed the epidote lode whence the mass came—torn from its matrix doubtless by the ice. The mass had been transported only about fifty feet and dropped on a ridge. When the lode was stripped of the drift the jagged edges of a mass in place were exposed. It was of the same length, thickness and

structure of the "float." It was observed at the time that if the 'float' could be set up on edge on the piece in place it would fit in exactly." Mr. Forster was present when the famous Calumet conglomerate lode was opened. At that point a small mound was found in the woods, while explorations were in progress, upon which large maple and birch trees were growing. Roots of trees still more ancient were found in the drift. After stripping off the timber, a pit was sunk which reached the solid conglomerate at the depth of fifteen feet. "But it was a hard rock filled with stamp copper only and could not be mined by the ancient miners." Numerous stone hammers and birch-bark baskets were found in the workings. Mr. Forster thinks the dirt was carried out of the pit in these baskets. On the north side of Portage lake, on the extension of the Isle Royale lode (opposite Houghton), the drift being shallow, "long trenches were dug on the back of the lode three feet wide and deep. There was much small mass or nugget copper (barrel work) released by the disintegration of the soft epidote vein stone." This was thrown out, while the earth was thrown behind the miner as he advanced, and the work resembled that of an expert "navvy." A remarkably deep trench was discovered at the South Pewabic (now Atlantic) mine, several miles west of the last locality, which extended two or three feet into the solid rock. At the bottom "was a well-defined transverse fissure vein of quartz, about two feet wide, containing here and there chunks of solid copper. By the several pits sunk on the course of the vein, proof was had that it had been worked superficially several hundred feet in length. I walked through it a long distance. The surface of the formation was shattered and decomposed, hence the old miners could come at the quartz handily. They did not carry the rock out to the surface to dump it, but piled it up neatly on each side of the drift. At one point I found a handsome specimen of quartz and copper laid up carefully in a niche. It weighed several pounds. . . . As in other cases, we had proof that the ancient miner did not sink any shafts and do real mining. He was only a surface gleaner." Of the ancient workings on Isle Royale, on the north shore of the lake, which were very extensive and have been described as extending twenty feet and more in the solid rock, Mr. Forster says: "As I understand it, these extensive works were upon a high outcrop, promising natural drainage. And I should infer from what I heard from Mr. A. C. Davis, the agent, and others who opened the Minong mine* that the ancient workings were among disturbed shattered rocks, among which were found much mass copper and barrel work. The ancients were after these pieces of copper. Mr. Davis found many considerable masses, handled and beaten by the ancient men, which were too large for them to carry away."†

*In Isle Royale. †From a letter to the writer

At the Minnesota mine, in Ontonagon County, was found a large piece of mass copper which had been raised some distance in the excavation and abandoned by the old workers. As this was the first large mass discovered and gave rise to considerable speculation, it deserves special mention. The account is taken from Forster and Whitney's report on the Geology of the Lake Superior Copper Region, and is as follows: In the winter of 1847-8, Mr. Knapp, the agent of the Minnesota, found an artificial cavern on the mine location containing stone hammers, and at the bottom was a vein with jagged projections of copper. After the snow had left in the spring he found other excavations, and particularly one twenty-six feet deep, filled with clay and a matted mass of mouldering vegetable matter. On digging eighteen feet he came to a mass of native copper ten feet long, three feet wide and nearly two feet thick, weighing over six tons. "On digging around it the mass was found to rest on billets of oak supported by sleepers of the same material. This wood, by its long exposure to dampness, is dark colored and has lost all of its consistency. A knife blade may be thrust into it as easily as into a peat bog. The earth was so packed around the copper as to give it a firm support. The ancient miners had evidently raised it about five feet and then abandoned the work as too laborious. They had taken off every projecting point which was accessible, so that the exposed surface was smooth. Below this the vein was subsequently found filled with a sheet of copper five feet thick and of an undetermined extent vertically and longitudinally. . . The vein was wrought in the form of an open trench and where the copper was most abundant there the excavations extended deepest. The trench is generally filled to within a foot of the surface with the wash from the surrounding surface, intermingled with leaves nearly decayed." Whittlesey says of this mass: "Its upper surface and edges were beaten and pounded smooth, all the irregularities taken off, and around the outside a rim or lip was formed, bending downwards. . . Such copper as could be separated by their tools was thus broken off, the beaten surface was smooth and polished.

On the edge of the excavation in which the mass was found there stood an ancient hemlock, the roots of which extended across the ditch. I counted the rings of annual growth on its stump and found them to be two hundred and ninety." Mr. Knapp felled another tree, growing in a similar position, which had three hundred and ninety-five rings. "The fallen and decayed trunks of trees of a previous generation were seen lying across the pits." A shaft was subsequently sunk on the lode revealed by this trench, which was in rich ground, to a great depth. The abandonment of this mass of copper formerly gave rise to conjectures. It was supposed that the ancient miners were interrupted in their work "by some terrible pestilence . . . or by

the breaking out of war; or, as seems not less probable, by the invasion of the mineral region by a barbarian race, ignorant of all the arts of the ancient Mound-builders of the Mississippi and of Lake Superior."* But from a consideration of the evidence of the character and scope of the old workings which we now possess, it will be seen that it is unnecessary to go so far for an explanation. As was clearly the case at the Central and Mesnard mines, and on Isle Royale, the mass at the Minnesota was abandoned by the old miners because they found it impossible to get any more pieces from it. They had no tools which could cut it, and even at the present time mass copper is the least desirable form in which the metal presents itself in the mines, on account of the labor and expense of cutting it up, although there are steel tools especially invented for the purpose. The practice of hammering off pieces from mass copper is mentioned by visitors to the lake from the French missionaries down to Schoolcraft. There was a large mass on the Ontonagon, which has been in the Smithsonian Institution for many years, which was considerably reduced in size in this way in the course of a hundred and fifty years of casual visits.

A great antiquity has been assigned to these workings by some writers, and it used to be supposed that a busy industry was suddenly interrupted in them at some time over five hundred years ago. The tree with three hundred and ninety-five rings of growth has been used to support an argument that the workings must have been abandoned at least as long ago as the middle of the fifteenth century, or, to be exact, reckoning from 1847, before the year 1452. This would be at least forty years before the voyage of Columbus and eighty-four years before Cartier visited Montreal. Although it may be true that work ceased at the particular trench where that tree was felled at the date indicated, it does not necessarily follow that all the workings were abandoned at the same time. Indeed, the tree which grew on the dump of the pit where the Minnesota mass was found did not begin its growth until over a hundred years later, or after the French had been up the St. Lawrence and there had been considerable traffic with Europeans on the sea coast. How long *a parte ante* the whole system had been worked can only be a matter of conjecture. When one reflects that many hundreds of men were busily engaged for several consecutive seasons, with all the feverish energy born of the modern thirst for gold, in the diggings of any one of the placer camps which are now seen abandoned in Idaho, Oregon and California, it will be apparent that the old miners on Lake Superior must have taken a long time for their leisurely work. Their tools were primitive, their work was desultory, and they knew nothing about the desire of

*Wilson. Prehistoric Man, Vol. I, p. 276.

wealth. Primitive peoples do not prosecute any industry persistently and assiduously like civilized men. Where there are no wages, no expenditures, no companies and employes, no stocks or fluctuations of the market, nothing even which can be called a demand, there is no need of pushing a laborious work. It was also, probably, only in the summer, and it may have been only at considerable intervals, that Keweenaw, Ontonagon and Isle Royale were visited for copper. It must also not be forgotten that the ancient miners only carried away "barrel work." They were forced to abandon mass copper. Barrel work from the excavations and float copper from the neighboring and remote drift would furnish the material necessary for all the tools, weapons and ornaments that have been found, and although the quantity of copper from these sources was small when reckoned in tons, yet the desultory and selective kind of mining which produced it, especially if carried on by a comparatively small number of persons over such an extensive territory as the mineral range of Keweenaw, would naturally require an indefinite length of time.

MAN AND LANGUAGE :
OR, THE TRUE BASIS OF ANTHROPOLOGY.

By HORATIO HALE, M. A., F. R. S. C.

II.—AN AMERICAN EXAMPLE.—THE ATHAPASCANS, NORTH AND
SOUTH—*Concluded.*

This brief summary, or rather this series of extracts, gives only an imperfect idea of the wealth of this language, not only in forms of expression, but in the ideas which it expresses. If it be thought that this wealth is far beyond anything that the circumstances of the people can require, there are two considerations which should be borne in mind. In the first place we must remember that the life of savages, like that of civilized men, is full of exigencies demanding the exertion of many mental faculties, and calling for an endless variety of communications between the members of a household or of a tribe. Secondly, there is in every healthy human mind, as in every healthy human body, evidence of an immense reserved force, ready for development to an almost unlimited extent. The recruiting sergeant sees, in the movements of an awkward but strongly-framed rustic, evidence of the thews and sinews which will in time make the lithe and prompt artillery-man; and the philologist perceives in the speech of the savage the promise of capacity for any duties of civilization.

In the case of the Tinné we are fortunately not limited to inference and prediction. The capabilities of the race have been strikingly shown. The Tinné (or Athapaskan) family is a widespread one, diffused over a larger portion of North America than any other linguistic stock, except perhaps the Algonkin. As in the other hemisphere, so in this, the tribes of the bleak and barren north have sent out their swarms toward the sunny and fertile south. Ethnologists have traced their line of march by the fragmentary septs which have remained along the track, from the Mackenzie basin and Alaska, through the regions which are now the Province of British Columbia and the States of Washington and Oregon—where the Sikanis, the Takullis, the Kwaliokwas, the Umkwás, the Totutunies and other remnants still linger—to the fruitful river-valleys of Northern California. Here for a time the emigrants halted, and their natural capacities and character found room for development. Mr. Stephen Powers, in his excellent description of the Cali-

fornian Indians, which composes the third volume of the Smithsonian "Contributions to North American Ethnology," gives a brief account of the Hupâ, or Hoopas, who occupy Hoopa Valley on the Lower Trinity, north of San Francisco. Their most notable characteristic is their masterful force of character. In a vigorous passage, which I slightly condense, he tells us: "Next after the Karoks they are the finest race in all that region, and they even excel them in their statecraft, and in the singular influence, or perhaps brute force, which they exercise over the vicinal tribes. They are the Romans of Northern California in their valor and in their wide-reaching dominions. They are the French in the extended diffusion of their language. They hold in a state of semi-vassalage most of the tribes around them, exacting from them annual tribute in the shape of shell money; and they compel all their tributaries to speak Hupâ in communication with them. Although most of these petty tributaries had their own tongues originally, so rigorously were they put to school in the language of their masters that most of their vocabularies were sapped and reduced to bald categories of names. They had the dry bones of substantives, but the flesh and blood of verbs were sucked out of them by the Hupâ. A Mr. White, a pioneer well acquainted with the Chimalakwe, who once had an entirely distinct tongue, told me that before they became extinct they scarcely employed a verb which was not Hupâ. I tried in vain to get the numerals of certain obscure remnants of tribes; they persisted in giving me the Hupâ, and in fact, they seemed to know no other."

But these proud and masterful children of the savage north had been quick to adopt all the arts of incipient civilization which they found in their new abode. Their dress, implements, and houses were copied from the neighboring tribes of the Klamath River region. The Californian currency of shell-money, which had been found highly useful in trade, was adopted by them, with certain changes in rating. One of their septs, the Tolowa, were noted for their large and handsome canoes. Mr. Powers saw one which was forty-four feet long, over eight feet wide, and capable of carrying twenty-four men or five tons of weight. It was made of redwood cedar, and seemed to him "a thing of beauty," sitting plumb and lightly on the sea, and so symmetrical that a pound's weight on either side would throw it slightly out of trim.

But the Californian valley proved too narrow for the increasing population, which sent forth new swarms to the far southeast. From one of these sprang the terrible Apaches, whose rapacious and far-swooping bands became lords of the plains and hills from the Californian gulf to Texas, and dominated for two centuries the feeble provinces of Northern Mexico—now ravaging the settlements and now contemptuously selling them peace. A still larger swarm made its way into the highlands of

Arizona and New Mexico, and found a genial abode in the sunny and grass-clad mountains which surround the stone and brick edifices of the half-civilized Pueblo Indians. These Indians had dreaded the mountains as the resort of the predatory Utes of the Shoshonee stock. The fearless Tinnéh emigrants, who have since become famous under the Spanish nickname of Navajos,* seized these inviting uplands for their own fastnesses, drove back the Ute invaders, made friends with the Pueblo Indians, and quickly learned from them their methods of agriculture and their mechanic arts. "When the Spaniards first met them, in 1541, they were tillers of the soil, erected large granaries for their crops, irrigated their fields by artificial water-courses or *acequias*, and lived in substantial dwellings, partly underground; but they had not then learned the art of weaving the celebrated 'Navajo blankets,' that being a later acquisition of their artisans."[†]

It is admitted on all hands that if they learned their mechanic arts from the Pueblos, they greatly improved these industries. Their blankets are as famous throughout the southwest as the carpets of Persia are throughout Asia. Dr. Washington Matthews, the highest authority on all matters relating to this people, in his elaborate monograph on "Navajo Weavers" (published in the third annual volume of the Bureau of Ethnology), remarks: "It is by no means certain—still there are many reasons for supposing—that the Navajos learned their craft from the Pueblo Indians, and that, too, since the advent of the Spaniards; yet the pupils, if such they be, far excel their masters to-day in the beauty and quality of their work. It may be safely stated that with no native tribe in America, north of the Mexican boundary, has the art of weaving been carried to greater perfection than among the Navajos, while with none in the entire continent is it less Europeanized."

In silver-work, according to the same authority, the superiority of the Navajo artisans to those of the Pueblos, in natural aptitude and taste, is equally apparent. With inferior implements and under other disadvantages, they do equal or even better work.[‡] In a letter with which Dr. Matthews has recently favored me, he writes of this people: "Their own traditions and the works of early travelers show that they have made great advances in the last two or three centuries. This is partly due, no doubt, to contact with pueblos and whites, and partly to admixture of the blood of these races; but it must be largely attributed to some innate docility of the Navajo stock. Many of the wild tribes of these parts have had exactly the same advantages, and yet have not advanced as the Navajos

*Na. I have come to mean the Lake people, by others the Cornfield people. *Navajo* signifies both a tool and a plot of level ground.

[†]Brinton's "American Race," p. 72, citing A. A. Bandelier, "Indians of the Southwestern United States."

[‡]"Navajo Silver-smiths," by Washington Matthews, in the second annual "Report of the Bureau of Ethnology," p. 171.

have done. Their silversmiths have, without any instruction, greatly improved their art within the last six years. They have discovered for themselves methods of ornamenting in *repoussé* and by means of dies. Their weavers have invented some important improvements. Navajo progress forms a subject of great interest, and its causes are not easy to determine. They would probably have earlier become dwellers in permanent houses but for their superstitious notions, which constrain them to abandon a house where a death has occurred. Quite recently some of the less conservative have given up these notions and built themselves houses of stone."

But the intellectual powers of this remarkable people are displayed by evidences of a far higher cast than works of agriculture and mechanic arts. Their literary compositions, as they may justly be called, their religious and legendary chants, evince vivid imagination, a talent for clear and forcible expression, and a capacity for sustained and impressive narration, which no barbarous and few civilized races have surpassed. Our knowledge of those compositions is due also to the same discerning and indefatigable investigator. "The Prayer of a Navajo Shaman," which Dr. Matthews has preserved for us (in the *American Anthropologist* for April, 1888,) is not so much a prayer as the relation of an intensely interesting religious or mythological experience. It is the story of a descent into the underworld for the recovery, not of a lost soul, but of a stolen "spiritual body," which had been carried off by the chief of witches for the purpose of working woe to the visible body and to the soul of the rightful possessor, remaining on the earth. In answer to his supplication the two principal war-gods of the Navajo pantheon come from their abodes on the summits of the neighboring mountains, and descend into the lower regions, passing gate after gate, which, though guarded by direful sentinels, yield before their magic wands. In the lowest depths they recover the fragments of the lost body, which resume their proper form, and the three return upward, through chamber after chamber, until the suppliant reaches his home, when his spirit, body, and soul are reunited, and "the world around him is restored in beauty." This is but a feeble outline of a composition which when read is most impressive. In all the legendary lore which the Assyrian tablets have yielded to modern explorers there are few more interesting stories than that of the descent of the goddess Ishtar into Hades, to confront the awful queen of that realm, and recover (as is supposed) her lost lover Thammuz, and of her restoration to the upper world.* The incidents bear, in certain respects, a very curious resemblance to those of the Navajo legend. But as compositions, and viewed merely as displays of literary genius, there is no com-

*See Rawlinson's "Religions of the Ancient World," Chap. II., referring to Fox Talbot, "Records of the Past," pp. 143-149.

parison between the two narratives. It would be hard to deny to the ancient Assyrians the title of a civilized people; yet it must be said that their solemn record of the "descent of Ishtar," striking as it certainly is, becomes childish and barbarous when compared with the Navajo Shaman's "Prayer of the Rendition."

The Navajo "Mountain Chant," given by Dr. Matthews in the fifth "Annual Report of the Bureau of Ethnology," is a much longer and more elaborate composition, a narrative of great and varied interest, comprising historical and mythological details in vast profusion, and illustrated by many dramatic ceremonies, with numerous songs and dances, and some curious aboriginal drawings. The same exuberant yet regulated imaginative power is apparent in this as in the former production.

Certain points in the social system of the Southern Tinnéh require special notice. The origin and character of the Navajo and Apache *gentes* have been well described by Dr. Matthews and Captain John G. Bourke in the April-June number of the *American Journal of Folk-lore* for 1890. These *gentes*, or clans, if they may be so styled, seem all of comparatively modern origin, and apparently correspond to nothing found among the Northern Tinnéh, east of the Rocky Mountains. Another and far more profound change is a matter of much greater moment. The condition of women among the Navajos is as far as possible removed from that of the tribes described by M. Pettitot. Among these tribes women are slaves; among the others they are queens. With the Northern Tinnéh, wives are drudges, bought, unwooed, unloved, and abused. With the Southern Tinnéh they are won by courtship, are regarded by their husbands with the warmest affection, hold their own separate property, and are consulted in all transactions of business. The change in their position is not unknown to the people themselves. It is, in fact, the subject of a curious legend, which Dr. Matthews has recorded.* There was a time in their early history when the men and women fell out. The women declared themselves tired of drudging for their husbands, and the sexes agreed to separate. They took opposite sides of the river on which they lived, and thus dwelt apart for four years. Then the women wearied of the separation, and wanted the help of the strong arms of their husbands. They cried across the river and begged to be taken back. While the men hesitated and debated, some of the women tried to swim across and were drowned. This decided the question, and the men took back their wives. It would be absurd to suppose that such an event really occurred, but the legend embodies the unquestionable fact of a notable change in the relation of the sexes. Nor can there be any reasonable doubt as to the origin of this change.

*See "A Legend of the Navajos," *Matthews*, in *The American Anthropologist*, April, 1887.

The common opinion that women among savage tribes in general are treated with harshness, and are regarded as slaves, or at least as inferiors and drudges, is, like many common opinions, based on error, originating in a too large and indiscriminate deduction from narrow premises. A wider experience shows that this depressed condition of women really exists, but only in certain regions and under special circumstances. It is entirely a question of physical comfort, and mainly of the abundance or lack of food. Where, owing to an inclement climate, as in arctic or sub-arctic America, or to a barren soil, as in Australia, food is scanty, and the people are frequently on the verge of famine, harsh conditions of social life prevail. When men in their full strength suffer from lack of the necessities of existence, and are themselves slaves to the rigors of the elements, their better feelings are benumbed or perverted, like those of shipwrecked people famishing on a raft. Under such circumstances the weaker members of the community—women, children, the old, the sick—are naturally the chief sufferers. The stories of the subjection of women, and of inhumanity to the feeble and aged, all come from these inhospitable regions. Where plenty prevails, as in tropical or sub-tropical America, and in most of the Polynesian Islands, the natural sentiments resume their sway, and women are found to enjoy a social position not inferior, and sometimes actually superior, to that which they possess in some civilized countries. The wife of a Samoan landowner or a Navajo shepherd has no occasion, so far as her position in her family or among her people is concerned, to envy the wife of a German peasant. The change which took place in the social condition of the Tinneh women, when their emigration had carried them from the bleak skies and frozen swamps of Athapaska to the sunny uplands and fruitful valleys of Arizona, is thus simply and naturally explained. The change was doubtless the greater because they shared with their husbands the remarkable intellectual endowments indicated by the qualities of their common language.

In another respect the influence of the emigration on the social, or rather the civil, organization of the Southern Tinneh is not such as, according to the ordinary political theories, might have been expected. In passing from the status of savagery to one nearly approaching to civilization, no change has been made in their peculiar and surprising system of government, if such we may term that which is really "no-government." In fact, the only word which can describe it is one which has of late years acquired a grim significance; it is simple "anarchy." M. Petitot first draws our attention to this Tinneh characteristic, and to the peculiar quality of mind which renders it possible—the utter absence of vindictiveness. "It is," he remarks, "a singular fact, and one which must give a high idea of the gentleness (*douceur*) of the Dènè-Dindjié, that though they are without any kind of

government, of judges, or of laws, we nevertheless do not encounter among them any of those crimes which result from venetel feelings—only the weaknesses which belong to our nature. The penalty of retaliation, the right of reprisal, that sort of lynch-law recognized as justice and equity among Indian tribes of other stocks, do not exist among this people. Exceptions occur, but they only confirm the general rule." The so-called chiefs, we are told, whom the people assume, or rather whom the Hudson Bay officials give them, have no other prerogative than that of directing their hunting parties and their trips to the trading posts.

Mr. Powers makes a singularly like report concerning the warlike Hupà, those conquering Romans of Northern California. "Politically," he tells us, "the Hupà are fatally democratic,"—though why the expression "fatally" should be applied to this prosperous tribe is not apparent. "There is no head-chief," he assures us, "even for war." Every man fights as he chooses, only taking care to keep near the main body of the warriors. They have, indeed, "well-established laws, or rather usages," as regards both civil rights and personal injuries, but the methods of dealing with these evince the same placability as that which M. Petitot records. "For instance," Mr. Powers explains, "if two Hupà have a quarrel, and it is not settled on the spot, they refuse to speak to each other; but if after a while one desires to open friendly relations, he offers to pay the other man a certain amount of shell-money. If this offer is accepted, they *exchange moneys*, not necessarily in equal amounts, and perfect friendship is restored."

An able and impartial historian, Mr. J. P. Dunn, gives a closely similar account of the Navajos.* One characteristic of this people, he tells us, "is their form of government, or rather their lack of government. When they came under our control they numbered about 12,000, of whom 2,500 were warriors; but, notwithstanding their numbers and the extent of country they occupied, they had scarcely any central controlling power, and what power there was, was on a democratic basis. No particular form of government obtained among them, a man having as absolute control over his children while they lived with him as of his slaves; but once a warrior, a man was his own master, and once married, a woman was largely her own mistress. Head-chiefs were made and unmade with little ceremony, and the pledges of a head-chief appeared to have little weight, either while he was in office or afterwards. On account of this lack of executive power, there was no enforcement of law and little law to enforce. Religious scruples were the chief restraining power." "Major Backus," we are told, "once asked a Navajo chief how

* *Massacre of the Mountain: A History of the Indian Wars of the Far West.* By J. P. Dunn, Jr. 1889, p. 214.

they punished their people for theft. 'Not at all,' he replied. 'If I attempt to whip a poor man who has stolen my property, he will defend himself with his arrows and will rob me again. If I leave him alone, he will only take what he requires for the time.'"

It is a point of much interest to ascertain in what degree a people of these peculiar characteristics, differing so widely in certain respects from most American tribes—brave and independent, but neither cruel nor revengeful—intelligent, ingenious, industrious, eager for acquiring property, yet with no law but usage, and no means of enforcing this usage beyond the influence of public opinion and their own religion—have thriven in the agitated world of Western America, where lawless force or forceful law alternately dominate all other communities. This result we learn from the latest and best authority, the Reports of the United States Commissioner for Indian Affairs.

In 1889 the tribe was computed by the local agent to number some 21,000 souls, or about the twelfth part of all the Indians in the United States, exclusive of Alaska. Twenty years earlier their number was computed at only 13,000, showing a remarkable increase. That this increase was natural, and not due to accessions from other tribes, is made evident by the "vital statistics," which return for the previous year 1,400 births to 700 deaths. Their vast reservation of 3,500 square miles—as large as some European kingdoms—is spread over a mountain region elevated six thousand feet above the sea, and "for picturesque grandeur not to be excelled in the United States." But of their more than two millions of acres, only some sixty thousand could be cultivated, and those only by artificial irrigation. The Indians, however, had managed to till about eight thousand acres, on which they raised good crops of wheat, maize, potatoes, melons, onions and other vegetables. But the mountains afford abundant pasturage, and the wealth of the people is in their "stock." They owned in 1889 the immense number of 250,000 horses, 700,000 sheep, and 200,000 goats, "By common consent," the agent writes, "the sheep are considered the property of the women, and are clipped in the spring and fall of each year." The wool crop of the previous year had exceeded two millions of pounds, most of which, after reserving the needed supply for wearing, they had sold to the white traders in the neighborhood. The four thousand matrons of this industrious tribe must be among the wealthiest women in America. So well-disposed are the people that the agent had no serious offences of any kind to report. In this large territory, filled with a property of a kind most tempting to Indian cupidity, a small band of twenty-five native policemen had been ample for maintaining order. "Heretofore," the agent reports, "it had been the custom to have a white man for chief of police, but I allowed the force to select one of their own number, and the result

has been better satisfaction and greater efficiency." "The Indians and the white settlers on the outside of the reservation," we are further told, "are on good terms, and apparently cultivate friendly relations." Their own disputes are usually "settled among themselves." Their nominal chiefs have hardly any influence; their advice is seldom sought, and when offered is rarely accepted. In cases of difficulty, "the matter is generally laid before the agent, whose decision and advice are accepted in good faith." The only troubles which the agent had encountered in this modern Utopia, during his five months' tenure of office had arisen from the inclination of the people for gambling. On this subject he reports that "when a crowd of them met at the agency, it was the custom to spread a blanket anywhere and indulge in their favorite proclivity. This," he adds, "led to petty thieving in several cases, which I promptly punished, and broke up the indulgence in this locality." After mentioning some trouble between the Navajos and the neighboring Moquis caused by horse-stealing, which was settled in a council of the tribes, and a single case of homicide in self-defense, he remarks: "This is the sum total of sins of commission among 21,000 ignorant and uncivilized American Indians, as reported to me in a little over five months—and the Navajos invariably report the wrong-doings of their neighbors." To this statement this clear-headed and benevolent agent, Mr. Vandever, adds the natural inquiry, "Can any community of like numbers in the civilized world make so good a showing?" It should be mentioned, as an evidence that the virtues as well as the accomplishments of the Navajos are mainly of home growth, that there had been no missionaries among them, and that only about a hundred of them knew "enough of English for ordinary intercourse."

Something should be said of that other branch of the Southern Tinneh, the Apaches, who have until recently borne such a formidable reputation. In the opinion of careful inquirers, this reputation, if naturally earned, has not been properly deserved. As is well known, the early Spanish settlers brought with them the conquering and grasping mood which then prevailed in their mother country, and which allowed in the native tribes no other choice than that between absolute subjection and perpetual hostility. The Apaches, safe in their fastnesses of desert and mountain, quick-witted and resolute, refused to submit, and were compelled to fight. Two centuries of this exasperating warfare bred in them an embittered temper, not natural to their race. Some years elapsed after the transfer of their country from Mexican to Anglo-American rule before they were made to understand that their new neighbors desired neither to enslave nor to exterminate them. As this conviction grew, a marked change has appeared in their disposition and conduct. Those who have been gathered on reservations and well treated begin to show the natural qualities of their stock. In 1889, the

Apaches on the Mescalero reservation in New Mexico numbered 474. The agent, Mr. Bennett, reports of them: "Their general behavior and conduct have been most excellent, not a crime having been committed by them during the year either against whites or Indians, and not a case of drunkenness nor a quarrel of any kind among them since I assumed charge. Very many are quite skillfully cultivating their little farms, and many more would be doing so were they supplied with teams and implements." "Since assuming charge of the agency," he continues, "I have re-organized our police force of eleven men, and find them obedient, cheerful in the performance of their duties, and always ready and willing to execute all commands given to them. They are kept almost constantly on the move, always on duty, visiting the various outlying camps and herding beeves. They take good care of their uniforms, arms, horses and accoutrements, and are proud of the distinction conferred upon them.

The government has established a boarding-school on the reservation. This school, the agent remarks, was temporarily "closed in May last, by reason of the resignation of the superintendent, since which time the boys have been doing most excellent work on the school farm, of which they are justly proud. As the result of their labor they will supply the school through the winter with an abundance of vegetables, and their cows and calves with hay, corn and oats. The six girls, though young, are making good progress in housekeeping, cooking, needle-work, etc., and are bright, intelligent and ladylike in their deportment."

There seems something almost pathetic in this description, when we recall to mind that these industrious and well-conducted farmers, these docile and faithful policemen, and these zealous boy-pupils, and "bright and ladylike girls," belong to that direful brood of ferocious and untamable Apaches, against whose utter extermination hardly a voice was raised, some twenty years ago, on either side of the Anglo-Mexican boundary, except here and there perhaps in the mild remonstrance of some "visionary" philanthropist.

But the ethnologist who really understands the science which he professes to pursue has no reason to be surprised at any progress which the Navajos or their congeners have made or may hereafter make. Any one who will take the trouble to study in M. Petitot's work the language of their original stock will be satisfied that none but a people possessing powers of observation, reflection and discrimination in a very high degree could have spoken such a language. The remark of Professor Max Müller concerning the language of the Iroquois (which he learned from an Oxford student of that race), that the people who fashioned such a speech must have been "powerful reasoners and accurate classifiers,"* will apply with even greater force

*From a letter quoted in my "Iroquois Book of Rites," p. 98.

to the speakers of the Tinnéh idiom. If we accept the rule proposed by my able and learned friend, Dr. Brinton, in his work on "The American Race,"† that "the final decision as to the abilities of a race or an individual must be based on actual accomplished results, not on supposed endowments"—qualifying this rule merely by a just regard to the circumstances under which the results are achieved—we may fairly ask where among all the races of the earth shall we find a community which in the course of so brief a term as five or six hundred years—to which, according to the facts as present known to us, the residence of the Southern Tinnéh in their present abodes has been limited—has, with such slight foreign assistance, achieved such remarkable results. A few hundreds of ignorant and poverty-stricken emigrants from the far north have developed into a wealthy commonwealth, maintaining a prosperous and peaceful independence, winning the respect and good-will of its neighbors, both civilized and savage, developing a high degree of ingenuity in some of the most delicate and difficult mechanical arts, and producing poetical compositions fit to rank with or above the most notable productions of the founders of civilization—the Assyrians and Egyptians. Such, it is believed, is a fair statement of the results on which, in this case, the students of linguistic ethnology may found a just claim in favor of the methods and principles of their science.

†See p. 42 of that work.

THE TRIBAL RECORD IN THE EFFIGIES.

BY STEPHEN D. PEET.

In the first edition of the work on "Emblematic Mounds," we gave an explanation of their objects and uses. We showed that they were connected with the tribal and clan life of an unknown people. They indicate not only great skill in imitating wild animals, but also the superstition felt about these animals. The effigies present a picture of the animal life which once existed, at the same time a picture of native society. We also spoke of the totemism which prevailed and its marvellous influence over the people. The truthfulness of this view has not, by any means, been impaired by subsequent exploration, but rather has become much clearer.

The chapter which we are now to add is not designed to correct any of the statements made, or even to defend the positions advanced, but to supplement what has been said by the account of a few additional discoveries. The interpretation of the system which prevails has been applied to new groups of effigies, and has been found to be an excellent clew. There are, to be sure, some features about the new groups which are somewhat mysterious and will require further study before they can be explained, but, as a general thing, the key which is in our hands proves sufficient to unlock the mysteries. The process of explanation was, at the beginning, very slow, but as the system dawned upon the mind, complete order has appeared where at first there was the greatest confusion.

The effigies are not arranged in a haphazard way, however much they may seem to be, but are so placed as to constitute a most remarkable system, which fits into each environment so as to present a fascinating picture set in the framework of the most beautiful and varied scenery. It seems strange that the unknown people could have succeeded in impressing themselves so thoroughly upon the landscape, but it appears that they were able, through these mute-figures, to perpetuate their customs, their superstitions, their mysteries, and their very thoughts. The figures are mere reliefs in earth, imitative of animal shapes, but the imitation is a small part of the work which has been done. It requires persevering study to understand the hidden significance of the effigies, and to learn about the system which was contained in them, but the subject appears clearer at every step, so that the explorer becomes confident that his positions are well established. It is well that the effigies were studied

before the clew to their explanation was lost. The preliminary platting was made by professional surveyors, at a time when the effigies were in their virgin freshness. The subsequent study of them came before the fashion for summer resorts had gained sway. They are rapidly disappearing, and many groups have been entirely destroyed since the work was begun. The ingress of pleasure-seekers has not had the effect to preserve these remarkable figures, nor even to increase the inquiry about them as much as it should. It is to be hoped, however, that some means of perpetuating them will be devised. They are beautiful works of art, at least they seem so to one who has studied their shapes; and not only this, they are monuments of the past, which, when destroyed, cannot be restored. There is danger that the full explanation of the entire system will never be given unless these works are now studied. It is with the purpose of calling attention to the importance of these effigies as a record of the past that we write these pages. We maintain that they are records, perhaps unintentional and unconscious, yet nevertheless records. Is there any further explanation of them than that which we have given? There are certain problems which have not been solved, certain points which are obscure, yet with a clew to the labyrinth in our hands, we may penetrate the utmost corner and learn what is contained therein. There is a unity amid diversity, so that the record needs to go together as a whole, all the parts being necessary to tell the story. Still the groups were generally the embodiment of a system which is reported with variations, the same points coming out again and again. This is fortunate, for if the effigies in different groups in one place or locality are destroyed, we may go to another place and learn much there. By this means we can verify our own positions and clear up our difficulties. There are many things which lie beyond us. We are still ignorant of what actually existed, but earnestness and perseverance may dispel the mystery. The danger is not that we shall exaggerate and read too much into the picture, but it is that we shall see too little and so fall short of the lesson to be learned.

I. Our position is that there are certain elements in this problem, which, if studied now, will lead us on to a full understanding. We do not believe that they are incapable of explanation, as some have maintained. They may seem like hieroglyphics. In fact, they are hieroglyphics, and yet they contain a language which may be read. They do not contain the conventional figures of the Egyptian alphabet, nor even the connected animal figures which are found in the native writings of the Easter Islands. Nor do we compare them to those rock inscriptions which have been recently discovered in Tennessee, specimens of which we give in the cuts. Possibly there was an esoteric system which reveled in mystery, and which complicates the

problem by the deep significance which is given to the simplest forms, making trifles very important. So far as they have been penetrated, they seem to be free from this punctiliousness. Perhaps they are on too large a scale, and are too useful in their character for that. On the other hand, they present some of the most essential and fundamental principles, and to these we now call attention.

1. The effigies were not merely imitative shapes or creations of fancy, but were actual emblems or symbols, each of which had a secondary meaning.

2. They embody in themselves that most remarkable system which was common among all the wild tribes of America, called totemism—a system which is not fully understood, but, nevertheless, constituted the most important factor in native society.

3. There are few, if any, sun symbols among the animal effigies. This shows that the people were so-called animal-worshippers, and practiced all the rites that this name implies.

4. It is natural that the animal-worshippers should embody their myths in the animal divinities, and it is clear that some of these earth figures were myth-bearers, as we have already shown.

5. Some of the effigies exhibit the peculiar superstitions which wild hunters have about their dreams, were in fact dream gods or totems.

6. The situation of the effigies on hill-tops, near lakes and rivers, making important objects in the landscape, shows that there was a peculiar sense of the sacredness of the animal divinities, under whose protection the people dwelt.

7. The grouping of different effigies together in certain localities convey the idea that clans intermingled in their feasts and dances and amusements, their sugar-making, their hunting and their religious ceremonies, each one marking its presence by erection of its totem on the soil.

8. The surmise has arisen that even the record of battles and of treaties may be contained in the effigies, as certain groups exhibit a sort of picture writing which can be explained in no other way.

9. The existence of secret societies and the celebration of mysteries have been suggested by the discovery of certain groups which are peculiarly situated, making an additional feature to the record, which has not been mentioned heretofore.

These are the points which have come out after diligent study of the effigies. They correspond with the accounts which are given by those who are studying the customs of the Indian tribes, the study having gone on at the same time with these explorations, the results having been brought together and compared after the work was done. Archæology and ethnology are different departments of one science. It is gratifying to know that they teach the same lessons.

II. The interpretation of the record given in the effigies recently discovered will now engage our attention. It is the same as that given to the groups of effigies which have already been described, with perhaps a few additional points. If there shall seem to be a repetition of the points already advanced, it will only show that the system is the same throughout.

1. The first thing which was impressed upon us by the study of the effigies is, that they were all wrought by a single tribe, a tribe which has not yet been identified, but nevertheless one which resembled the tribes of Indians which formerly occupied this region. This impression has grown stronger as we have progressed in the study of the subject. Different tribes had different ways of perpetuating their tribal signs. To illustrate, the Dakotas and some other tribes painted animal figures upon their tents; the Haidahs tatoo them upon their faces and forms and paint them upon their canoes; the Thinkleets carve them into totem posts; the Chippewas cut them into blocks of wood and place them upon the houses which cover their graves; the Iroquois have written them with ink upon documents which were used as deeds or as treaties, each chief making the figure of an animal instead of his mark. We imagine that in pre-historic times the tribes did the same thing. One tribe used shell gorgets as a means of record; another used carved pipes, Mound-builders' pipes; another inscribed figures upon rocks, made these their tribal records; another erected stone effigies or bowlder mosaics, and left these as their tribal signs.

The Indians of British Columbia carve their totems on the prows of their canoes; the Pawnees mark their huts and articles of apparel with totems; the Lenapes painted them on their houses; the Mandans placed the skin of the animal over their wigwams; the Iowas have a peculiar mode of dressing the hair; the buffalo clan wear their locks in imitation of horns; the Hanga clan have a mat of hair to imitate the back of the buffalo; the turtle clan have six locks, to represent legs, head and tail; the bird clan have their hair in front for the bill, with a lock at the back for the tail, and a bunch over either ear for the wings; the Mintearies dress in wolf skins when they go to battle; the Thinkleets go into dances disguised in the full form of the animals whose totems they worship.

The effigy-builders had the custom of shaping their totems out of earth, and confined themselves to this. The tribe occupied the major part of Wisconsin and extended to the south as far as the mouth of the Kishwaukee, south of Rockford, Ill. It extended also into the states of Iowa and Minnesota, and left effigies on the bluffs and on the banks of streams as evidence of their presence. The tribe may have been akin to that unknown people which have covered the sides of the caves of Minnesota with the remarkable figures which have been described by Mr

T. H. Lewis. These figures, however, differ in all respects from the effigies and contain an entirely different symbolism; they are more of the nature of mythologic creatures. Nothing like them has been discovered in Wisconsin. Some maintain that the Winnebagos were the effigy-builders. This is very uncertain. The Winnebagos formerly lived in the state and had villages in the very spots where the groups of effigies are found. The groups on the south side of Green Bay, at Red Banks, on the west side of Lake Mendota, at various points on the Wisconsin river, and those on the Kishwaukee river, are near the site of former Winnebago villages.*

There are also groups of effigies on the north side of the Fox river, in the very region where the Winnebagos still linger. One such group is situated near Neecedah; several other groups are on Pine river, north of this. The writer, after visiting these groups, interviewed some of the Winnebagos making their camp in the vicinity, but was surprised to find them so ignorant of the effigies. One young Indian, a descendant of Decorah, the chief, had seen some of the same effigies farther south, and had noticed the man mounds, but did not seem to be aware of the animal shapes. He spoke of the villages as marked by corn hills and had evidently been impressed more by these than by the effigies.

The discovery of certain pipes of the monitor pattern among the effigies shows that the people were acquainted with the Mound-builders' art, and were associates of the Mound builders of the south. These pipes have a curved base, a round bowl and the same finish as those found in the mounds and called Mound-builders' pipes. No carved animal pipes have yet been discovered in Wisconsin.†

The copper relics which are so numerous in Wisconsin would prove that the effigy-builders had access to the copper mines of Lake Superior. There are no effigies on the shores of Lake Superior, and we infer from this that other tribes must have been the possessors of the mines, but the effigy-builders must have been at peace with them. It may be that in early times the same stock of Indians extended as far north as Lake Superior, and that another stock afterward came in. The Chippewas have been, since the times of history, the occupants of the Lake Superior region. They are bitter enemies to the Dakotas and Sioux, and prevented the latter people from getting copper in their mines. The effigies were probably built before the Chippewas got possession of the mines.

The tribal unity of the effigy-builders is plain. A solid nation without separation with clans occupying the different parts, but all connected by trails and water courses with the ancient city

* See *Journal of the Wisconsin Historical Society*, Vol. 1, p. 107.

† See *ibid.*, p. 107.

Aztlan as the capital, having the two lakes on the north and east, and the great river on the west for defense, dwelt in this beautiful region, where forests and prairies are interspersed, and lakes and rivers form the most delightful fishing grounds, and where the scenery is attractive, and followed their peaceful avocations, making the building of the effigies their pastime, as well as their religion.

2. Another feature of the system is that it furnishes so good a picture of the clan system. Each clan had its own territory, within which were game grounds, dance grounds, council houses, sacrificial places, burial places, garden beds, corn fields, grain pits or caches for grain, lookout mounds, village sites; all of them

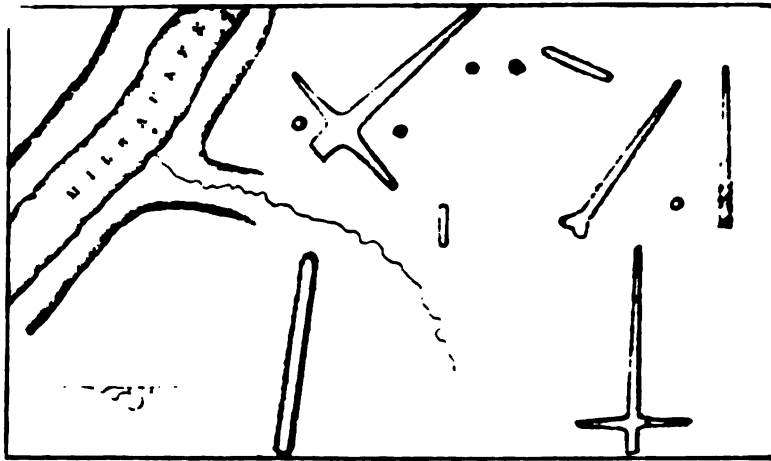


FIG. 1—Wild Geese.

protected by effigies which were representative of totems. The location of these clans, as well as the name of the clans, has been ascertained by a study of the effigies, and a map made by this means. There is an uncertainty about some of the clans, for the very reason that the clans mingled together so much and place their clan emblems on one another's territory, still, the emblem which surrounds the village, and which is the most prominent, is the one which gives the name to the clan. We have identified on the map the most of the clans, three on the east side of the state adjoining Lake Michigan, two or three in the central part of the state along the Rock river, two or three in the western part of the state, near the mouth of the Wisconsin river, two or three others in the central part of the state, and along the Lemonweir river, and two or three in the northeast part of the state, along the Fox river. This location of the clans would show that there was a river system, each clan having some river for its own, and making its habitat on each side of the

river. The clans which we have identified on the east side of the state are as follows: The panther clan, with its habitat extending from the state line to Milwaukee, and from Burlington, on the Fox river to Racine. The wild goose is a common effigy north of this. It is found on the Milwaukee river, at Milwaukee and at West Bend, thirty miles north. See Fig. 1. The wolf is also a common figure on the Milwaukee river, but seems to be situated north of the wild goose. Two groups are given in the figures (see Fig. 2), that of the wild goose south of the river, and the wolf north. The clan on the Sheboygan river has a peculiar effigy for its totem, which we have taken for a coon, though it may have been the badger. Of the clans on the Rock river, the turtle is the most marked. Its habitat extended from the mouth of the Kishwaukee, below Rockford, to a point near Fort Atkinson, included the groups at Rockton, Rockford,

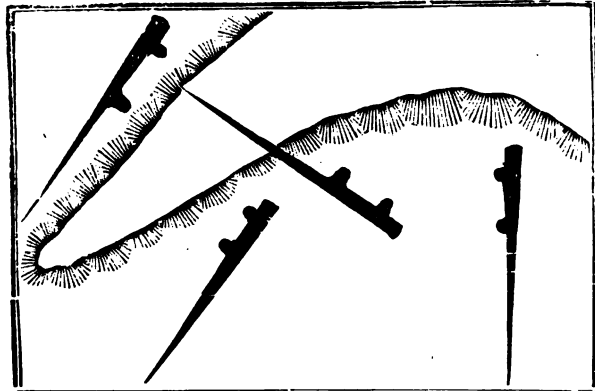


Fig. 2.—Wolf Effigies at Great Bend.

Beloit, Indian Ford, Lake Koshkonong, Fort Atkinson and Aztlan.

The turtle clan extended as far east as Lake Geneva and embraced the effigies which were formerly located on the site of the village, including the groups of fish effigies at Lake Long or Delavan Lake. There are only two groups of fish effigies, this one at Lake Long and another on the northwest side of Lake Koshkonong.

North of the turtle clan was another, whose clan emblem is uncertain. There are many effigies at Horicon and near Beaver Dam, in Dodge county, but they are so mingled as to obscure the clan. Wild geese, foxes and squirrels are the most prominent. Here composite mounds are seen. It may be that there was a mingling of the clans here, and no separate habitat.* The same

*The wild goose and fox are very prominent in a large group of burial mounds a mile south of Horicon, and are also prominent in another large group on Mr. A. C. Downer's farm, in Oak Grove Township, six miles west of Horicon. On the other hand, two squirrels

uncertainty obtains about the effigies on the Four Lakes, near Madison, a great variety of figures, but no one figure prominent enough to decide about the clan.† The clans on the southwest part of the state have been newly explored. One situated upon the south side of the Wisconsin river has the bear for its emblem, though the buffalo, moose, panther is frequently seen. This clan extends from the Wisconsin river to the state line and embraced the effigies near the Blue Mounds. The clan north of the Wisconsin has the swallow for its emblem. This clan extends as far east as the village of Boscobel, and the old dead town called Port Andrews. Here is a remarkable group. It consists of a line of swallows over a mile long. The swallows are on the slope of a hill near the river and underneath the rocky cliff, which is very high. The road runs along the edge of the cliff and overlooks the land where the effigies are. They can be

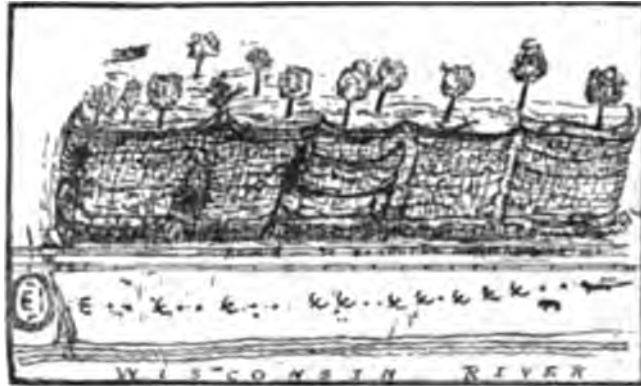


Fig. 3.—Swallows at Port Andrews.

plainly seen from the road and are very interesting and beautiful, though they are fast disappearing under the plow. There is one swallow here of which we shall speak hereafter. It is at the end of the line of swallows, but is placed by itself on a knoll, and so surrounded by long mounds as to be protected on three sides, constituting a sort of enclosure by itself. East of this, in the neighborhood of Muscoda we find the eagle to be the common emblem.

The eagle clan appears to have been a large clan. It extended from near Port Andrews, up through all the towns on the Wisconsin river, and as far east as Sauk City, and even extended

† There was seen a mile west of Horton, near the depot. Here each square knoll was the site of a tall, narrow, upright, and is elevated by the knoll so as to overlook the lake and form a striking feature in the landscape. A similar group was seen north of Horton. Here the effigy of a man stood the summit of a knoll, but near it was the effigy of a swallow. The name of this group is unknown, but it illustrates a common custom.

† Men's mounds are common in the region of the four lakes and at Devils Lake, but are not seen anywhere else. For this reason, we have designated the man as the totem of the region.

over the water-shed, and left its totem on the banks of the four lakes at Madison. Mr. S. Taylor was the first to recognize the eagle, but he said nothing about the eagle clan and did not follow up the subject in this way. In fact, all the early archæologists were successful in their work of identifying particular birds and animals, but did not undertake to trace the clan emblems or to study the totem system. The eagle effigy, discovered by Mr. S. Taylor, at Black Earth, marks the western extremity of this clan. The eagles which, in company with Prof. F. W. Putnam, we discovered at the Dells, may have marked the eastern extremity, though the center of the clan habitat proper was in the vicinity of Eagle township. We notice that there is a difference in attitude of the eagles. At Muscoda there is a bird effigy

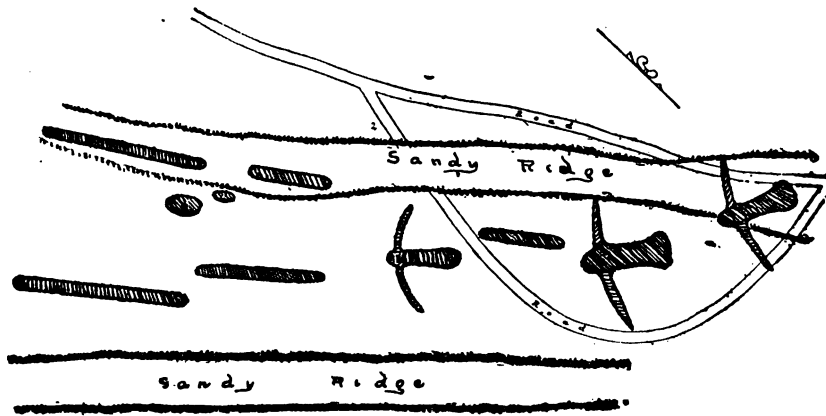


Fig. 4.—Pigeons on the Lemonweir River.

which is about 1,000 feet in length, with the wings straight out. We also found about twenty eagles with their wings partly folded in the spread eagle attitude. At the Dells of the Wisconsin and near Sauk City, the eagles have their wings in a straight line, exactly as they are on the asylum grounds north of Madison. At Honey creek there are two eagles near a game drive, and near the game drive two elks, with a fox watching the elks, but in this same locality we discovered several swallows, showing that the swallow clan came into the territory of the eagle clan. There was a clan situated northwest of the eagle territory, which had for its emblem the pigeon. See Fig. 4.

We present a cut taken from Lapham's work, of a group at Mauston. It represents a game drive; there were garden beds not far from this; Old Decorah's burial place was at Mau's Mills. The habitat of the pigeon extended west perhaps as far as LaCrosse. There is a large group of burial mounds south of

Sparta, which is inside of the territory. The group at New Lisbon may belong to this clan. A clan was situated on the Mississippi river about LaCrosse and Trempeleau, on either side of the Mississippi; we are uncertain about the emblem, and can not give the name. One of the most interesting clans was that which had the mink for its emblem; this was located on the Wisconsin river, near the Portage. It bordered the eagles on the west, and the squirrels on the east; its habitat extended from Sauk Prairie and the Dells, across the Portage to the north side of Buffalo Lake.

There seems to be mingled with this clan emblem, that of another clan, whose habitat is uncertain. The raccoon is found in effigy, closely associated with the mink, throughout the territory of the mink clan. See Fig. 5. It assumes a great variety of attitudes; the effigy never bears the conventional type that it

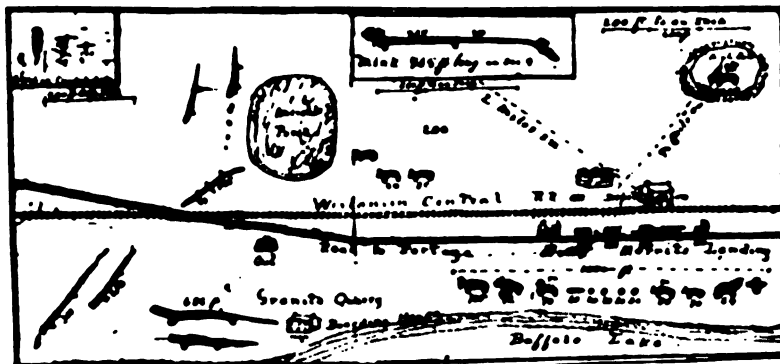


Fig. 5.—Mink Effigies at Merritt's Landing.

has on the Sheboygan and Milwaukee rivers, and so it is doubtful whether it was a clan totem.

The most interesting place for the study of the mink clan is at Merritt's Landing, or Packwaukee. There, mink effigies are associated with a large number of grazing animals, such as the elk, the moose, the buffalo; these were animals which were probably common in this region, for it is a region of mingled forests and lakes, and unlike the prairie regions. The bear is also a common effigy here. See Fig. 11. Here there are two or three very large mink effigies—one of them seven hundred feet long. It is so long and so level that the farmer who owns the land has placed his gateway at the head of the mink and drives to his field on the body of the mink, the roadway being open where the effigy is, but a second growth of timber comes to the very edge of the mink on either side. The mink is nearly as long as the whole drove of animals, the group on the edge of the lake being one thousand feet and this seven hundred feet long. Another mink near by measures four hundred and fifty feet.



On the south side of the lake, about ten miles to the east of the mink clan, the habitat of the squirrel clan began. Both clans seem to have had their hunting grounds on this lake. The elk, buffalo and moose were the animals which they hunted. There are many elk effigies on the north side of the lake, but the mink effigy is associated with them, mink effigies being also found west of Buffalo lake, near the headwaters of the Fox river. Squirrel effigies extend across to Puckaway lake, on the north side, but do not extend west of Buffalo lake. The squirrel clan here hunted the elk. There is a group of squirrel effigies near Montello. Here the elk effigy is surrounded by squirrels, everything in the group indicating that it was the hunting ground of the squirrels. See Figs 5, 6 and 7.

A description has been given of the effigies which are scattered along the edge of the bluffs overlooking Green lake, not

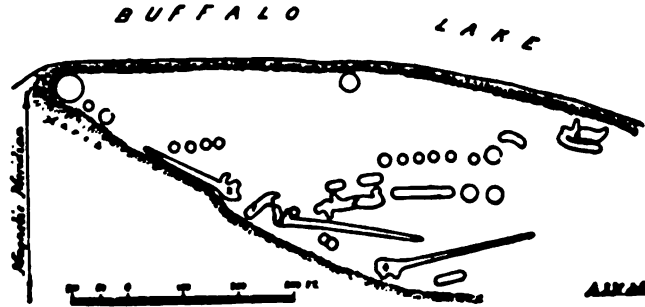


Fig 6. - Squirrel Effigies near Montello.

far from the city of Ripon. We have regarded these as another contrivance of the effigy-builders for entrapping game. The group is very interesting and is situated immediately opposite the village site of the squirrel clan. At the end of the lake is a group which represents two bears chasing a deer. The deer effigy in this group, surrounded by the squirrel effigies, is very suggestive. See Fig. 7.

There is one contrivance which the squirrel clan adopted that is worthy of notice here. They made two squirrels on a large scale, and twisted the tails of the squirrels around over the back, very much as it is twisted in the squirrel effigy on the asylum grounds opposite Madison, but between the tail and the body of each squirrel, they dug a large pit in the sandy soil, and so made a trap for the animals which they would drive from the forests towards the lake.

It is probable that they placed timber or brush, palisades or fences around these traps, but the squirrel effigies and the pits are all that are left. The mink clan placed a moose on the highest hill that they could find, and from the top of this massive effigy could watch the squirrel clan chase their game; for the

two groups are not so far apart but that on a clear day they might recognize their presence, or at least they could exchange signals with one another. We are convinced that the clans were friendly, for these signal stations are scattered all over the state; but the border lands between the clans may have been common property. This finishes up the map of the clans, so far as they have been identified. There may have been other clans in the forests to the north of the Wisconsin and Fox rivers. The effigies on the Pine and Lemonweir rivers indicate that there were clans on both of these rivers, and perhaps on the Black river and upper Wisconsin, but the region has not been explored sufficiently to give their name or location.

III. The enquiry has arisen whether any other figures besides clan symbols were used by the effigy-builders. Some have maintained that there are crosses and circles and various conventional figures, which were significant of sun worship. To us it seems improbable. Mr. Frazer maintains that while totemism as a religion tends to pass into the worship, first, of animal gods, next of anthropomorphic gods, totem clans tend to pass into local clans. The fusion of clans may also be represented by the combination of totem figures. And there

Fig. 7.—Signal Effigies on Green Lake.



may be split totems, in which only a part of the animal is represented. So there may be cross totems, and private or personal totems. Occasionally vegetables, such as the potato, gourd and squash, may be used as totems. Weapons also, such as the battle-axe and the war-club, are represented in the effigies, but the wild hunter tribes rarely reached the stage where the sun symbol was used. Still we have discovered one effigy which looked very much as if this people was familiar with the emblem which was common among the tribes of sun worshippers. We refer to the emblem of the face—the face of the Manitou. We discovered in the midst of the group which we have described above as belonging to the mink clan, an effigy of the owl. It is the figure of an owl with projections above the head, making it resemble a horned owl; the eyes were not in the head, but under

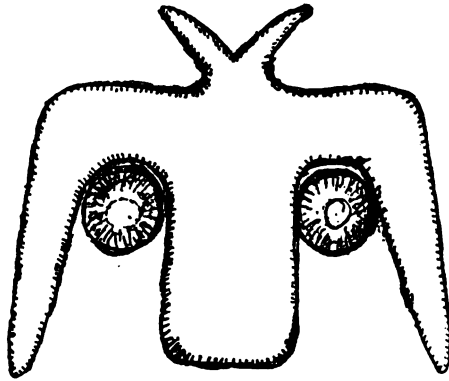


Fig. 8.—Owl.

the wings. They were composed of two small ponds of water, which undoubtedly shone with a silver radiance under the light of the moon, making the effigy impressive. See Fig. 8. There is evidence also that the effigy-builders were serpent worshippers.

We have discovered the serpent effigy in so many places that we are inclined to believe that this tribe had the same superstition which was common both among the Mound-builders of Ohio and the stone grave people of Tennessee, for this prevalence of the serpent effigy is otherwise very difficult to explain. There is no doubt of its presence in Ohio, in Illinois, in Dakota, and in Wisconsin. We think that the affinity of the effigy-builders to the tribes adjoining is shown by this means. It may be that the migratory route of the effigy-builders may be traced. We give here the cut of the serpent effigy which the author discovered at Quincy (see Fig. 9), the description of which may be found in the chapter on Migrations in the work on "The Mound-builders." The effigy is remarkable for two things: It is conformed to the bluff, and is another illustration of the geomancy

which was common. There were skeletons of snakes coiled up on the cremated body which was placed in the altar or fire-bed at the bottom of the mound, perpetuating the same custom which was common among the Basques of burying or throwing serpents into a pit, consecrating them to a fire god.

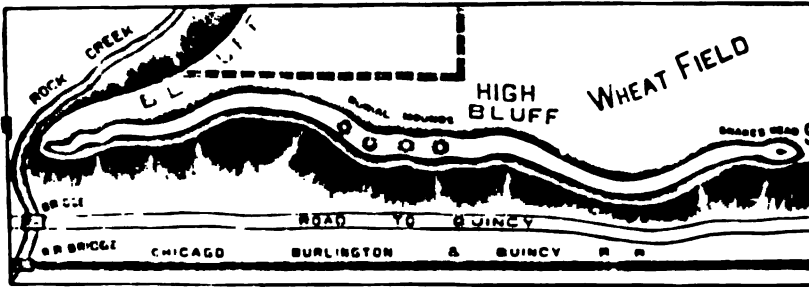


Fig. 9—Serpent near Quincy.

The fact that so many effigies are conformed to the shape of the ground shows a repetition of the custom or superstition we have termed geomancy, changing the term necromancy to express the idea that the earth was possessed by a spirit, the spirit of an animal. One such figure was found in a group of effigies three miles from the capitol of Madison. It represents a lizard placed upon the summit of a ridge, its legs upon the spurs, which extend upon either side of the ridge, the body and tail extending the whole length of the ridge. The same peculiarity is exhibited in the group which is represented in Fig. 10. This group is situated three miles north of Horicon. It illustrates one point. The fancy of the effigy-builders and the custom of making the situation set off the beauty and symmetry of the effigies.

Others might be mentioned which are mere imitations, the creations of fancy, objects on which the native artists had expended their skill merely from the love of art. Some of them are grotesque, and were perhaps erected for amusement, and others are excellent imitations. The following groups are illustrations of this: There are two animals north of Buffalo lake, not far from Crooked lake, which resemble squirrels. The platting of these effigies brings out the fact that they are not squirrels at all, but raccoons. We find in them both nearly the same measurements, but as the lines come out on paper we find the crooked legs, the



Fig. 10—Group near Horicon.

small head, the high curved back, the short belly and the curved, bushy tail—all of which are peculiarities of the coon. Near these coons we find a turtle—but a turtle in a most novel attitude, the attitude which a horse assumes when he “racks,” two legs upon one side thrown forward, two on the other side turned back, the whole figure being distorted and twisted as only a

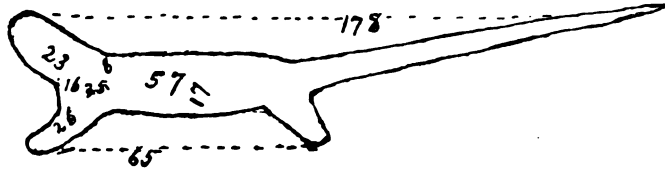


Fig. 11.—Wolf Effigy near Endeavor.

turtle can twist. On the west side of Green lake, squirrels appear in great numbers; every one of these squirrels has a different attitude, but an attitude perfectly natural to the animal.

There is an effigy on the east bank of Lake Mendota, but two or three miles from the capitol, which represents an antelope in the attitude of jumping. See Fig. 12. The antelope has the head partly thrown back, the rump thrown up, the hind legs drawn toward the body, very much as any antelope would jump. An instantaneous photograph could not take the attitude better than did these native artists. Take another instance. There are two animals north of Buffalo lake. There is the effigy of a wolf in

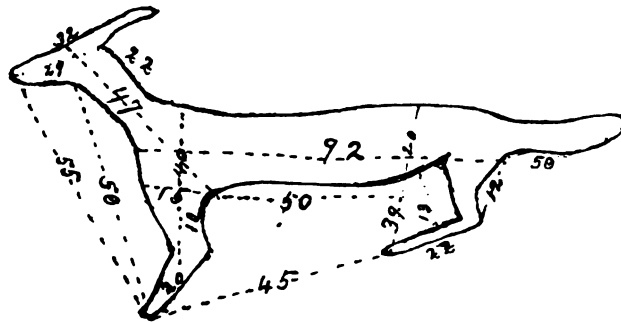


Fig. 12.—Antelope near Madison.

the vicinity of Merritt's Landing, which shows much skill of imitation. It has the proportions very correct. The gigantic figure of a mink may be seen in this locality. It is given on a small scale in the cut (see Fig. 13), but it is a gigantic figure as it lies on the ground. The wonder is that the proportions of the animal could be preserved in an effigy which was seven hundred and sixty-five feet long.

The otter is another figure which is well represented. See The fox also was used by the same clan. This effigy

was found near Crooked lake, in the midst of a number of bird effigies. The moose was used by the mink clan as a symbol as well as an ornament; the moose represented in the cut is situated on the summit of a high hill overlooking Buffalo lake. It commands the view of the group in which the squirrels and the elk are numerous on the opposite side of the lake. There is also a striking effigy on the north side of this lake, which represents the badger. This may have been only a creation of fancy.

IV. We now turn to the religious elements in the effigies. These are not fully understood, and the interpretation of them we must acknowledge to be somewhat conjectural. They are the features which bring so much confusion into the system of clan totems. We think that there was a symbolism among the effigy builders. It was a symbolism connected with totemism, which was a religion by itself. As a religion it had to do with the relation of man to animals. The members of the totem clan call themselves by the name of the totem whose emblem they carry. They believe themselves to be of one blood, descendants of a com-

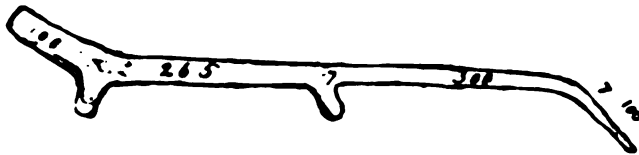


Fig. 13.—Mink near Merritt's Landing.

mon ancestor, and that an animal; they are bound together by common obligations to each, and a common faith in the totem. Totemism is both a religious and social system—this prevailed among wild tribes. The Iroquois have totems, such as the turtle, bear and wolf, and imagine they were descended from bears, wolves and turtles. The mythology of the Californians abounds with the coyote, and they think they are descended from the coyotes. The Delawares descended from the common turtle, which was the first of living beings—it bears the world on its back. The tribe which built the effigies had a similar totem system, and seem to have a general and specific or tribal and clan totem. The serpent is an effigy which we conjecture was a general totem, either tribal or national, possibly inherited, and so would be called a stock totem.

1. The mingling of the clans in connection with religious ceremonies and feasts seems to be recorded in the effigies. Nearly all Indian tribes are known to have dances in which they dress themselves up like animals and imitate the animal attitudes. They call the dance after the names of the animals. Catlin speaks of this as common among the Mandans, and has painted some of the scenes. The plates in his work exhibit these dances and shows the manner in which they imitate the forms of animals. In the buffalo dance they wore the horns of buffaloes on their

heads and assumed the different attitudes of the buffalo while they danced. Prof. A. W. Williamson says that the Dakotas, when they danced, imagined that they were possessed by the very spirits of the animals which they imitated.* The pictures which are given by Catlin also convey this impression. In these pictures we see the Indians taking the attitudes of the animals as if they were possessed. They become, for the time, wolves and panthers and wild animals. This superstition will account for the presence of so many animal figures in connection with the clan emblems. They are groups of effigies which seem like menageries in pantomime. The animals are not only mute, but are motionless. They are transfixed and placed on the soil as if arrested in full life, but paralyzed. There is a group of effigies on the north side of Lake Mendota which illustrates this point. See Fig. 14. Here we see the panther, the mink, the buffalo,

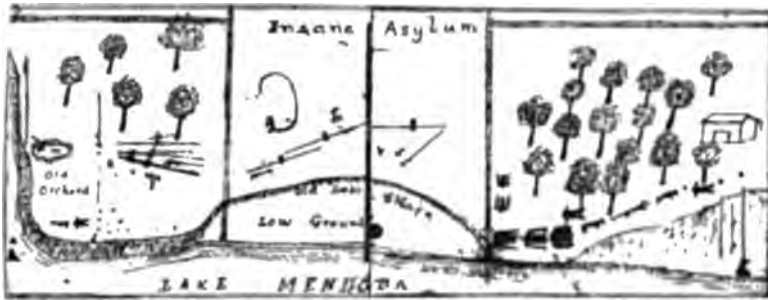
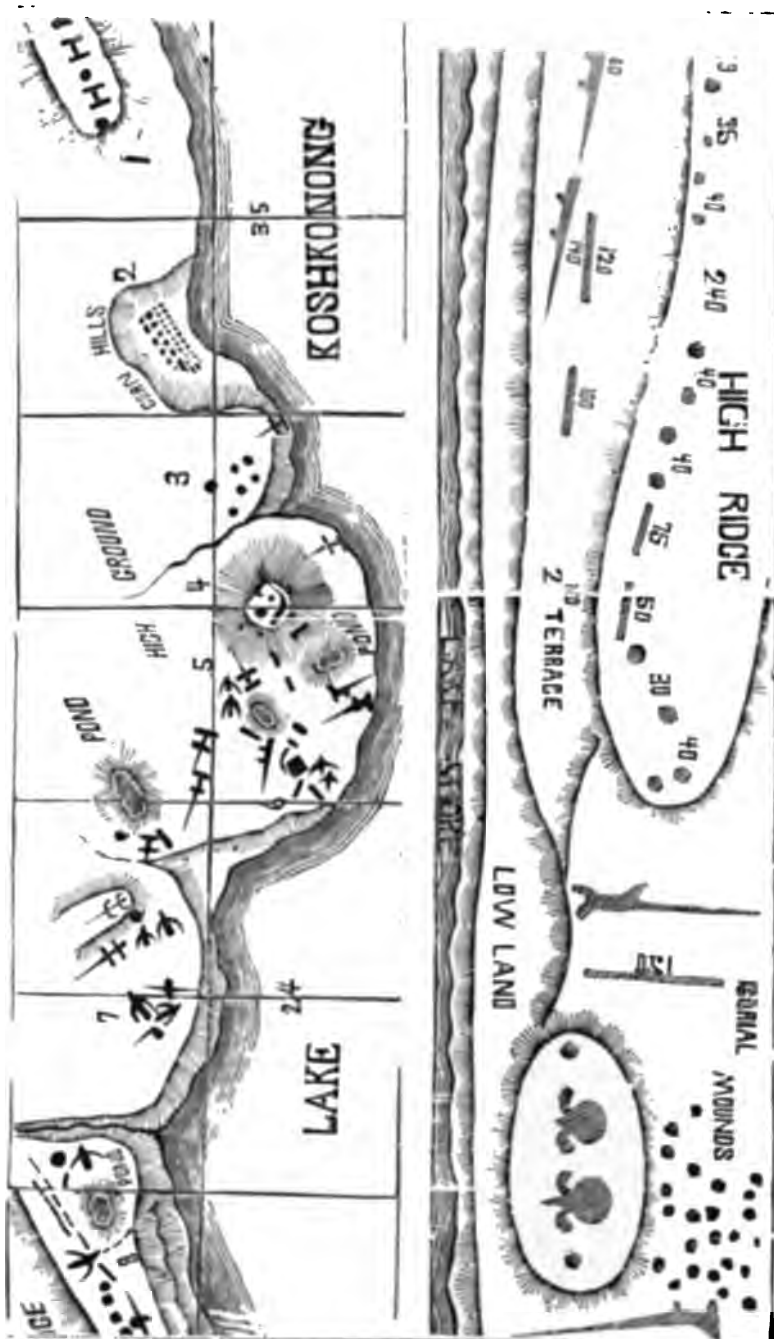


Fig. 14.—Group at Lake Mendota.

fox, wolf, pigeons, man mounds, eagles, the deer, squirrel, and many other animals arranged along the shore, without any other ostensible object than to make an array of animal figures. The most of these figures were used as the emblems of the clans surrounding—panther, mink, bear, eagles, pigeons, squirrels, while others seem to have been used as prey gods and game

*The latest test-remembrance was held in Kaposia, South St. Paul, at the summer of 1897. Its chief object was the initiation of new members into a secret society, the Wakan order, into which only favored Indians were admitted. Members are from many tribes. They stated that in some of these dances the Indians had a very good time, for the time, by transmutation of souls, the very animal they were to kill and imitate, and necessarily they imitated them, they acted just as much, just as these animals would, under the spell. The buffaloes and deer ate grass, panthers, wolves, bears and foxes ran and leaped, they were the small animals and fishes brought into the enclosure for their purpose, tearing them with their teeth and eating them raw. At another time some man, giant spirit, it was supposed, took possession of the one to be imitated, and the most terrible and ferocious of the dancers, with guns and bows and arrows, were ready to shoot the victim as soon as the signal was given. Whatever the object of worship, whether animal or fish, tree or stone, they were always careful to state that it was not the object itself, but the Wakan, the soul that was about to haunt the object, which they worshipped. In some cases the soul of a departed ancestor had entered into the animal and they worshipped that. They stated that the souls not only haunted the animals, but in an especial manner were present in the photographs and images which represented the animals and which were used in the dances. They also spoke of particular times in which they danced a natural resemblance to some object, either animal or other form, and therefore, in an especial sense the seat of the soul or spirit of that animal. In Hudson, Wisconsin, was the home of the Fish God, on a point of the Fish bar, a place near Big Stone Lake was the home of the Thunder God, a place on Hawk Creek, about three miles from its mouth, in Kenosha County, the home of the Hawk God. The same resemblances and superstitions are recognized in the effigies.



Figs. 15 and 16.—Effigies on Lake Koshkonong.

gods, in connection with the game drives of these clans. It is possible that this entire group was designed to represent a combination of different clans in a grand hunt, in which the game, either deer or buffaloes, were driven into the water. The effigies have been used as screens, behind which the hunters would hide.

There is a group on the east side of Lake Koshkonong which may be designed to perpetuate the same record. See Fig. 15. This seems to have been the permanent residence, for there are in it look-outs (1), cornfields (2), sacrificial places (4), assembly places (5), council houses (7), and burial places (8), all indicating permanent occupation. We imagine that the turtle clan was the prevailing one, but there are many other effigies in the group which we are at a loss to explain, except on the ground that they represent different clans. This interpretation is subject to correction, but it is the most plausible one we can furnish.

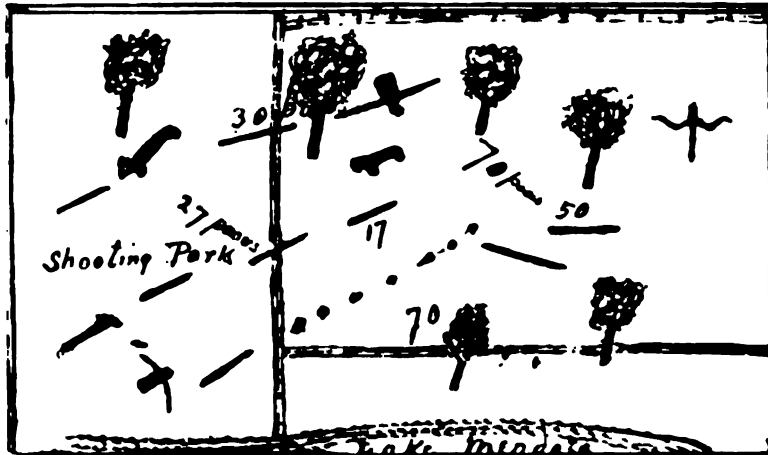


Fig. 15. Game Drive at Shooting Park.

There is a group of effigies on the opposite side of the lake, which is more distinctly a clan emblem. Fig. 16. It consists of a number of effigies of panthers and wolves, with two tortoises, a number of long mounds, and about a hundred burial mounds. One panther seems to be guarding the burial mounds; another seems to form a part of the game drive; while the wolves may have served as screens for hunters. There is a mingling here not so much of clan emblems as of offices, different uses having been made of the effigies. The two groups are opposite one another.

2. The record of the hunting places of the people is left upon the soil. The dream gods, or game gods, have been mentioned. They perform a part in the real life of the Indians hardly appreciated by white men. The groups of effigies which we are about to describe will show how important a part in the life of

the effigy-builders. We have said that these people were great hunters. Proof of this is given in the number of game drives which have been recognized. There is scarcely a clan habitat in which there are not several of these game drives. A different drive seems to have been used for different kinds of game, such as the deer, buffalo, elk, and moose. The game drives generally furnish a picture which is very easily interpreted. There is a game drive on the north side of Lake Monona, east of Madison, between the shooting park and Mill's Woods. It represents the buffalo as the game and the bear as the prey god. The eagle, pigeon and wild goose are numerous in the vicinity. Fig. 17.

Nearly all the Indians of the hunter class are known to have their dreams, in which animals figure conspicuously. They rarely undertake hunting expeditions without dreams. They

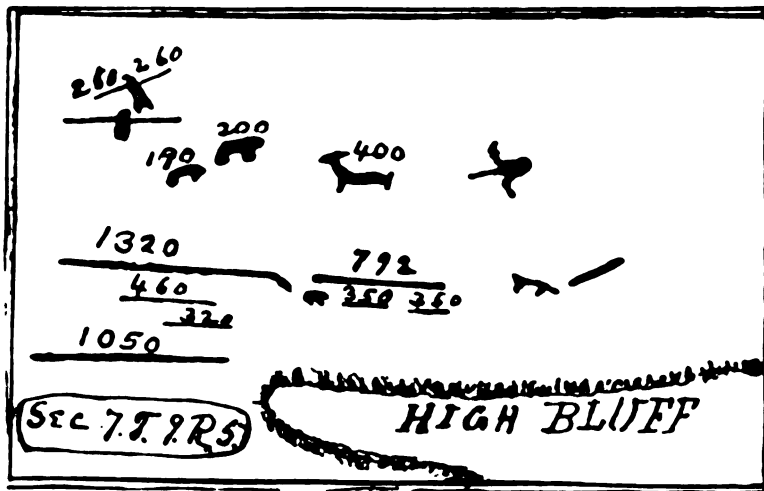


Fig 18 - Picture of a Hunting Scene as Uncovered by the Effigy builders.

went to war under the protection of dream gods. The young men were initiated after they had had dreams, and always bore the figure of the dream god about their person. All writers who are acquainted with the habits of the Indians speak of these superstitions.

We think that any one who looks upon the picture given herewith (See Fig. 18), and notices the long mounds in proximity to these, the effigies of the fox, the bears, the deer, the eagles, and the bird, will not fail to see that it is a game drive, and perpetuates the superstition which the people had about the different animals. We certainly have the prey gods and the game gods, and the clan divinities all associated here together. It is a lively scene, and one which brings the wild hunters very near to us. There is another group also corresponding to this, on the Wisconsin river, section 5, town 10, range 7 east, in which the

buffalo or elk is the game, the swallow is the clan emblem and the fox is the prey god. The group at Merritt's Landing shows that the mink was the clan emblem, the elk was the game, the wolf and the bear the prey gods. These groups are so numerous and convey the idea to us so plainly that we have not a doubt of the correctness of the interpretation.

3. There is a class of earth-works and effigies which is very common in the states, and which is repeated in nearly every clan habitat. We refer to those long lines of mounds which resemble earth walls broken into fragments, with openings between them. They are generally built upon the summit of high bluffs and run the entire length of the ridges. They may have been used for the purpose of watching game, and been raised above the level of the surface so as to give an unobstructed view. There is no class of mounds more numerous than this. We have discovered one such line near Potosi. It is the effigy

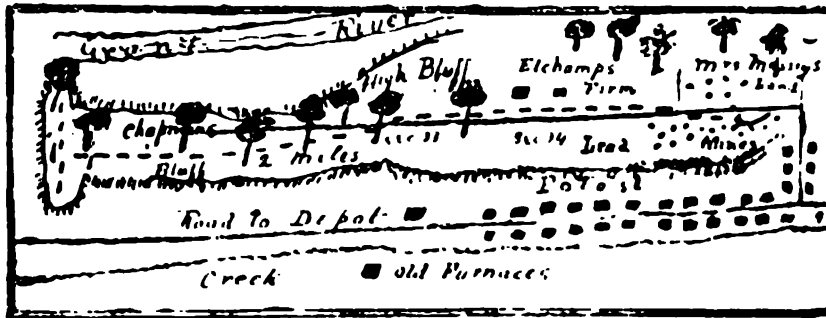


Fig. 19.—Mounds near Potosi.

of a panther at one end. This panther is surrounded by the holes which were left from the old lead mines. Fig. 19. The line extends from this point for two or three miles until it reaches the edge of the bluff, which overlooks the Mississippi river. Another similar line was discovered on the bluff just north of Governor Dewey's house, which is now in ruins, on land belonging to General Newberry, of Chicago. This land runs parallel to the river for two or three miles and commands a view of it throughout the whole length. Another line is situated on a bluff above Wyalusing, near the mouth of the Wisconsin river. Still another, near Bridgeport, six miles above the mouth of the Wisconsin river. A similar line may be seen north of Lake Koshkonong. Still another on the south shore of Lake Puckaway, near Marquette. All of these overlook some group of mounds situated on the lower lands, but command extensive views. One interpretation which has come to us is, that they were designed for hunters, as roadways by which they could run while watching the game, which were driven down to the villages and hemmed in between the game drives and there shot, or road-

ways so sentinels or watchmen could run from their lookout stations toward the villages. Either supposition is plausible, for they generally have a lookout point at one end and overlook the villages or game drives at the other end. They could hardly have been used as screens or barriers to intercept game, for many of them are erected along the edge of some narrow cliff or ridge, over which it would be impossible to drive the game.

There are, to be sure, a few lines of mounds resembling these, which have been placed along the edge of bluffs, overlooking the rivers, which reminds us of the custom of the Indian hunters, of making fences of brush with gaps or openings, through which they would drive the deer. One such barrier or screen is located on the Wisconsin river, between the bridge to Muscoda and

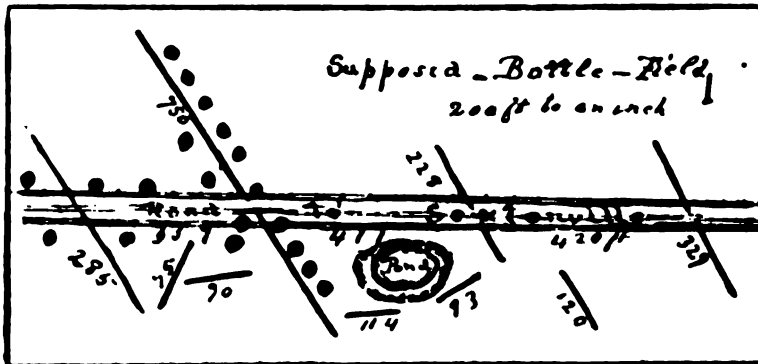


Fig. 19. - Bottle-field.

Orion, scattered along at intervals between the long mounds. Many so-called screens have been noticed as built along the edge of swamps and lakes, close to the water. These are formed from long mounds and effigies. Their object is plain. They were designed for the sportsmen, who would hide behind them and shoot into the flocks of geese and ducks which were floating on the water. One such screen has been noticed at White lake, near Lake Mills. Occasionally effigies are seen along the edge of swails, which would be feeding places for deer and elk. These were also used as screens. They were mechanical contrivances, but the clan emblem, or the emblem of the game itself, would constitute the screen. These were all contrivances of the hunter, designed for different kinds of game. They show great familiarity with the habits of the animals which were hunted. For this reason we think our interpretation of the long mounds is a correct one.

4. Another class of effigies, concerning which there is some obscurity, consists of parallel rows of long mounds, round mounds and effigies. It is a question whether these were used for game drives, burial places, or to mark the scene of some battle. The figure given illustrates the class. See Fig. 20.

This group is situated on the level prairie, but five miles north of Richmond Centre, on the Wisconsin river, one mile south of Sextonville. There are effigies half a mile north and garden-bed half a mile south of this group. We have called it a battle-field, though it may have been used as a game drive. Some of the game drives have long mounds, with round mounds scattered at intervals, making them seem like tally strings.

5. There is a class of effigies which we shall mention as the one which is most thoroughly baffling to interpretation. It con-

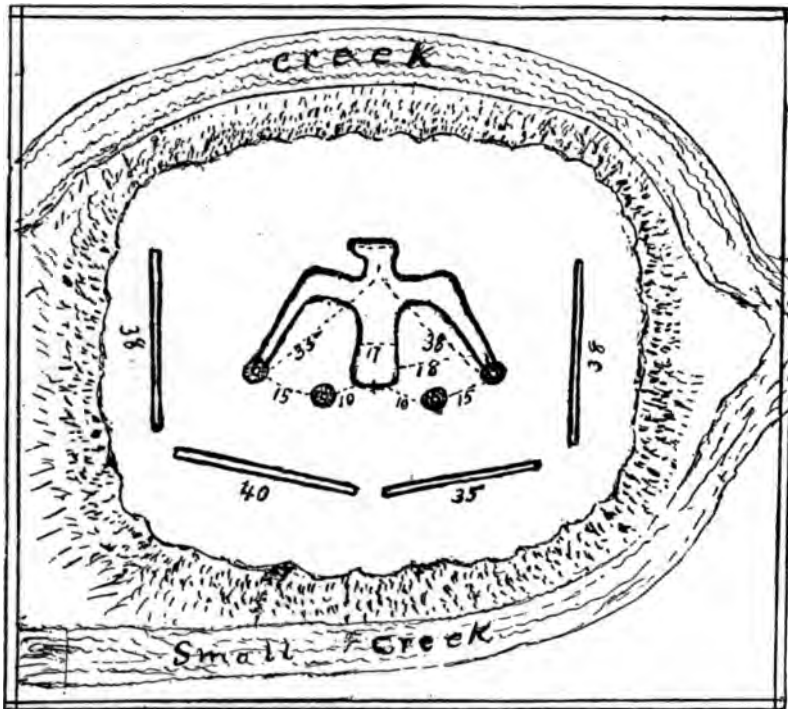


Fig. 21.—Citadel.

sists of a cluster of effigies arranged about an area so as to make a quasi enclosure. These clusters are frequently placed at the end of a long line of effigies. They remind us of the rock inscriptions in Arizona. They seem to be symbolic. Our conjecture is that they mark the place of some ceremony or religious feast, or of some council house, and are suggestive of some secret society. A specimen is given in the cut. This, as will be seen, consists of four or five mounds, which surround an effigy mound. There are round mounds at the end of the wings of the effigy. The group is situated on an isolated swell of ground, and covers the entire spot. It is situated at the end of a line of swallows, which is the clan emblem of the region.

The impression is that it was the place for the celebration of some mystery. It is, perhaps, only another of those clusters which Mr. S. Taylor calls citadels. There are many of these works scattered over the state. Their object is still unknown. Many of these so-called citadels (see Fig. 21) are placed upon high ground and command an extensive view. This one is upon low ground, but is isolated from the surrounding region by dug channels upon either side. There is a high mound at the other end of the long line of effigies which commands a view down the river. It is said that signals could be exchanged between this and Boscobel, some five miles away.

6. The last point which we shall bring out is, that there may have been a kind of picture writing embodied in some of the groups. This may be a mere conjecture, but there are so



Fig. 22.—Picture Writing, Tennessee.

many groups which can be explained in no other way. We would here call attention to the rock inscriptions which have been recently discovered in Tennessee. See Fig. 22. These inscriptions are composed mainly of animal figures. The figures are in rows; they differ from the ordinary inscriptions in this respect. There are other rock inscriptions which contain animals in all sorts of attitudes. The comparison between some of the groups of effigies and these rock inscriptions is very suggestive; no key has yet been found to unlock the mystery; they have not been interpreted. So with the effigies, they contain a record for which there is no key. We leave these groups unexplained. They seem to embody the history of the different clans—at least the totems of the different clans arranged around one another in such a way as to be very expressive. The language is not understood, yet they are strained almost to the point of utterance. We can hardly regard them as mere works of fancy. There is an unknown record in them which baffles interpretation.

PALESTINE EXPLORATION.

BY THEODORE F. WRIGHT.

In August last, the Palestine Exploration Fund issued a notable volume of special lectures which was delivered in London in May, by men eminent in their various fields. Col. Sir John Charles Wilson spoke of "Ancient Jerusalem;" Major Conder, of the "Future of Palestine;" Canon Tristram, of the "Natural History of Palestine;" Walter Besant, of the "Work of the Fund;" Dr. Wm. Wright, of the "Hittites;" Professor Flinders Petrie, of "Lachish," and Canon Dalton, of "Traveling in Palestine." The lectures were largely attended and gained a good sum for the Fund to be used in its work of uncovering Lachish, mentioned in Joshua, X. More recently the January issue of the Quarterly Statement contains an account of the work carried on at Lachish by Mr. Bliss, with figures of the most important articles discovered.

So far altogether the most valuable find at Lachish is the tablet which closely resembles those found at Tell Amarna and contains similar statements. Major Conder has just issued a volume dealing with all these tablets, one hundred and seventy-six in number and written about 1480 B. C., by Amorites, Phoenicians, Philistines and others, including the Kings of Hazor, Jerusalem and Gezer, contemporaries of Joshua. Their statements refer to the Hebrew conquest and name about one hundred and thirty towns and countries, most of which are already identified.

The Egypt Exploration Fund is to continue its work at Tell Amarna and the Palestine Fund at Lachish in the hope of finding further inscriptions, but enough has been already found to give us a distinct view of political conditions in the Orient in the days of Joshua, and to show that there was considerable writing of letters in a most enduring form. It seems not unlikely that the study of these tablets will also unlock the Hittite inscriptions, which have hitherto remained sealed and which undoubtedly contain many historical data. It will be very interesting to get at the Hittite side of the story of their wars with the Egyptians, who have so gloriously recorded their victories, over the Hittites, on the walls of their temples.

But the most pressing question in the popular mind now, is as to Gordon's Tomb or the Gordon Tomb, as it is called. When in Jerusalem General Gordon fixed upon a certain empty tomb as the place where the Crucified One was laid. The

place has been visited by tourists and has gradually become an object of great interest. The owner offers to sell it for four thousand pounds. An appeal for this sum was made in the *London Times*, and was endorsed by the Archbishop of Canterbury, the Bishops of Salisbury, Ripon, Rochester and Cashel, Canon Tristram, Prof. R. Stuart Poole and others. A lively controversy immediately sprung up between sentiment on the one side and science on the other and this resulted in so strong a showing of scientific grounds for doubt that the matter seems to have been dropped for the present. The discussion appears in full in the Quarterly Statement. It is evident that, if Bible sites are to be determined by good men and women without external proof, the whole work of the Fund is at an end, since no room is left for scholarship.



"MAN AND HIS WORKS."

THE ANTHROPOLOGICAL BUILDING AT THE WORLD'S COLUMBIAN EXPOSITION.

By HARLAN I. SMITH.

Supplementary to my communication, "American Antiquities at the World's Fair," which appeared in September, 1892, No. 5, Vol. XIV of *THE AMERICAN ANTIQUARIAN*, it will doubtless be of interest to know that applications have been made for much more space than it is possible to grant in the various departments of the World's Columbian Exposition. Perhaps it was this that originated the necessity of constructing another new building on the fair grounds. This building, now being erected, is to be known as the "Anthropological Building." It is 415 feet long and 225 feet wide, and in it will be exhibited the archaeological collections and in fact all of the objects coming under division "M" that would otherwise have been in the gallery of the building of Manufactures and Liberal Arts.

The very suggestive motto, "Man and His Works," will adorn the Anthropological Building, in which so much will be shown to illustrate the progress of man and civilization on this hemisphere.

The anthropologists of America are well pleased to have an entire building with a name covering all sections of division "M" and that acknowledges pure science on the exposition grounds; especially in a branch which, although recognized as an important study in Europe, has only of late come to be so considered in this country. Prof. Putnam will now have an

entire building for his department and will thus be able to much more satisfactorily illustrate the bearings and relationships of the various exhibits included in that department than would have been possible as it was formerly arranged. Moreover, the new building adjoins the ethnographical exhibit, which will form such an interesting part of the exhibition under the charge of Prof. Putnam. In this way the exhibits of the entire division will be together, whereas, according to the previous plan the collections would have been at some distance from the out door villages of native people. The log cabin of colonial times and the representation of old Fort Dearborn, the original site of Chicago, or Chicago as it was eighty years ago, will be located near these villages. The United States government is making an exhibit of the Indian Schools in connection with this department. At this school it will be possible to see the results of the work in the educational line among the American Indians.

On approaching the Anthropological Building the visitor will pass through the reproduced ancient cities of Central America, viewing the casts of idols, inscriptions, etc., taken from the molds obtained by Mr. E. H. Thompson, U. S. Consul to Yucatan, and by the Peabody Museum Honduras Expedition, under the charge of Mr. Owens. Near the main entrance to the building is situated the "Portal of Labona," a reproduction in staff of that wonderful ruin in Yucatan. Mr. Thompson has just returned to Yucatan from an extended visit of nearly six months, during which time he has been directing the construction of the reproduction of these interesting ruins.

In the northern end of the gallery of the building will be a Laboratory of Physical Anthropometry. Here the sciences of psychology, neurology and anthropometry will be practically illustrated. The visitor will here be given a chance to have his measurement taken and see his place on the charts which are made to show the physical characteristics of man.

Among the many foreign countries which have applied for space in the Anthropological Building may be mentioned, Greece, Italy, France, Spain, Mexico, Russia, England, Canada, Brazil and Australia. Besides these there will be special exhibits from Holland, Austria, Germany, Japan, Palestine, Egypt, several republics of South and Central America and from a number of the Pacific and Atlantic Islands.

The special exploring parties, which have been sent out by the department, under the direction of Professor Putnam have brought back some wonderful results. In the north, Lieut. Peary, of the Greenland Expedition, has obtained a valuable assortment of specimens from the Eskimo tribe at Whale sound. This tribe is but little known. Lieut. Peary has not only obtained many objects, but also several hundred photographs of the individuals of the tribe and pictures illustrating their every day life. He also took a complete census of their tribe, together

with full anthropometrical data. The Skiles Expedition to Labrador has brought back over fifty Eskimo, with their personal property, so that the visitor will here be able to observe a village where the life of these people will be represented just as it exists in Labrador. Dr. Sheldon has made large collections illustrating the ethnology of the Pacific Coast, not only in America, but also in Siberia. The great Yucan valley in Alaska has been explored by Mr. Cherry, with gratifying results. Three car loads of material from Queen Charlotte Islands have arrived here, having been sent by Mr. Deans. Whole villages of these people will be represented, together with their curious totem poles. The Iroquois Indians are to be represented by the state of New York. This state will also send extensive archaeological collections. In regard to the explorations in Ohio, much is already known by the readers of *THE AMERICAN ANTIQUARIAN*, and space will not permit details on this point. In the Delaware Valley, Mr. Volk has made some wonderfully successful explorations and has also obtained a large amount of valuable material for exhibition. The results of recent exploration in Connecticut, soapstone quarries and burial places in the Androscoggin valley will be exhibited. The wonderful reproductions from Honduras and Yucatan have already been mentioned, but further south in Peru, Ecuador, Chili, Bolivia and on the Island of La Plata, Mr. Dorsey has been in charge. The results of his extended research have been very rich. The specimens are now in the bonded ware house and the collection includes many mummies, vast hords of pottery vessels, some intensely interesting little gold images, and other articles too numerous to mention here, illustrating the culture of those ancient people. Mr. Dorsey also secured several hundred photographs of kings, etc., which will be of great interest.

From the first to the last the exhibits of this department will be arranged and grouped to teach a lesson; to show the advancement or evolution of man. There can be no doubt that this chance to show the real uses of anthropology as a practical study will do much to fully establish its recognition in the educational institutions of this country.

Chicago, February 27th, 1893.

TENTH ANNUAL REPORT OF THE PUBLIC
MUSEUM OF MILWAUKEE.

FOR THE YEAR ENDING AUGUST, 1892.

Mr. Henry Nehrling, curator, repeats the same story previous reports, since several years, have been telling—increase of material and want of room. A building can contain only so much, and overcrowding has gone on until, at last, a proper distribution is not possible. Unless the premises are enlarged, specimens must, hereafter, be dumped into boxes and stored.

The first thing that strikes the reader of this interesting report is that the Public Museum, willingly or unwillingly, has undertaken too much, and that the very diversity of its work is a capital hindrance to success. There are no less than seven distinct departments. Persons somewhat familiar with the subject will be inclined to ask, if "excellence" is the museum's goal, whether it is not trying to bargain with the impossible? for the economic obstacles seem too great to be overcome.

A museum must either follow strictly scientific methods and let the popular side of its work come in as an incident, or primarily aim to gratify curiosity and amuse the visitor; both are laudable, but they cannot consist together. The key note to the scientific value of a collection is neither multiplicity nor diversity of examples, but completeness. If a natural history museum can show, for instance, *aves* only the *natatores*, but a series to whose integrity nothing is wanting, it will have done more for science than if it had collected three times as many birds, yet possessed not a single complete group. Mr. Nehrling appears to have some misgivings as to whether his work, however well done in detail, if viewed from a scientific standpoint, is altogether satisfactory, for he says: "A city museum should, if possible, select certain special lines of activity and pursue them with the intention of excelling. A local museum can achieve great things, rear a noble monument to science by doing thoroughly what is at its own door; but it must first recognize loyally that its aim and scope are limited, that its work is to be local."

During the year 82,000 persons visited the museum, chiefly in the months of September and October.

The department of archæology, or "anthropology," as it is scheduled in the report, which most concerns the readers of the ANTIQUARIAN, represents in value one tenth of the collection; but so meager are the details that not even a conjectural opinion as to its merits or of what it consists can be found. The "list of additions," however, seems to indicate a department made up of heterogeneous material.

O. W. C.

Editorial.

PRIVATE SERVICE UNDER PUBLIC PATRONAGE.

With this number of *THE ANTIQUARIAN* we give portraits of two gentlemen who have done good work in connection with the archaeology of the west—Dr. I. A. Lapham, who was one of the first surveyors and who wrote the first work on effigy mounds, and Dr. Lyman Draper, who was for so long the secretary of the State Historical society of Wisconsin. Dr. Lapham's work was not confined to any specialty, as he wrote upon native grasses of America and left a large number of beautiful drawings of prominent varieties of grasses. He was also a geologist and was at one time at the head of the geological survey of Wisconsin. His observations of the so-called "tides" in the waters of Lake Michigan also made him somewhat celebrated. Dr. Lapham's work is now fully appreciated by the state, of which he was an early settler, though during his lifetime his name and scientific attainments were better known in Europe than in his own city. It was the remark of Hon. Edward Holton, who was a prominent business man in the same city of Milwaukee, that he was surprised to find, while traveling in Europe during the years of the war, 1864-6, to find so many inquiring about Dr. Lapham, a citizen of the same place. There is an encouragement in this to those who are now engaged in volunteer work in the more advanced specialty to which Dr. Lapham gave his best service. If there is a park in the city of Milwaukee named after Dr. Lapham, and various public houses in Oconomowoc, his later residence, which also bear his name, and citizens generally of the state delight to honor him as one of the early settlers and prominent men, it may be expected that others who are contributing to the same science will be appreciated by the next generation. The same may be said of Mr. Lyman Draper, who was also prominent in the same state. The reputation of Dr. Draper was not formed in any work which he did in the field, or any book which he wrote upon the archaeology of the state, but was established by his indefatigable industry as a collector of books, though his book on the battle of King's Mountain is the best that ever has been written on the event. His monument is found in that remarkable library which is now held in trust by the state, but which belongs to the State Historical Society of Wisconsin.

The portraits of these two men are worthy of a place in the gallery of distinguished archaeologists, which we are furnishing in this volume. There was a similarity between them and yet

a contrast. They both lived at a time when it was not the fashion for any one to follow a specialty. In fact, the sentiment was against it, and the person who undertook the task was often regarded with a feeling of pity rather than respect, but both have won their laurels and are now commanding respect. Dr. Lapham's work on the Antiquities of Wisconsin was regarded as a very valuable contribution to science. It was published under the auspices of the American Antiquarian Society, but with the imprint of the Smithsonian Institute, as Vol. VII of Smithsonian contributions, both cooperating in giving to the public this valuable report of a survey. It was the third report which was published by the Smithsonian, the first being the remarkable work by Squier and Davis, entitled *Aboriginal Monuments of the Mississippi Valley*, which filled the whole of the first volume, the second being the report of the survey of the works in Ohio, by Col. Charles Whittlesey, the third being this by Dr. Lapham. Previous to these works there had been published certain reports and treatises both by the American Antiquarian Society and the government, the most of them the result of volunteer labor.

The earliest writer was Benjamin Smith Barton, a professor in the University of Pennsylvania, and a naturalist, who read at the American Philosophical Society, in 1794, papers relating to certain American antiquities, some of which were published in *Transactions*, Vol. IV. They contained a letter from Cardinal Winthrop Sargent, concerning articles found in a mound at Cincinnati. In 1797 he published new views of the origin of the tribes and nations of America. Thomas Jefferson also followed similar studies, but his collection was burned in 1801, and he wrote but little, except the volume entitled "*Jefferson's Notes*."

The American Antiquarian Society was organized in 1812. Caleb Atwater's treatise on *Western Antiquities* was published in the first volume of the society called *Archæologia Americana*. Several persons engaged in the survey of the lead mines of Wisconsin also furnished accounts of the effigy mounds about this time. Among these were Mr. Richard Taylor, in 1838, and Mr. Stephen Taylor in 1843. Mr. John Locke published a report in 1840 that was published in the congressional documents. These were the first scientific papers, though Jonathan Carver, in 1790, had described the villages of Wisconsin; Major Long, in 1823, had described the antiquities on the St. Peters river, in Minnesota, and Adair, the Indian agent, and Bartram, the botanist, had mentioned the pyramid mounds of the Gulf States; he described the Cherokees as still occupying them. G. H. Luskief's *Missions of United Brethren among the Indians* was published in 1794. Dr. McCulloch's *Researches on America* were published in Baltimore in 1816, and a new edition in 1820. John Hayward's *History of Tennessee*, in Nashville in 1823. C. S. Rafinesque wrote his introduction to Marshall's,

Kentucky, in 1824. Josiah Priest published his *American Antiquities and Discoveries in the West* in 1833. John Delafield's *Enquiry into the Origin of the Antiquities of America*, in New York in 1839. John MacIntosh's *Discovery of America, and Origin of North American Indians*, in Toronto in 1830a. Daniel Drake's *Picture of Cincinnati* in 1819; this contains description of the works formerly on the site of the city. S. P. Hildreth's *Pioneer History* appeared in 1843. These, with President William Henry Harrison's address and the election sermon of President Stiles, of Yale College, and Dewitt Clinton's *Memoir on Western New York*, gave considerable notoriety to the prehistoric earth-works. The *Documentary History of New York*, Vol. III, also contained the description by the Missionary Kirkland. Capt. Bernard Roman's *Concise Natural History of East and West Florida* was published in New York in 1776, and *Clavigero* in 1786.

It was between the years 1843 and 1854 that the largest number of valuable and reliable works appeared. At that time S. G. Morton published his *Crania Americana*, which was followed by several other works upon the aboriginal races, one published in Boston in 1842, in Philadelphia in 1844, in New Haven in 1846. Gallatin published his synopsis of *Indian Tribes*, which was published in the transactions of the American Antiquarian Society, and afterwards as a separate book.

These three works, Morton's, Gallatin's and Squire's, were the results of very careful study in the three different departments, craniology, philology and archæology, and laid the foundations for the great and growing science of anthropology in America. They are works which are still referred to as standards and have not been supplanted by anything that has been published by either the government surveys or bureaus, or by private publishing houses. They were published under the auspices of the societies which are still in existence, and may be regarded as corner-stones to those societies.

The explorers and students gave great prominence to the societies, though the endorsement by the societies gave and secured "corresponding honors." There was then no such thing as authority exercised over the opinions of men. While there were theories which corresponded with the sentiments of the day, yet each student was at liberty to advocate such a theory as seemed to him the most in accordance with the facts. Morton advanced the indigenous theory and claimed that there was a single American race. Mr. E. G. Squire advanced the theory that the Mound-builders were different from the Indians. Albert Gallatin advocated no theory, but gave a division and classification of the Indian languages, especially those of Eastern tribes, which is still held by the best linguists. He did not discover the relation between the Cherokees, the Dakotas or Sioux and the Iroquois, but classed them as different stocks. In this

he is followed by most of the linguists, though Dr. Horatio Hale and others maintain that they were different branches of one stock or family languages, and some of the students of the ancient monuments have reached the same conclusion independently of language.

The migrations of the tribes from either the North, South, East or West, was not broached by Mr. Gallatin. That subject was broached by Dr. Meggs, who had access to the skulls which were gathered by Dr. S. G. Morton, but who reached an opposite conclusion. His position was that the aboriginal tribes could be traced to three or four stocks—a position which Sir Daniel Wilson and Sir William Dawson have endorsed and firmly advocated, though Humboldt had previously favored the Asiatic origin of the Central American art and architecture, and Humboldt's opinions are still highly respected, endorsed and advocated.

Fifty years ago, during the early days of archæological discovery, various writers on the aborigines were visiting the western tribes in their abodes and getting material from first sources. The works of Catlin, the painter, and Charles H. Schoolcraft, are well known. Their pictures, which they drew with pen and pencil, are still admired for their faithfulness and variety. Catlin began his explorations before the Black Hawk war in 1832. Schoolcraft began his about the same time and continued writing. He made his report on the Iroquois Indians in New York in 1846, 1847 and 1848. His work culminated in the Archives of Aboriginal Knowledge, published by the government.

The gathering of all this material and placing it and much more like it in a library was the work of Dr. Draper. His work was confined mainly to a single state, but we would call attention to the memoir which has recently been prepared by Mr. Reuben Thwaites and published by the Historical Society of Wisconsin, as an evidence of the honor which will be bestowed upon any one who labors for the benefit of future generations. Both of these gentlemen have given to the world the results of a great deal of private service, which they were enabled to continue through the public patronage. The opportunity of so doing has not ceased, for there are librarians, surveyors and explorers, government officers and members of societies, both at the East and at the West, engaged in the same or similar work as that to which these two men gave their lives. Our belief is that very much of the work in the future is to be done by such means, notwithstanding the repeated attempts to ascribe exclusive authority to those who are employed in the public service, and our hope is that all of those who are now engaged in the work of collecting and exploring in a private capacity will continue until a tribute of respect and honor shall also be bestowed upon them as upon the two whose portraits adorn our papers.



DR. LYMAN C. DRAPER.

ARCHAEOLOGICAL NOTES.

THE GARDEN OF THE GARDEN OF EDEN.—Avald Ross, of the Victoria Institute, has published in the last volume of the Transactions. The effort of the speaker was to relate the theory that it was a Sumerian Babylonia. The site of the Garden of Eden has been located variously from Scandinavia to the South Sea Islands; from China to the Canary Islands. Dr. E. Deutchman maintained that it was in Babylonia. Mr. E. G. Lommel, of the British Museum, is in favor of America. Others are in favor of the plateau of Pamir. One of the greatest difficulties, so connected with the four rivers. Deutchman makes two of them to be canals, the other two to be the Tigris and Euphrates. Briggs identified Gihon with the River Araxes. Kassen identified the Pison with the Great Zab east of the Tigris and Gihon with the river west of the Euphrates. The Havnah, where the river is lost, Kassen thinks was in the mountain regions of the Upper Zab. Eden, says the Greeks, was a kind of gum, a secretion from the trees of the Upper Zab. The four rivers were branches of the two rivers, the Euphrates and the Tigris. In the discussion of the paper, Mr. Pinches agreed with Mr. Kassen that Ur of the Chaldees had been located too far south, but Mr. Kassen maintained that Magter was the city of the worship of the goddess. Mr. Gorden also maintained that placing the Eden in Babylonia was impossible. Eden, which means garden, might have been located in Babylonia from national pride, but that the Babylonians, as well as the Hebrews, had the same legend of the Garden of Eden. The tablet found by Dr. Hayes Wood in Mesopotamia contains the word Sipar. Sir L. W. Brown thinks that the Babylonian plain was in the antelevanian or post-levanian epoch, was more elaborate and well wooded, and that this fact must have been known by the writer of Genesis from tradition. Dr. A. H. Sayce maintained that the plain of Babylonia is in the cuneiform inscription, E-din, and in the akkadian, E-din Garden. In this garden was the famous two cedars, which has been celebrated in a Babylonian poem. The discussion leaves the subject just where it was, for the authorities seem to be divided between the mountain and the plain.

CHINESE CHRONOLOGY.—Rev. James Legge maintains that 842 B.C. is the earliest record of Chinese chronology, about which there is no difference of opinion.

THE CHINESE ASSAULTS.—The story goes that in A. D. 79, that some parties dug up the grave of H. Shang, a king, who died B.C. 279, and found a great number of bamboo tablets, containing 100,000 characters. These tablets were too rotten to get, and, but they help chronology. Ten kings before H. Shang, the Chinese added to 827 B.C., give B.C. 1122. The era of Chao, which was 475 B.C., was 346 years before Confucius. The Chinese have a cycle of sixty, with two series, consisting of ten earthly stems and twelve heavenly branches. The Hindus had a cycle of sixty years. This possibly may have come from the Hindus to the Babylonians. Prof. Legge holds that there was history in China as early as 2200 B.C., that Confucius had access to it. There are no old manuscripts in China, but there are stone

tablets which date as early as 900 B. C. Paper was not made until after the Christian era; before that articles were printed on bamboo or strips of wood.

KNOTTED CORDS was a way of keeping records in China about 4000 B. C., according to Chinese accounts, but there are no knotted cords at present in China. These quippus were found by the Spanish invaders in use by the Mexicans for keeping chronological records.

CASTS FROM CENTRAL AMERICA.—Professor Putnam, chief of the department of ethnology, has received eleven cases of casts made by Professor Desire Charney of the Lorrillard expedition. These casts are of large tablets from Palenque, Itza, Uxmal, and other ancient ruins in Central America and Mexico.

CHILDREN'S PLAYTHINGS.—On the pampas of South America boys arm themselves with the lasso; on the Amazon they have their little gravateno; in Australia they have toy boomerangs, as in Europe they have their toy guns, swords and cannon, showing what weapons were used by their fathers.

FLINT IMPLEMENTS.—A Danish archæologist, G. V. Smith, has been experimenting with the use of the complex flint implements. He fitted handles to the flints and worked them upon pine, with complete success. He was convinced that the same flint hatchet would work equally well in harder woods. With these primitive tools it would be possible to bring down large trees and execute all kinds of simple carpenter work.

THE BOOMERANG.—Professor Emerson has been trying the boomerang before a company of scientists in Columbia College, New York. His experiments were made with a boomerang of his own make, shot from a sort of cross bow. This is hardly a fair experiment, for it does not represent the primitive skill of the Australian, who throws the crooked stick from the hand only.

MAORI MIGRATIONS.—The journal of the Polynesian Society for December, 1892, has an interesting article, on the migrations of the Maoris to New Zealand, by Judge W. E. Goodyear. Thirty generations ago these migrations began to take place in canoes, and yet the traces of these migrations are still retained.

ANCIENT NAVIGATION OF THE PACIFIC.—That the South Americans were capable of making voyages in the open ocean is proved by the fact that towards the end of the fifteen century an Inca of Peru, the grandfather of Atratrualpa, collected a large fleet of "balsas" on the coast below Quito, and put to sea and discovered the Galapagos Islands, which he called Nina Chumpi.

THE POLYNESIAN BOW.—That the inhabitants of Polynesia were acquainted with the bow and arrow is shown by the fact that it is still used as a toy. It is not now used as an implement of war, but mainly as a weapon for shooting birds.

THE INSCRIPTION ON THE EASTER ISLANDS.—The fourth number of the *Journal of the Polynesian Society* has a second article on the "Inscriptions of the Easter Islands," by A. Carroll, M. D. The writer claims that the key to these inscriptions is found in the languages of South America, but does not say what languages. The article is interesting, and contains many hints

as to the succession of races, especially as to the Turanians having preceded the Aryans, but it lacks the discriminating and judicial factor.

STATUE OF MARQUETTE. The Wisconsin Legislature will probably pass a bill for the erection of a statue of Marquette, the early explorer, in Statuary Hall at Washington, D. C.

EGYPT AT THE WORLD'S FAIR. Rev. William C. Winslow, D. D., secretary of the Exploration Fund, expects to place on exhibition at the World's Fair sketches and photographs of the tableaux and pictures found on the walls of the tomb of Beni Hassam, which is one of the oldest tombs in Egypt. These paintings represent the craftsmen and artisans of Egypt, the visiting strangers, with their racial features; the birds, flowers and fruits of the Nile valley as they appeared 2200 B. C.; also the games, pastimes and the various scenes of real life. These will be very valuable and instructive pictures, and when seen and contrasted with the other tokens of the historic and prehistoric races in America will prove very attractive.

THE WORK OF THE SURVEY the coming season is to be in the vicinity of Tell el Amarna, the great capital of the ancient kingdom, where the celebrated tablets were exhumed. The result of each year's work will be published in annual volumes, to be edited by Mr. F. L. Griffith, F. S. A., of the British Museum. These volumes will contain maps, plans and accurate copies of the wall paintings and hieroglyphic texts, and the letter press will give full descriptions.

PALEOLITHIC MAN AND EXTINCT ANIMALS. A writer in *The Christian Echo* seems to be very obtuse on the subject of paleolithic man. He quotes this sentence from the book on "The Mound-Builders," "If more of the extinct animals had been found associated with his remains or fragments of the food upon which he had subsisted had been discovered, we should know something of his condition," and asks how would the discovery of more extinct animals help us to know aught of man's condition? Now every intelligent anthropologist knows that the discovery of the bones of extinct animals in the gravel-beds of Europe with the rude relics called paleolithes led to the theory of the great age of man, and gave a picture of his condition. The absence of the bones of such animals from the gravel-beds at Trenton and elsewhere in this country is the factor which at present throws uncertainty over the paleolithic age in America. Paleolithic man is supposed to have preceded the Mound-builders, and a chapter on the "finds" is appropriate as an introduction to the work, notwithstanding the criticism of this obtuse but pretentious writer. We insert this paragraph for the especial benefit of Prof. F. Starr, assistant professor of anthropology in the University of Chicago.

THE AMERICAN ASSOCIATION. Rev. J. O. Dorsey, the vice president, and W. K. Moorehead, secretary for the section on anthropology, are making special efforts to have a full attendance of the section at the meeting, which is to take place at Madison, Wis., in August. It is expected that a large number of anthropologists from foreign countries will be present, and that the discussions will be unusually interesting. It is probable that the subject of paleolithic man will be thoroughly discussed.

BOOK REVIEWS.

The Interpretation of Nature. By Nathaniel Southgate Shaler, Professor of Geology in Harvard University. Boston and New York: Houghton, Mifflin & Co.; Riverside Press. 1893. 305 pp.

The originality of this new book by Professor Shaler is its greatest charm. The author takes some of the plainest and commonest facts of science and from them strikes out on a line of thought altogether novel. The uniformity of nature is thus shown to be a fallacy, for at certain points water freezes and at others turns to gas, showing that sudden leaps are as common as continuous action. The thought is illustrated by the revolution from the circle to the ellipse and so to the parabola, until at last the body flies off in a tangent. Even in the matter of life there is growth and progress, but life as we know it is limited to certain degrees of heat, and cannot therefore exist in worlds where these degrees are exceeded or are not reached. The chapter on Naturalism vs. the Supernatural is perhaps the only one on which there will be any great amount of dissent. This, however, is written in a fair and impassioned way and will interest those who differ from the author's position. One thing is evident: If the crystal is capable of putting on new forms, and so proving that the rocks actually grow, why may not the soul also put on new forms. These are the results of laws, by which the supernatural affects the natural. The author justly says, Man has had the world opened to him by the gateway of his sympathies, and by that gateway he should always be led on his way, and yet the study of physical science is the specialty of this most charming of scientific writers.

The Land of the Cliff-Dwellers. By Frederick H. Chapin. Boston: Appalachian Club. W. B. Clarke & Co. 1892.

Mr. Chapin has written a very charming book, and the Appalachians have put it into a very beautiful and attractive shape, though the white binding and silver letters are quite likely to soil in the hands of an ordinary reader. The engravings are half-tone prints from the photographs which were taken by the author during his mountain-climbing trip. The readers of THE ANTIQUARIAN will remember the author from the article which appeared in its pages, and which was written as a sort of forerunner of the work. There are so few books on the subject of the cliff-dwellers that our readers will undoubtedly be glad to get this one, and we are quite confident that they will be pleased with it.

The Past in the Present. What is Civilization? By Arthur Mitchell, M. D., LL.D., Edinburgh: David Douglas. 1880.

This book is already too well known to need a review. It is a standard work in Great Britain and is highly appreciated in America. The thought of the author is that the customs which prevailed in prehistoric times have survived into late historic times, and that many of the implements and contrivances still in use in Scotland and Great Britain are as simple and rude as they were in the earliest period. The bee-hive houses and the caves are still occupied, and there are cairns which are decidedly modern. The author refers to one point which is interesting to the archæologist—some of

the cairns in the bronze age were structureless, but in the stone age were chambered cairns. The men of the bronze age were inferior in constructive capacity to the men of the stone age in the north of Scotland. Mr. David Dun, las, the publisher of this book, has a series of works on archaeology which we will take pleasure in reviewing at another time.

The Great Statesman, Lewis Cass. By Andrew C. McLaughlin, Assistant Professor of History in the University of Michigan. Boston and New York: Houghton, Mifflin & Co.; The Riverside Press, Cambridge.

The life of Lewis Cass covered a period of great importance in the history of the west. It extended from the time of the Black Hawk war up to the war of the Rebellion, which was really the foundation period for most of the western states. Five states north of the Ohio river form an historical unit. Lewis Cass began the study of law in Marietta in 1796, was a member of the legislature of Ohio in 1806. He was a colonel in the army in 1812 and was under Gov. Hull at the time of the surrender at Detroit. He was a post-*facto* governor of Michigan in 1813. The work of Gov. Cass, according to the author, was to bring Michigan out from its Gallic sloth and the old French *regime* into modern activity and Anglo-Saxon ways. Still the young governor continued to follow the routes of the *Canot du Rivier*, and used to have to visit the Indians in their villages on the head waters of the Wisconsin and Mississippi. He was a contemporary of Henry R. Schoolcraft and did much to encourage that author in his work. The strong part of the career of Gen. Cass as Secretary of War under Gen. Jackson in 1823, as minister to France in 1837, as a member of Congress in 1842, and Secretary of State under President Buchanan in 1857, belongs to the realm of politics and will be praised or blamed according to the political preferences of the reader. The author, who is a hero-worshiper, can see nothing to criticize. The first part of the book is the most interesting, for it gives to us a series of pictures of western life, which, though familiar to some, are rather new to the ordinary reader.

The Dakota Indian Dictionary. By Stephen Return Riggs. Edited by Francis O. Dorsey. Department of the Interior. United States Geological Survey, I. W. Fowler in charge, Washington, D. C., 1892.

This dictionary has been in preparation for many years and has involved the services of quite a number of men, most distinguished ethnologists, with Dr. S. R. Riggs and his two sons, the Rev. Mr. Williamson, the missionary, and Francis O. Dorsey, the linguist. It is a monument to the industry of these men, as well as to the native race whose language it perpetuates. We have no criticisms to pronounce on this book as such, for it is a very admirable work; and yet we cannot avoid saying that we have been greatly disappointed by the language. We had expected that this powerful and intelligent people, called the Dakotas, would have in their language many words which would lead to the knowledge of the picturesque thoughts, superstitions, and religious conceptions which are supposed to have prevailed among the Indians of North America, but instead we find an endless repetition of words which refer to the most ordinary and common place actions. There are a few proper nouns and a few words which refer to certain customs and ceremonies which are carefully described by the compilers, but the dictionary is so very barren of all spiritual conceptions and abstract notions, and makes so little claim that any high grade of thought was reached by the

people. It may be that when the work on the grammar and the ethnography of the Dakotas, which still remains unpublished, shall appear, we will learn more of the wonderful construction which has been claimed for this language, but for the present we shall be obliged to think of the language as wholly concrete, and in fact quite common-place. There are various books and papers on the folklore, tradition and history of the Dakotas which have been prepared by the same writers. We obtain a view of the mythology of the Indians and of their singular philosophy from these sources, which is in great contrast with that given by the dictionary, though for the purpose for which it is intended, it is as correct and accurate as could possibly be expected, and reflects great credit on the diligence and care of the compilers.

The Critical Period of American History—1783-1789. By John Fiske. Tenth Edition. Boston and New York: Houghton, Mifflin & Co.; The Riverside Press. 1892.

This is the first of the series of books which Mr. John Fiske has written upon American history, and is one of the best. It treats of that period which elapsed between the Revolutionary war and the Federal Convention of 1787, the period when the national sovereignty grew out of the federal states. It was a time of universal depression and disorder, a time of great diversity of opinion, with a drifting toward anarchy. The wisdom of the founders of the nation was taxed to its utmost, but by care and long deliberation the Federal Convention adopted a constitution which has stood the test of the century that has passed. The author has plainly shown the dangers which threatened the country, and has at the same time described the statesmanship which brought order out of confusion. The fact that the book has reached its tenth edition shows that it is a valuable one and highly appreciated by the American public.

Indiana—Department Geology and Natural Resources. Seventeenth Annual Report. S. S. Gorby, State Geologist. Indianapolis, 1892.

This volume contains a very interesting and valuable essay by Prof. Maurice Thompson on building stone, in which the readers will find some very excellent practical hints as to the value of the different kinds of sandstone and limestone for building purposes. He speaks of the volitic limestone which belongs to the St. Louis group as the best building stone, and describes it as composed of minute shells which were deposited in the deep sea.

He also speaks of the boulders which are so numerous in Indiana as furnishing excellent material for monuments and as much more desirable for cemeteries than the ghastly white marble.

The report also contains papers on the quarries, on the mines, the petroleum, the gas area and local geology on Steuben and Wabash counties. Also a catalogue of the butterflies, the frogs, batrachians and reptiles of Indiana. It is one of the best reports given by this active state survey, and reflects credit on the geologists in charge and the state that sustains it.

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BOOKS RECEIVED.

Transactions of the Academy of Sciences of St. Louis. Vol. VI, Nos. 3, 4 and 5.

Smithsonian Report, Vol. VII. Annual Report of the Ethnological Bureau.

Pagan and Christian Rome. By Rudolfo Lancioni. Illustrated. Boston and New York: Houghton, Mifflin & Co.

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MAN AND LANGUAGE;
OR, THE TRUE BASIS OF ANTHROPOLOGY.

BY HORATIO HALE, M. A., F. R. S. C.

III.—AUSTRALIANS, DRAVIDIANS, AND ARYANS.

We now turn to another part of the globe, and to a very different race and language, both of which will afford some highly instructive lessons. By the common consent of those ethnologists who do not base their science upon linguistic tests, the Australians are ranked among the lowest, if not as the very lowest, of the races of men. In that pre-scientific anthropology which prevailed half a century ago, when the various human races, as well as the various species of animals, were supposed to have somehow come into being in the regions which they inhabited, the Australians, dwelling in a continental island of a past geological era and amid animals of the most primitive mammalian forms, were held to belong to a distinct human species, as primitive and as imperfect as its surroundings. The Darwinian system swept away this fanciful notion; but, ill understood by some of its votaries, it has given rise to another fancy hardly less opposed to the principles of true science. The Australians have been accepted by some distinguished members of this school (though not by Darwin himself) as the best surviving representatives of the earliest men of the present human species. Their reasoning may be stated succinctly in a syllogistic form, as follows: The earliest men of the existing species must be supposed to have been the lowest of men in intellectual capacity and in social condition. The Australian aborigines are now the lowest of men in intellect and in social condition. They must therefore be deemed to represent more

nearly than any other race the character and social condition of the earliest men.

Both premises assumed in this reasoning are mere assumptions, which are not only not based upon facts, but are opposed to the clearest indications derived from the actual data we possess. There is no better reason for supposing the earliest men of the present species to have been low in intellectual capacity than there is to suppose them to have been small in stature and physically weak. The men who combated and overcame the monsters of the quaternary era, the mammoth, the cave-bear and the cave-lion, and whose earliest historical offspring reared the vast architectural piles of Egypt and Assyria, must have been as vigorous in mind as in body. As for their supposed modern representatives, the Australians, it is astonishing that highly educated men, professors of philosophy, who undertake to treat of the intellect of a race, should refuse to consider the prime and incomparable exponent of intellect, the language. Whether we accept the view of Max Müller and the high authorities whom he cites on his side—that speech and reason are identical (or, rather, like heat and motion, are different manifestations of the same force)*—or whether we retain the more common opinion that speech is the expression of thought—either case the language of a people ought to be the first evidence to which we should resort in judging of its intellectual endowment. We may now briefly consider this invaluable evidence, and some very curious and unexpected conclusions to which it leads.

The earliest attempt to explain the complex system of Australian speech was made by a zealous and experienced missionary, the Rev. L. E. Threlkeld, of New South Wales. His work, a pamphlet of some 130 pages, entitled "An Australian Grammar, comprehending the principles and natural rules of the language, as spoken by the aborigines in the vicinity of Hunter's River and Lake Macquarie, in New South Wales," was published at Sidney in 1834. The author had been previously a missionary in the Society Islands, and had acquired knowledge of the language there spoken; but while the Tahitian alphabet was found nearly sufficient in his new field, the simple Polynesian grammar afforded him no aid in unraveling the difficult web of the Australian speech. A few years after his grammar was published I had the pleasure of visiting him at his mission, and witnessing his assiduous efforts for the benefit of his humble charges. His manuscripts, which he freely communicated to me, showed his constant progress in his studies of the language, of which he had found it as hard to fathom all the depths as his successors have found it to discover all the mysteries of the social organization of this singular people.

*"The Science of Thought," Chap. I.

The pronunciation of the language is simple and euphonious. The consonants *s*, *f* and *z* are lacking. The only sound strange to English utterance is the *ñ* (*ng* as in *singer*) when it is an initial, as *ñato'a*, I; *ñinto'a*, thou. The vowels are sounded as in Italian or German, except the *u*, which represents the English *u* in *but*.

There are seven declensions, two of which are restricted to proper names, the one of persons, the other of places. The remaining five declensions comprise the common nouns, and are distinguished by the terminations of the nominative. Each declension has ten or eleven cases, comprising two nominatives, a genitive, two datives, an accusative, and four or five ablatives. It would be easy to furnish a special name for each case, but for our purpose it is needless. The fact which chiefly calls for remark is that the language discriminates in its cases with more logical nicety than any of the Aryan tongues. In the nominative, for example, there is a neuter or ground form used in answer to the question, who (or what) is it? and an active form which governs the verb, and answers the question, who (or what) did it? There is a dative expressing "for" the object, and another expressing "to" the object; and the various ablatives express "on account of," "from," "along with," "staying with," etc. The character of these declensions can be most clearly shown by giving examples of the first and second. In the first, *Biraban*, which means "Eagle-hawk," is declined as a proper name, and in the second as a common noun:

FIRST DECLENSION.		SECOND DECLENSION.	
Simp. nom.	<i>Biraban</i>	<i>biraban</i> ,	a hawk
Active nom.	<i>Birabanta</i> ,	<i>birabanta</i> ,	a hawk does, etc.
Gen. case.	<i>Birabanta'a</i> ,	<i>birabanta'a</i> ,	a hawk's
1st dat.	<i>Birabanta'ni</i> ,	<i>birabanta'ni</i> ,	for a hawk
2d dat.	<i>Birabanta'ni'a</i> ,	<i>birabanta'ni'a</i> ,	to a hawk
Accusative.	<i>Birabanta'</i> ,	<i>birabanta'</i> ,	a hawk
1st abl.	<i>Birabanta'ni'a'</i> ,	<i>birabanta'ni'a'</i> ,	on account of a hawk
2d abl.	<i>Birabanta'ni'a'ni'a'</i> ,	<i>birabanta'ni'a'ni'a'</i> ,	away from a hawk
3d abl.	<i>Birabanta'ni'a'ni'a'</i> ,	<i>birabanta'ni'a'ni'a'</i> ,	along with a hawk
4th abl.	<i>Birabanta'ni'a'ni'a'</i> ,	<i>birabanta'ni'a'ni'a'</i> ,	staying with a hawk

It will be evident at a glance that these declensions are formed by affixing to the nouns certain particles of the class which we call prepositions, but which would here be more accurately styled postpositions. In this manner, as is well known, scholars suppose that the Aryan cases were originally formed. There seems no particular reason for holding that the closer union of the Aryan affixes to their nouns is evidence of a higher degree of intellect or culture in those who utter them; but if any person of Aryan descent chooses to gratify his pride of race by maintaining such an opinion, it would be idle to seek to disabuse him. The main point to be considered is the clearness of expression which these varied affixes must give to a sentence in linking the nouns and the pronouns (which last are also fully declined) to the other parts of speech.

The verbs have not the variety of "classes" which are found

in the Tinneh and many other American languages; nor have they inflections for person and number, which are always expressed by separate pronouns. In this respect, as in some others, the language is highly "analytic." But the forms of tenses and moods are very numerous. The root or ground form of the verb is usually a verb of one or two syllables, and to this ground-form various particles are appended, which modify the signification, and sometimes protract the word to a considerable length. The following are only a few specimens, derived from the conjugation of the verbal root *bu* or *bun*, to strike. (The nominative pronoun *ban*, I, is understood.)

MOODS OR FORMS.

Active transitive form,	<i>buntan</i> ,	I strike.
Definite, or participial,	<i>bunkilin</i> ,	I am striking. [beating, etc].
Continuative,	<i>bunkililin</i> ,	I am continually striking (as threshing,
Reflective,	<i>bunkileun</i> ,	I struck myself.
Reciprocal,	<i>bunkilan</i> ,	we strike one another.
Optative,	<i>buvil</i> ,	I would strike, or, that I might strike.
Deprecatory,	<i>buntea kun kon</i> ,	lest I should strike.
Imperative,	<i>bawa</i> ,	strike.
Infinitive,	<i>bunkiliko</i> ,	in order to strike.

TENSES.

Present,	<i>buntan</i> ,	I strike.
Remote past,	<i>buntala</i> ,	I struck formerly.
Recent past,	<i>bunkula</i> ,	I struck lately.
Recent pluperfect,	<i>bunkula-ta</i> ,	I had lately struck.
Hodiernal past,	<i>bunkeun</i> ,	I struck this morning, or to-day.
Future aorist	<i>bunun</i> ,	I shall strike.
Crastinal future,	<i>bunkin</i> ,	I shall strike to-morrow.
Inceptive future,	<i>bunkit-kolan</i> ,	I am going to strike.

There are several forms of the simple substantive verb, the most usual being *ka*, a root which signifies "being or existence, in time, place, or state." It is used apparently in all respects like the Latin *esse* or the English *be*, and is conjugated throughout all the forms and tenses. The participle is *kan*, being, as "I being afraid," *kinta kan ban*, lit., afraid being I. The preterite is *kakula*; as *buka ban kakula*, I was angry (angry I was). Imperative, *kauwa*, be; as, *korun kauwa*, be still (quiet be). It is also used as an auxiliary with other verbs.

Verbs have, as in Latin, four conjugations—using this term, as in that language, to signify different modes of inflecting verbs. As in Latin, also, they are distinguished by the termination of the infinitive. Verbs of the

1st conjugation end in *uliko*, *oliko* and *eliko*.

2d " " *kiliko*.

3d " " *biliko*.

4th " " *riliko* and *tiliko*.

These conjugations differ in the formation of the tenses as follows:

	PRESENT.	REMOTE PAST.	RECENT PAST.	FUTURE.	PARTICIPLE.	INFINITIVE.
1.	<i>an</i>	<i>ala</i>	<i>a</i>	<i>unun</i>	<i>ulin</i>	<i>uliko</i>
	<i>an</i>	<i>ala</i>	<i>a</i>	<i>unun</i>	<i>olin</i>	<i>oliko</i>
	<i>an</i>	<i>ala</i>	<i>a</i>	<i>unun</i>	<i>elin</i>	<i>eliko</i>
2.	<i>tan</i>	<i>tala</i>	<i>kula</i>	<i>nun</i>	<i>kilin</i>	<i>kiliko</i>
3.	<i>bin</i>	<i>btala</i>	<i>bta</i>	<i>btunun</i>	<i>bilin</i>	<i>biliko</i>
4.	<i>rin</i>	<i>rala</i>	<i>rea</i>	<i>rinun</i>	<i>rilin</i>	<i>riliko</i>

There are many verbs which are combined with other verbs

and with adjectives to vary their meaning. Thus, *munbili*, to permit, added to the root *bu*, to strike, forms *bununbili*, to permit to strike. *Mali*, to make or do, gives a causal signification, as *kola*, secret, *kolamali*, to conceal; *tür*, broken, *türmali*, to break. *Kuli* signifies spontaneous action, as *türkuli*, to break of itself. *Buli*, signifying "to be in any act," forms active verbs, as *teti*, dead, *tetibuli*, to be dying. *Mainuli*, or *mama*, gives to the preceding verb the meaning of failure or incomplete operation, as *ni*, to see, *namainuli*, to look without observing, *nuru*, to hear, *nurumainuli*, to hear but not to attend. *Bu*, to strike, *bamama lon bu*, I nearly struck him, or did not quite strike him; lit., "to strike failed him I."

But perhaps the most notable excellence of this language is found in its verbal nouns, or nouns derived from verbs, by the aid of various inflections or affixes, which enable the speaker at once to give an intelligible name to any object, act or quality. The modern English and the modern Romanic tongues - mere "jargons" which arose out of the conquests and convulsions of the Dark Ages, - have lost in a large measure that happy Aryan facility of word-formation which was possessed by the Greek and Sanscrit, and to a less degree by the Latin, and which is still retained by the German. This useful facility is enjoyed in the highest degree by the languages of eastern Australia. The following table of derivatives does not appear in Mr. Threlkeld's grammar, but was prepared by him at a later date, and was copied by me from his manuscript. It shows in a striking light the advantages which the language derives from this source, both for discriminating nice shades of meaning, and for devising names descriptive of new objects. It also displays, both in the language and in the people, a remarkable aptitude for expressing abstract ideas.

Mr. Threlkeld's notes explained that a musket (as well as a cudgel) is called *bunkilikane*, because it strikes with the ball; and the same word is applied to a hammer or mallet. A magistrate is called *wunkiyi* when he resigns or commits an accused person to a jailer; and hence a watch-house or jail is called either *wunkilikane*, a means of committing, or *wunkilincil*, a committing-place. *Upali* signifies, properly, to do anything with an instrument; hence *upaiye* might be applied to a painter or cobler, as well as to a writer, and *upalikane* would then mean a brush or awl. To the foregoing list might have been added a column of very expressive derivatives ending in *toara*, and having a passive signification, as *buntoara*, that which is struck, as a drum or a bell, and *umalitoara*, that which is made or done, as any piece of work.

It is now ascertained that all the tribes of Australia speak "dialect languages" belonging to one stock. This fact I was able to determine for those of the eastern portion by vocabularies collected during my visit. At a later day my distin-

TABLE OF AUSTRALIAN DEVIVATIVES.

1—THE VERB.	2—THE AGENT.	3—THE ACTOR.	4—THE INSTRUMENT.
<i>bunkiti</i> , to smite <i>uwali</i> , to walk <i>mankiti</i> , to take <i>umali</i> , to do <i>wiyali</i> , to speak <i>yalauali</i> , to sit <i>ñurali</i> , to hear <i>ñukiti</i> , to give <i>kuriti</i> , to carry <i>ñolomali</i> , to protect <i>pirikiti</i> , to recline <i>tiwali</i> , to seek <i>wunkiti</i> , to leave <i>upali</i> , to perform	<i>bunkitikan</i> , smiter <i>uwalitikan</i> , walker <i>mankitikan</i> , taker <i>umalitikan</i> , maker <i>wiyalitikan</i> , speaker <i>yalaualitikan</i> , sitter <i>ñuralitikan</i> , hearer <i>ñukitikan</i> , giver <i>kuritikan</i> , carrier <i>ñolomalitikan</i> , protector <i>pirikitikan</i> , recliner <i>tiwalitikan</i> , seeker <i>wunkitikan</i> , leaver <i>upalitikan</i> , performer	<i>bunkiye</i> , boxer <i>uwaliye</i> , wanderer <i>mankiye</i> , thief <i>umaiye</i> , artisan <i>wiyaiye</i> , commander <i>yalauiye</i> , idler <i>ñuraiye</i> , listener <i>ñukiye</i> , almoter <i>kuriye</i> , porter <i>ñolomaiye</i> , savior <i>pirikiye</i> , sluggard <i>tiwaiye</i> , searcher <i>wunkiye</i> , magistrate <i>upaiye</i> , writer	<i>bunkitikane</i> , cudgel <i>uwalitikane</i> , coach <i>mankitikane</i> , trap <i>umalitikane</i> , tool <i>wiyalitikane</i> , book <i>yalaualitikane</i> , seat <i>ñuralitikane</i> , ear-trumpet <i>ñukitikane</i> , shop <i>kuritikane</i> , yoke <i>ñolomalitikane</i> , safeguard <i>pirikitikane</i> , couch <i>tiwalitikane</i> , drag <i>wunkitikane</i> , watch-house <i>upalitikane</i> , pen

5—THE DEED	6—THE ACTION.	7—THE PLACE.
<i>bunkilito</i> , blow <i>uwalito</i> , journey <i>mankilito</i> , grasp <i>umalito</i> , work <i>wiyalito</i> , speech <i>yalaualito</i> , session <i>ñuralito</i> , attention <i>ñukilito</i> , liberality <i>kurilito</i> , carriage <i>ñolomalito</i> , protection <i>pirikilito</i> , rest <i>tiwalito</i> , search <i>wunkilito</i> , resignation <i>upalito</i> , performance	<i>bunkilita</i> , smiling <i>uwalitita</i> , walking <i>mankilita</i> , taking <i>umalitita</i> , working <i>wiyalitita</i> , speaking <i>yalaualitita</i> , sitting <i>ñuralitita</i> , bearing <i>ñukilita</i> , giving <i>kurilita</i> , carrying <i>ñolomalitita</i> , protecting <i>pirikitita</i> , reclining <i>tiwalitita</i> , seeking <i>wunkilita</i> , resigning <i>upalitita</i> , performing	<i>bunkitiñil</i> , pugilistic ring <i>uwaliñil</i> , parade ground <i>mankitiñil</i> , a bank <i>umaliñil</i> , manufactory <i>wiyatiñil</i> , pulpit <i>yalaualiñil</i> , pew <i>ñuraiñil</i> , town (for news) <i>ñukitiñil</i> , market <i>kuritiñil</i> , wharf <i>ñolomaliñil</i> , fortress <i>pirikitiñil</i> , bed-room <i>tiwaliñil</i> , the woods <i>wunkiñil</i> , watch-house <i>upaliñil</i> , a desk

guished friend, Dr. Friedrich Muller, of the Novara expedition, had opportunities of extending his observations and collections over all the coasts, with the same result. A grammatical sketch kindly furnished to me by a well-informed missionary, the Rev. William Watson, of Wellington Valley, two hundred miles west of Mr. Threlkeld's station, showed that the construction of the language remained substantially the same, but the forms were, in general, fewer and less complex. Several cases of nouns had been lost, and the verbal derivatives were less numerous. According to Dr. Muller, this grammatical decay continues to the west coast, where the languages, though retaining the pronouns and other words indicating their original affinity, have become in a large degree formless. This fact will be found significant as we proceed.

It becomes a matter of great interest to determine the true character and the ethnological affinities of the people speaking this remarkable group of languages. The first observation to be made is that there is something enigmatical, at the first view, both in their physical appearance and in their intellectual manifestations. The former, as described in my notes made on the spot, combines the peculiarities which anthropologists have been accustomed to ascribe to totally distinct races.* "They are of middle height, with forms fairly well proportioned. The cast of the face is a medium between the African and Malay types. The forehead is narrow, sometimes retreating, but often high and prominent; the eyes are small, black and deep-set; the nose is much depressed at the upper part between the eyes, and widened at the base, but with this it frequently has an aquiline outline. The cheekbones are prominent. The mouth is large, with thick lips and strong, well-set teeth. The jaws project, but the chin is frequently retracted. The head, which is very large, with a skin of unusual thickness, is placed upon a short and small neck. Their color is a dark chocolate, or reddish black, like that of the Guinea negro, but varying in shade so much that individuals of pure blood are sometimes as light-colored as mulattoes. That which distinguishes them most decidedly from other dark-skinned races is their hair, *which is neither woolly*, like that of the Africans and Melanesians, nor frizzled, like that of the Feejeans, nor coarse, stiff and curling, as with the Malays. *It is long, fine and wavy, like that of Europeans.*"† When

* S. Exploring Expedition, vol. 7, "Ethnography and Philology," p. 107.
 † It is curious to find some words, not merely to draw attention to the important fact that they had been used to correct an unaccountable error of my learned friend Dr. Muller, but also to give a confirmation of Wailly's great work (*Asiatic polytheism*, des. Nat. Mus., Paris, 1855), in my volume, with some abridgement, the foregoing description of the Australian people, generally in a correct manner, but making me say of the hair, "It is long, fine and wavy." Dr. F. Muller, naturally startled by this extraordinary statement, would be sure to take a description of the Eskimos as having black skins, for example, in the *Althor's speech* (2nd edit., p. 26) devoted a long footnote to the correction of my supposed error. He evidently had not at the time seen my volume, which was thus strangely misquoted, and of which in his later manuscript the error of the *Asiatic polytheism* had been made considerable and always corrected.

neglected, it is apt, of course, to become bushy and matted, but when proper care is taken of it it appears as we have described. It is sometimes of a glossy black, but the most common hue is a deep brown. Most of the men have thick beards, and their skins are more hairy than those of whites."

The like perplexing contradictions appeared in their intellectual and moral traits. The same notes state the opinion then formed,—that "it is doubtful what grade of intellectual capacity is to be ascribed to this people." While, on the one hand, "the impression produced on the mind of a stranger by an intercourse with the aborigines in their natural state is that of great mental obtuseness, or, in plain terms, an almost brutal stupidity," it is noted that "several who have been taken from the forest when young, and have received instructions, have shown a readiness in acquiring knowledge and a quickness of apprehension which have surprised their teachers." In particular, their aptitude for learning languages and for music surpassed that of most white children. Their moral qualities had many singularities, but few of a repulsive character. To the whites, whom they regarded with a mixture of distrust and contempt, they seemed sullen, suspicious and inordinately proud. Nothing would induce them to acknowledge any human being of their own age their superior, or show any mark of deference. Among their own people they were trained to exhibit a profound respect for age; and in their warfare, or rather their tribal quarrels, they were never bloodthirsty or implacable. Their contests were not conducted by treacherous surprises and massacres, but always with fair warning. The death of a single combatant usually ended a battle; after which followed a scene of recrimination, abuse and explanation. "All hostility was then at an end, and the two parties mixed amicably together, buried the dead, and joined in a general dance."

Sincis the account was written many able investigators—missionaries and ethnologists—have made careful studies of this singular people, and the results have explained much that then seemed difficult to understand. It has become clear that if they are low in culture, they have yet, in fact, attained the utmost elevation which was possible in their surroundings. The nature of their country, the scantiness of food, and the frequent droughts, which compelled them to scatter over an immense surface and kept them constantly on the move, made all settled habits, and consequently all progress, impossible. The wisest of Aryan or Semitic communities, cast without resources into the interior of an almost barren continent, and compelled to subsist on wandering game, on roots and vermin, would speedily be pressed down by an iron necessity to the same level as that of these Australians. It may be doubted whether there are many communities which would have resorted to the same ingenious devices to mitigate the hardships of their lot, and preserve the amenities

and safeguards of social life. It has been ascertained that nearly the whole of Australia, from shore to shore, was covered by a network of social regulations most happily devised for maintaining order and promoting friendly intercourse. Where all families were equally poor and equally independent, there could be no distinction or control either from rank or from wealth. The framers of their polity, therefore, fell back upon the natural and primal distinctions of age and sex. The elders were in all cases to rule, and the younger implicitly to obey. The intercourse of men and women was to be guarded by the most stringent rules, protecting woman from the violence of youthful passion or brutal strength, and placing her under the guardianship of her whole people, and more especially of a certain class of people who were bound by ties of family or clanship to protect her. The common opinion that wives are captured by violence among the Australians is an exploded error. On the contrary, there are few races among whom the regulations respecting marriage are more strict or their violation more rigorously punished. The system of "marriage-classes" and totemic clans, moreover, extending throughout almost the entire island, is a sort of social freemasonry, or artificial relationship, furnishing to every Australian of any tribe cousins or colleagues in every other tribe, who are bound to receive and protect him. It is the opinion of Mr. A. W. Howitt, who is the highest authority on this subject, that this ingenious and useful system is a work of legislation which has been deliberately devised and perfected for the general welfare by the Australian law-makers, through a series of generations.*

We have now to consider a point of great importance. As it is certain that the Australian stock was derived from some other region, ethnologists have naturally been led to seek for the mother country of this interesting people. The search has been successful, but the surprise to the seekers has been great, and the result to some of them not a little distasteful, as upsetting many cherished theories about "primitive man." The Australians are found to belong to the Dravidian family, which, prior to the Aryan invasion, occupied nearly the whole of Hindostan, and which still holds the southern portion of the peninsula, in some ten or twelve nations or tribes, speaking closely allied languages, Tamil, Telugu, Malayalam, Kanarese, Tula, Kudagu, Toda, etc., and numbering altogether nearly fifty millions of people.† It is, therefore, one of the most important of the great linguistic families of the globe. The character of the speakers of these languages ranks high. On this point there can be no better witness than Sir Monier Williams, the eminent Sanskrit scholar, who, in a recent work, thus describes them:

"Of the Dravidians, the Telugu and Tamil speakers are by

* *Journal of the British Anthropological Institute* for August, 1888, p. 66.
 † *The Modern Languages of the East Indies.* By Robert N. Cust, p. 60.

far the majority, each numbering fifteen or sixteen millions. The Tamil race, who occupy the extreme south from Madras to Cape Comorin, are active, hard-working, industrious and independent. Their difficult and highly accentuated language reflects their character, and possesses quite a distinct literature of its own. The Telugu people, inhabiting the Northern Circars and the Nizam's territory, are also remarkable for their industry; and their soft language, abounding in vowels, is the Italian of the East. The Kanarese of Mysore resemble the Telugu race in language and character, just as the Malayalams of the Malabar Coast resemble the Tamils. I noticed that the sea-faring Tamils of the southern coast are much more able-bodied than the ordinary Hindus. Numbers of them migrate to Ceylon, and at least half a million form a permanent part of the population of that island. They are to be found in all the coffee plantations, and work much harder than the Sinhalese. Indeed, all the races of South India seem to me to show readiness and aptitude for any work they are required to do, as well as patience, endurance and perseverance in the discharge of the most irksome duties." "As servants, they are faithful, honest and devoted, and will attach themselves with far greater affection than English servants to those who treat them well. They show greater respect for animal life than the Europeans. They have more natural courtesy of manner, more filial dutifulness, more veneration for rank, age and learning, and they are certainly more temperate in eating and drinking."*

Some of these qualities, especially independence, filial affection, and respect for age, reappear as well-known characteristics of the Australians, whom the Dravidians also recall in their dark skins and their long and wavy hair.

The immense influence of the Dravidian race in Indian history has been too little regarded. When the Aryans, about fifteen hundred years before the Christian era (as is commonly held), entered northwestern Hindostan and began their conquest of the country, they were a race of barbarous herdsmen, but little higher in culture than the Zulus and Bechuanas of South Africa. The researches of Hehn, Schrader, and other careful German archæologists, leave no question on this point.† They were a wandering race, depending mainly on their cattle and sheep for food and clothing, ignorant of the smelting of metals, living in circular huts of wattle and straw, excessively superstitious, domineering and cruel, and consumed with the land-hunger which possesses all pastoral races. That they were a people of strong intellectual powers is evident from their language. The Sanskrit, with all its defects, which are neither few nor small, could

*"Modern India and Indians." By Monier Williams; 2d edit., pp. 127-8.

†See especially Schrader's "Sprachvergleichung und Urgeschichte," the second edition, admirably translated (with the author's additions), by F. B. Jevons, under the more appropriate title of "Prehistoric Antiquities of the Aryan Peoples."

have been spoken only by a highly gifted race. That they were brave and resolute is also apparent from their history. It is equally evident from this history, as it may be gathered from the Rig-veda, that they encountered hardly less resolute opponents.* Centuries passed in the desperate conflict before the northern invaders had made their way from the Indus to the lower Ganges. During this time vast numbers of the conquered people had been incorporated with the conquering race, either as an inferior caste, or as wives and servants in the families of the ruling classes.† It seems highly probable that the mass of the people of North India, while adopting some form of Aryan speech, remained in great part of Dravidian blood. Such was the opinion of Latham‡. What is of more importance is the evidence from many sources that at the time of the conquest the Dravidians were more enlightened than their conquerors. They were a race of industrious cultivators, mechanics and mariners. The rude Aryan cattle-herders learned from them the habits of settled and civilized life, and the mingled races entered upon a career of splendid achievements in arts and literature which neither of them could have compassed alone.

The Dravidian languages themselves, though certainly inferior in some respects to the Aryan, do not lack their peculiar excellences, as Sir M. Williams has pointed out. A striking piece of evidence may be quoted from another high authority. Prof. Whitney writes of these languages: "The Dravidian tongues have some peculiar phonetic elements, are richly polysyllabic, of general agglutinative structure, *with prefixes only*, and very soft and harmonious in their utterance. They are of a very high type of agglutination, like the Finnish and Hungarian; and the author has been informed by an American who was born in Southern India and grew up to speak its language vernacularly along with his English, a man of high education and unusual gifts as a preacher and writer, that he esteemed the Tamil a finer language to think and speak in than any European tongue known to him."

Thus the Australians, whom some too eager theorists have accepted as the best representatives of primeval man, prove to be the offspring of one of the most highly endowed races of Southern Asia. Their present low condition—in which, how-

* Maxmüller's *Schöpfung*, p. 111.

† Maxmüller's *Schöpfung*, p. 112. In *Quintessence*, "Les Péguises," p. 21.

‡ See Sir M. Williams' *Natural History of the Varieties of Man*, p. 46.

† The *Life and Growth of Language*, p. 244. The expression "with prefixes only" is not strictly accurate. The Dravidian languages, like the Australian, are varied chiefly by suffixed particles or terminational inflections. These, it may be added, are not inconsistent or nearly so, in the two groups of languages. Thus, in the Tamil, *ma-um*, we have from *ma-um*, tree, the dative *ma-um-ai*, and from *ma-um-ai*, *ma-um-ai-ai*, while in the Lake Macquarie and Wiradjuri dialects of the Australian we have from *ma-um*, bark, the dative *ma-um-ai*, and from *ma-um-ai*, *ma-um-ai-ai*. So the plural suffix in Tamil is *-ai*, and in Wiradjuri, *-ai-ai*, to which in each language the case particle is added. In Tamil, *ma-um*, tree, has for its nominative plural *ma-um-ai-ai*, and for its dative *ma-um-ai-ai-ai*, while in Wiradjuri *ma-um*, shell, has in the nominative plural *ma-um-ai-ai*, and in the dative *ma-um-ai-ai-ai*. See also those widely separated languages accord, even in minute grammatical points.

ever, the degradation is more apparent than real--is simply the result of hard surroundings, against which, in their situation, the greatest force of intellect could not successfully contend. Their history has exactly reversed that of the Tinnéh tribes. The latter, a naturally intelligent race, depressed to seeming stupidity in the frozen north, develop speedily in the sunny and fertile south into the quick-witted Hupas and Navajos. The intelligent and versatile Dravidian emigrants, scattered over the sterile plains of Australia, without domestic animals and with no plants fit for cultivation, sink into a mental torpor almost though not quite as deep as that of the northern Tinnéh. In both cases the intellectual faculties, though held in restraint by the harsh environment, remain merely torpid and not seriously weakened, as is shown by the clear evidence of the languages which they speak, and by the remarkable proficiency evinced by some of their children at school, as already noted.*

There is, as has been stated, good reason for supposing that the southern Tinnéh have not occupied their present abodes much more than seven hundred years, and some of them not more than five hundred years. It would be a matter of interest to determine, if possible, how long the Dravidian colonists have occupied Australia. There is always a disposition to imagine that the so-called aborigines who are found inhabiting any territory have possessed it from a very remote period. Less than fifty years ago the Polynesian islanders were supposed by some ethnologists of high rank, including an authority no less distinguished than Broca, to be the remnants of the population of a vast continent, which in some former geological era had sunk beneath the waters of the Pacific, leaving only its mountain tops and loftier plateaux, from Hawan to New Zealand, to be the refuges of the few survivors of its population. It is now admitted on all hands, through the ample proofs furnished by tradition and language, that the islanders are the offspring of comparatively recent emigrations from the Malaysian archipelago, the earliest arrival from that quarter dating not much more than two thousand years back; and several of the islands, notably New Zealand and Easter Island, having been peopled within the last five hundred years.†

*While the principal facts of this essay are undoubted, the *Journal of the Anthropological Institute*, MM. Huxley and Lyell, in their review, have endeavored to bring forward arguments to the effect that the Tinnéh are a very old and strong Aryan race, and that the members of the Dravidian stock are late immigrants, with the advantages of good instruction and a settled life. There are few persons, however, among those who believe in the antiquity of the Tinnéh, who are aware of the fact that the aboriginal settlements of Western Australia are not of New South Wales origin, but are the result of a few emigrants, the capture of West Australians. This is shown by the fact that nearly two-thirds of the population of Western Australia are of New South Wales origin, and have acquired fully civilized habits by native and foreign influence, and have adopted the habits of the white man. These emigrants now live in the party and the gray service of the West Australians, and are now being assimilated with them. They are not only the only white men in the country, but they are the only ones who are not of New South Wales origin, and are the only ones who are not of New South Wales origin.

†See the *Journal of the Anthropological Institute*, MM. Huxley and Lyell, in their review, have endeavored to bring forward arguments to the effect that the Tinnéh are a very old and strong Aryan race, and that the members of the Dravidian stock are late immigrants, with the advantages of good instruction and a settled life. There are few persons, however, among those who believe in the antiquity of the Tinnéh, who are aware of the fact that the aboriginal settlements of Western Australia are not of New South Wales origin, but are the result of a few emigrants, the capture of West Australians. This is shown by the fact that nearly two-thirds of the population of Western Australia are of New South Wales origin, and have acquired fully civilized habits by native and foreign influence, and have adopted the habits of the white man. These emigrants now live in the party and the gray service of the West Australians, and are now being assimilated with them. They are not only the only white men in the country, but they are the only ones who are not of New South Wales origin, and are the only ones who are not of New South Wales origin.

Not much, perhaps, is to be learned from the legends of the wandering Australians. Yet their traditions seem to show that their ancestors entered the island by way of the Gulf of Carpentaria, and spread first southward along the eastern coast, and thence inland, along the rivers and across the arid plains, to the western coast. They found, it would seem, the country thinly occupied by a weak but cunning race of savages, who disappeared before them—doubtless in part exterminated and in part absorbed by the new population.* That these savages were of the negrito race, of whom a remnant survived in Tasmania, there can hardly be a doubt. How the Dravidian voyagers reached the Gulf of Carpentaria may be readily imagined. From the earliest times of which we have any knowledge, the pre-Aryan inhabitants of Hindostan, who were and still are bold navigators, were accustomed to visit the East Indian islands in considerable numbers. They were wont to limit their trading voyages to the nearer and more populous Malaisian islands.† But it may easily be understood that if any event, such as the Aryan invasion of India, had caused an unusually large emigration from that country, some of the more determined emigrants, seeking a new and scantily peopled region for settlement, might have pushed on eastward, through the straits dividing New Guinea from Australia, until they found a sufficiently inviting shelter in the harbors of the Carpentarian gulf.

The evidence of language seems to confirm this view. The similarity between the Dravidian and Australian languages, especially in their pronouns (which in some dialects of the two are almost identical), seems too great to allow us to suppose a longer separation of the two branches than that which has existed between the Asiatic and European Aryans. The fact that the entrance of the emigrants was, as Mr. Howitt sees reason to believe, by way of the northern gulf and down the eastern coast, seems to be shown by the circumstance that the languages of that coast retain most largely the complex Dravidian forms, which gradually lessen and become simpler as we go westward—precisely as the Polynesian grammar becomes simpler as we go farther from Malaisia, or as the grammar of the ancient Aryan languages is simplified as we advance from eastern to western Europe.

* A. W. Howitt, "Migrations of the Kurnai Ancestors," in the "Journal of the British Anthropological Institute," for May, 1884, p. 411; A. L. P. Cameron, in same journal for May, 1885, p. 390.

† See the facts relating to the Telugu or Telinga people, cited by Prof. van Rhyn in his learned article on the "Races and Languages of India," in the "American Encyclopedia," Vol. IX., p. 215. They are good farmers, and many of them were formerly seafaring men, undertaking long voyages. They held at one time large islands in the Eastern Archipelago.

OKLA HANNALI;
OR, THE SIX TOWNS DISTRICT OF THE CHOCTAWS.

BY H. L. HALBERT.

The Choctaws of Mississippi, as is well known, were divided into three districts. In this article, however, the writer will confine himself mainly to some facts pertaining to the topography and history of one of these districts, the Okla Hannali, or six towns district, as it existed at the time of the treaty of Dancing Rabbit Creek (Chukfi ahihla bok), in 1830. The names of these towns, or, rather, townships, were Tala, Chinakbi, Bishkun, Inkillis Tamaha, Nashwaya, and Oka Talaia. (The reader will give the continental sound to the vowels of all the Choctaw words in this article. The English orthography will be followed by the Choctaw orthography and the translation.)

Among the Southern Indians, boundary lines between tribes or divisions of tribes were either water-courses or the dividing ridge or water-shed between water-courses. Either water or a ridge with no water was a territorial boundary easily understood by the aboriginal mind. The territory of the Tala (Palmetto) was nearly all in Newton County, embracing the land lying between Tarlow (Tala) and Bogue Filamma (Bok Filamma Creek prong) Creeks from the water-shed connecting the headwaters of these two creeks down to the confluence of each with Pottachito Creek. Tala Town was a thickly-settled community. Its people all emigrated to a man in the second emigration, in October, 1832, the first Choctaw emigration being in the fall of 1831.

Chinakbi Town (Chinakbi, crooked) was situated on the north side of Sooenlovie Creek (Iasunlabi, leech-killer), extending down this creek to its confluence with Kachahlipa Creek, thence up Kachahlipa to its head, and thence along the crest of the dividing ridge connecting the headwaters of this creek with the headwaters of Sooenlovie. Chinakbi Town lay partly in Jasper and partly in Newton County. The present village of Garlandville stands nearly in the center of the Chinakbi territory.

Bishkun Town was wholly in Jasper County. Its northern boundary was the dividing ridge separating the headwaters of East Tallyhaly Creek (Tali ahieli bok, Standing Rocks Creek) from Sooenlovie, extending east to the headwaters of McVay's Creek (Iti homi ahikia bok, Sourwood Creek), thence down this creek to its confluence with East Tallyhaly, thence down the west bank of East Tallyhaly to where it forms a juncture with Lukflippa (Lukfi ai apa, eat dirt there, *i.e.*, deer-lick), thence up

Lukflippa to its head or the ridge separating it from Tallyhoma (Tali homma bok, Red Rock Creek), thence northerly along this ridge until it connects with the watershed separating the East Tallyhaly from Sooenlovie. Bishkun hill, three miles southeast-erly from Garlandsville, was the council ground of the Bishkun people.

The territory of Inkillis Tamaha, English Town, was of very irregular shape. The extreme western part of their territory embraced the country lying on the south side of Sooenlovie, extending southward to the ridge separating Sooenlovie from the headwaters of East Tallyhaly. This dividing ridge, as will be seen, was the boundary between Bishkun and Inkillis Tamaha. The Inkillis Tamaha continued down Sooenlovie to where it forms a juncture with Kachahlipa. Here it crossed Sooenlovie and embraced all the territory lying between Kachahlipa and Dyas' Creek northerly to the dividing ridge separating the heads of these two creeks from Pottachito. The upper or northern part of this projection of Inkillis Tamaha lay in Newton County. Returning again to the south side of Sooenlovie, the territory still continued down this stream to its juncture with Chunky Creek, thence down Chunky to its confluence with Pachuta, which creek formed the southern boundary of Inkillis Tamaha, thence up the Pachuta to its head, striking the crest of the water-shed separating the Pachuta from the East Tallyhaly waters at a point about four miles northerly of Paulding. Thence the line continued more or less northerly along the water-shed between McVay's Creek and the waters of Twisting Wood and Penantla until it terminated on the water-shed between the head of the East Tallyhaly waters and Sooenlovie—the point of our departure in describing the Inkillis Tamaha boundary. Twisting Wood (Iti Shana) and Penantla (Penaiontala, boat landing,) were the principal streams in the Inkillis Tamaha territory.

The territory of Nashwaya extended, on the east, from the eastern water-shed of Bogue Homa (Bok Homma, Red Creek), westerly to the dividing ridge between Talihoma and West Tallyhaly. In this, as will be seen, was included the eastern side of East Tallyhaly and its tributary, McVay's Creek, which creek separated Nashwaya from Bishkun. The dividing ridge on the east separated Nashwaya from Inkillis Tamaha. The Nashwaya territory also lay on the south side of Lukflippa, which creek, as has been noticed, was a boundary line, separating Nashwaya from Bishkun. The Nashwaya limit on the south was the Old Choctaw boundary line.

Oka Talaia (standing water) extended down on both sides of Okatalaia Creek to its confluence with West Tallyhaly, thence up West Tallyhaly, on both sides, to its head, in the vicinity of Lake Station. The southern boundary of Oka Talaia was the Old Choctaw boundary line. The eastern boundary was the

dividing ridge between West Tallyhaly and Tallyhoma Creeks. The western boundary was the dividing ridge between West Tallyhaly and Leaf River. This ridge formed part of the boundary line separating Oka Talaia from the Okla falaia (long people) or the western district of the Choctaws. Leaf River from its confluence with West Tallyhaly down to where it struck the Old Choctaw boundary line formed the remainder of the boundary, as it were, the southeastern boundary line, separating the Oka Talaia people from the Okla falaia.

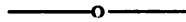
To add completeness to this article, we will make a brief mention of the Yowanni, who, at one period in the last century, it seems, were included among the Six Towns people, and the entire district was sometimes called Seven Towns. Pachuta Creek separated Inkillis Tamaha from the Yowanni territory. Yowanni embraced all the territory lying on both sides of Encuttie Creek; in short, all the territory extending from Pachuta on the north to the Old Choctaw boundary line on the south. The Yowanni western boundary was the eastern dividing ridge of Bogue Homa, which ridge separated Yowanni from Nashwaya. The Yowanni territory certainly extended east of the Chickasahay River, but how far east we have no information. The old town or capital of Yowanni, bearing the same name and so often mentioned by Adair in his *North American Indians*, stood on the east bank of the Chickasahay River, about three miles below Shubuta Station. All the Yowanni Choctaws emigrated in the second emigration, in 1832, except two families, Aüskambi's and Nukchintabi's, whose descendants still live in Mississippi.

A large portion of the Six Towns people, especially those living on the Bogue Homa and West Tallyhaly waters, emigrated in the second emigration. The fork of the Sooenlovie and the Kachahlipa was the rendezvous of the Choctaws for this emigration. About ten thousand went west on this occasion. The third emigration was that of Bosto's, in February, 1846. All the remaining Six Towns Choctaws, with the exception of the Inkillis Tamaha, rendezvoused at Kelly's hill, three miles west of Garlandsville, and migrated west at this time. But few of the Inkillis Tamaha ever emigrated. We are unable to give the reason. Nearly all the Choctaws now living in Jasper County are Inkillis Tomaha Choctaws, and are generally called Six Towns. Many of the Choctaws living on the gulf coast and in the vicinity of New Orleans are seceders from the Six Towns. Likewise several Indian communities in Louisiana are said to be of Six Towns lineage and to have separated from their people long prior to the treaty of Dancing Rabbit.

There are many dialectic words peculiar to the Six Towns Choctaws, which are never heard among Choctaws of other localities. Iasunla, a leech, whence the name of the creek Iasunlabi, leech-killer, is an example. A leech with other Choctaw s

is hallus or yallus. The creek Loosasc bona in North Mississippi is a corruption of the Choctaw yallus iskuna, leech entrails.

The origin of the name Inkillis Tamaha, is involved in some obscurity. The only information we have ever received on the subject is the statement of a Six Towns Indian, that on one occasion, at some period in the past—how far back our informant could not tell—the English distributed some goods and other presents among the Indians living in this particular region or locality. Hence it received the name of Inkillis Tamaha, or English Town. If this tradition is unsatisfactory, we hope some reader of *THE AMERICAN ANTIQUARIAN* who is well versed in the history of the Southern Indians will give us a correct solution of the mystery.



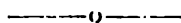
BLACKFOOT STAR MYTHS.—THE PLEIADES.

By M. N. WILSON.*

A number of little Indian boys, who were in the habit of roaming about in a crowd, shooting small birds, gophers, etc., with their bows and arrows, decided one day while engaged at their usual amusement to ask their fathers to give them yellow calf robes to wear, so that they all might be dressed alike. The camp moved soon afterward to the vicinity of a buffalo herd, and when the people were preparing to go after meat, each boy requested his parent to procure for him a yellow calf-skin. While the older Indians were away running buffalo, the boys were happy in anticipation of the nice yellow robes they were going to have, and were congratulating themselves upon the fine appearance their band of playmates would make all dressed alike. Upon a following day they met again, and a general inquiry brought forth the humiliating fact that, although many calves had been killed, not a single boy had been given the much-coveted robe. The parents had preferred giving the yellow robes to their little daughters. The boys were very angry and disappointed, indeed to such an extent that all determined not to return home, but to go somewhere or do something that would punish the stingy parents. According a council was held by the revengeful boys, during which many places were discussed. They finally agreed that they would go far up in the sky and become stars. They said, "We will go up where we can look down upon these stingy people, and because we may not have yellow calf robes we will not even look at them, for at the time of the year when calf-skins are yellow we will

* As related to me in their own tongue by prominent chiefs and other intelligent elderly members of the Blackfoot Tribe.

go away out of sight, but when the calves get older and their hair becomes dark we will return and be visible." The Black-foot (who of course do not know that the constellation Taurus, in which the Pleiades are situated, is occupied by the sun in May and June) say that the boys have kept to their word, as every year during the season that buffalo calves were yellow this prominent cluster of stars is not to be seen, but later in the summer, as the calves grew dark-colored, so do the boy-stars return, and are to be seen wandering about in a group, in the same loving companionship that characterized them upon earth.



PREHISTORIC RUINS IN NEW MEXICO.

By MRS. ELISHA JONES.

There is no field at present attracting more attention or better rewarding the labors of the antiquarian than Southwestern New Mexico. Within a radius of five miles from a certain point in Socorro County, New Mexico, has been discovered several hundred ruins of the habitations of prehistoric man. The walls of these ruins are built of undressed stone laid in cement. Remains of huge cisterns, walls of fortifications, queer implements of bone and stone, beautifully designed and carved, also painted pottery; together with odd and artistic pictures, characters and symbols cut upon rocks in neighboring canons, all excite in the beholder wonder and admiration.

These ruins are found generally on high ground, and are composed of ancient buildings, containing from a few to several hundred rooms, averaging about eight by ten feet, and six feet in height. In some cases the buildings have been two stories high. There has been a side entrance to all of these rooms, but these openings, from some unknown cause, have been walled up. On the surface the walls of some of these ruins are well defined and can be easily traced, while others show only irregular piles of stone, as the crumbling ages have left them. They buried their dead in the ground floors of their rooms, with the heads toward the east, and, as a rule, their pottery, trinkets and personal ornaments with them.

In excavating these ruins one is constantly impressed with one paramount wonder, their great age. Huge pine trees, three or four feet in diameter, and one hundred feet in height, flourish upon the walls and in the rooms of these habitations of forgotten man. The infilling of earth and the increase of soil caused by vegetable growth and decay are naturally very slow. It has been estimated by geologists to average about one foot in eighty

years. Admitting this to be true, our surprise knows no bounds when, on digging down beneath these giant trees, we pass through from six to ten feet of vegetable mold, then encounter from one to three feet of clean mashed sand and gravel, then a solid earthen floor covered with ashes, charcoal, bones and fragments of broken pottery. Yet still below this are skeletons of human beings, surrounded by their war weapons and ornaments of stone, copper and bone. No satisfactory account is given of this beautiful and wonderful ancient pottery. Many of the finest pieces are crushed by the weight of earth above them, yet many beautiful specimens are saved whole and perfect.

We can only conjecture what race of people inhabited this country so many centuries ago. Their religion, language and habits, the cause of their extermination, in fact nearly all concerning them is wrapped in profound mystery. They were sun worshipers and well advanced in the arts of carving, painting and building, and in agriculture. They flourished many centuries in Colorado, Arizona, New Mexico, Central and South America. They were exterminated either by famine, flood, disease or volcanic action at least a thousand years ago. In the eastern part of Socorro County are the ruins of an immense city known as Quivira, covering an area two miles square. Its walls, in some places, are eight feet thick, forty feet high, and several hundred feet long. A great aqueduct conveyed water to the city, but to-day there is no running water within forty miles of this ancient wonder. It stands silent and alone in the sunlight and moonlight. Where once the love, industry and skill of an unknown race made thousands of beautiful and happy homes, the cayote, bat and creeping reptile hold sway. This city was in ruins at the time of the conquest. When and by whom it was built was a mystery to the Mexican people more than three hundred years ago.

PRE-COLUMBIAN COPPER MINING IN NORTH
AMERICA.

By R. L. PACKARD, WASHINGTON.

[PART II.]

From the historical references which will be presently considered, it will appear that Keweenaw and Ontonagon were known as a copper district at the time the French arrived in Canada. But as it has been imagined that an extinct race superior in culture to Indians opened the trenches and mined copper there, it may be well to give a comparatively modern instance of a similar search for copper by Indians before taking up the historical argument. This is given in Hearne's Journey from Prince of Wales' Fort in the Hudson's Bay Company's territory to the Coppermine river in 1771. Hearne was an employé of the Hudson's Bay Company and undertook the expedition in the interest of the company. His party was composed of Indians who were not very far removed in point of culture from the savage stone-using ancestors of three or four generations previous, and no better idea could be gained of the character and life of neolithic man as he was in that part of the world, of his methods of obtaining subsistence, his general degree of development, and, incidentally, his stealth and ferocity in attack on other neolithic men, than is contained in this book. After a journey of several months through barren wastes, during which he endured the greatest hardships and was in danger of starvation, Hearne reached the Coppermine River, and, after his savages had surprised and murdered some unsuspecting Esquimaux, he visited the copper "mine," which he thus describes: "This mine, if it deserve that appellation, is no more than an entire jumble of rocks and gravel, which has been rent many ways by an earthquake. Through these ruins there runs a small river. The Indians who were the occasion of my undertaking this journey represented this mine to be so rich and valuable that if a factory were built at the river a ship might be ballasted with the ore instead of stone. . . . By their account the hills were entirely composed of that metal, all in handy lumps like a heap of pebbles. But their account differed so much from the truth that I and almost all my companions expended near four hours in search of some of this metal, with such poor success that among us all only one piece of any size could be found. This, however, was remarkably good, and weighed above four pounds. I believe the copper has formerly been in much greater plenty; for in many places,

both on the surface and in the cavities and crevices of the rocks, the stones are much tinged with verdigrise." They afterwards found smaller pieces of the metal. He goes on to remark that the Indians imagined that every bit of copper they found resembled some object in nature, but hardly any two could agree what animal or part of an animal a given piece was like. He also says that by the help of fire and two stones the Indians could beat a piece of copper into any shape they wished. The Indians were really living in a copper age of their own. Hearne says: "Before Churchill river was settled by the Hudson's Bay Company, which was not more than fifty years previous to this journey being undertaken, the Northern Indians had no other metal but copper among them, except a small quantity of iron work, which a party of them who visited York Fort about the year 1713 or 1714 purchased, and a few pieces of old iron found at Churchill river, which had undoubtedly been left there by Captain Monk. This being the case, numbers of them from all quarters used every summer to resort to these hills in search of copper; of which they made hatchets, ice-chisels, bayonets, knives, awls, arrow-heads, etc. The many paths that had been beaten by the Indians on these occasions and which are yet in many places very perfect, especially on the dry ridges and hills, is surprising. The Copper Indians set a great value on their native metal even to this day, and prefer it to iron for almost every use except that of a hatchet, a knife and an awl; for these three necessary implements, copper makes but a very poor substitute." The Esquimaux tents were plundered of their copper by Hearne's Indians. They found arrows "shod with a triangular piece of black stone, like slate, or a piece of copper." "Their (the Esquimaux) hatchets are made of a thick lump of copper, about five or six inches long and from one and a half to two inches square. They are beveled away at one end like a mortise-chisel. This is lashed into the end of a piece of wood about twelve or fourteen inches long, in such a manner as to act like an adze; in general they are applied to the wood like a chisel and driven in with a heavy club instead of a mallet. Neither the weight of the tool nor the sharpness of the metal will admit of their being handled either as adze or axe with any degree of success."

This testimony of a modern eye-witness to the working and use of copper by aborigines is very instructive, and it requires little imagination to see that we have here a reproduction of the conditions that prevailed on Keweenaw Point two and three hundred years before. The summer visits of the miners, the manufacture of the copper into tools and weapons, some to be used in the neighborhood and others to be carried away for barter—for Hearne gives the rate of exchange between copper and iron from tribe to tribe—were doubtless the same in both cases, even the mythical or "medicine" feature of the subject, which was noticed

by early writers in the stories of the Indians of Lake Superior, is not wanting here. The Coppermine story was that a woman (who was a magician) was the discoverer of the mine and used to conduct the Indians there every year. Becoming offended, she refused to accompany the men on one occasion when they left the place, after loading themselves with copper, but declared that she would sit on the mine until it sank with her into the ground. The next year when the men returned (women did not go on these expeditions) she had sunk to the waist and the quantity of copper had much decreased. On the next visit she had disappeared and the principal part of the copper with her, leaving only pieces here and there on the surface. Before this untoward event the copper was so plentiful that the Indians had only to turn it over and pick out such pieces as would best suit the different uses for which they intended it.

From this account it will be seen that it is not necessary to imagine a mysterious and extinct race more advanced in industrial arts than Indians to account for the ancient mines on Lake Superior. Besides, other workings requiring as much labor have been carried on by Indians. The catlinite or pipe-stone quarry in Minnesota was worked far into the present century. The mica mines in North Carolina, which are now worked, were operated in a way and to an extent suggestive of the Lake Superior copper mines, and were abandoned, according to Prof. Kerr, the geologist who examined them, a little over three hundred years ago, or after the arrival of the whites. There are also novaculite mines in Arkansas, obsidian workings in the Yellowstone Park, soapstone pottery quarries in Rhode Island and California, and especially the astonishingly extensive workings at Flint Ridge, Licking County, Ohio, where chert was mined and manufactured into various articles at "workshops" on the grounds. Some of these various diggings were undoubtedly the work of "Indians;" what the others were must be left to archaeologists to decide. All give evidence that the natives of the country were close observers and possessed a considerable degree of skill in detecting and obtaining the various minerals which pleased their taste or were of use in their simple lives.

The reason which has been given for supposing that the ancient miners on Lake Superior had disappeared before the arrival of the whites is that the Indians made no mention of the mines to the French and had no tradition about them. But the first French explorers of the St. Lawrence, who left a record of their voyage, were informed by the Indians even of the Gulf—over fifteen hundred miles away—that copper came from a distant country in the west, and this statement was confirmed as they proceeded up the river. The same story was repeated a hundred years later after settlements had been made, and it persisted until the source of the copper was found.

In the account of Cartier's second voyage, in 1535, given in Hakluyt, it is stated that the natives of the south shore of the Gulf of St. Lawrence informed him that the way to Canada was towards the west, and that the north shore before Canada was reached was the beginning of Saguenay, "and that thence commeth the red copper of them named Caignetdage." Subsequently, at Hochelaga (Montreal), the natives described to the French the voyage up the St. Lawrence and the Ottawa to Saguenay. "Moreover, they showed us with signs that the said three fols being past, a man might sayle the space of three moneths more alongst that river, and that along the hills that are on the north side there is a great river which (even as the other) commeth from the west, we thought it to be the river that runneth through the countrey of Saguenay; and without any sign or question mooved or asked of them, they tooke the chayne of our Capitaines whistle which was of silver, and the dagger-haft of one of our fellow Mariners, hanging on his side being of yellow copper gilt, and shewed us that such stuffe came from the said River." "Our Capitaine shewed them redde copper, which in their language they call Cagnetadze, and looking towards that countrey, with signs asked them if any came from thence, they shaking their heads answered no; but they shewed us that it came from Saguenay." "But the right and ready way to go to Saguenay is up that way to Hochelaga [Montreal], and then into another [river] that commeth from Saguenay [the Ottawa] and then entereth into the foresaid river [the St. Lawrence] and that there is yet one moneths sayling thither. Moreover they told us and gave us to understand that there are people . . . and many inhabited towns and that they have great store of gold and red copper . . . and that beyond Saguenay the said river entereth into two or three great lakes, and that there is a sea of fresh water found, and as they have heard say of those of Saguenay, there was never man heard of that found out the end thereof, for as they told us they themselves were never there."

Allowing for the difficulty of communicating by signs and the many chances of misunderstanding, this is a geographical description which can almost be followed on the map, and the account shows that the St. Lawrence Indians knew that the copper they had came from a place in the west where there were great lakes and a "sea of fresh water." This was all hearsay with them, as they had never visited the distant country, which was inhabited by other tribes. But it seems evident enough that there was at that time a widely diffused knowledge of the source of the copper, which would hardly have been the case if the supply had ceased two or three generations before. When, over a hundred years later, French settlements had been established and traders and missionaries began to push forward to the great "sea of fresh water," they continually encountered the statement that copper

could be found on its shores, and Indian guides finally took them to the precise localities where the metal had formerly been mined, and whence it was still occasionally obtained. Copper specimens, sometimes of large size, all reported as coming from Lake Superior, were not uncommon at this time, as the following extracts show, and it seems evident that Indians still visited the old diggings and carried away such pieces of copper as they could find.

The Abbé Sagard, who was a missionary to New France about the year 1630, gave an account of the resources of the country in his "Grand Voyage du pays des Hurons," published at Paris in 1632. He did not penetrate as far as the upper lakes, but says that there were copper mines in that distant country which might prove profitable if there was a white population to support them and miners to work them, which would be the case if colonies were established. He saw a specimen of copper from the mines, which, he says, were eighty or one hundred leagues distant from the country of the Hurons. In Margry's *Découvertes et établissements des Français, Première partie, voyages des Français sur les grands lacs 1614-1684*, p. 81, is an extract from a letter relating to an exploration for copper written by Sieur Patoulet in Canada to Colbert in Paris. It is dated at Quebec, November 11, 1669, and is as follows: "Messrs. Joliet and Péné, to whom M. Talon paid 100 and 400 livres, respectively, to explore for the copper deposit which is above Lake Ontario, specimens from which you have seen, and ascertain if it is abundant, easy to work, and if there is easy transportation hither, have not yet returned. The first named should have been here in September, but there is no news of him yet, so that a report of what may be expected of the mine must be postponed until next year." On page 95 of the same volume is a letter from Jean Talon to the king, dated Quebec, November 2, 1671, in which occurs the following reference to copper, one locality of which had then become known: "The copper specimen from Lake Superior and the Nantaonagon (Ontonagon) river which I send, indicates that there is some deposit or some river bank which yields this substance in as pure a state as could be wished, and more than twenty Frenchmen have seen a mass of it in the lake which they estimate at eight hundred weight. The Jesuit fathers among the Ottawas use an anvil of this metal which weighs about a hundred pounds. It only remains to find the source of these detached pieces." He then gives some description of the Ontonagon river, in which he attempts to account for the formation *in situ* of the copper specimens found in its neighborhood (*galets de ce mestail*, evidently float copper), and goes on to say: "It is to be hoped that the frequent journeys of the Indians and French, who are beginning to make expeditions in that direction, will result in the discovery

of the place which furnishes such pure metal, and that without expense to the king."

The passages from the Jesuit Relations, which have been often quoted in this connection, show that the mining districts were well known to the Indians. Father Dablon, in the Relations for 1669-70, describes these places, of which he was informed by the Indians. The first was Michipicoten Island, on the east shore of the lake; then came St. Ignace, on the north shore, and then Isle Royale, "celebrated for its copper, whence could be seen in the cliffs several beds of red copper separated from each other by layers of earth." The other principal locality was the Ontonagon river, from which place the French had received a copper specimen three years previously which weighed one hundred pounds. The Indian (Ottawa) women of this region, the father says, while digging holes for corn, used to find pieces of copper (float copper) weighing ten and twenty pounds. A hundred years later Alexander Henry mentions the same thing of this locality, and adds that the Indians beat the pieces of copper into bracelets and spoons. Father Dablon goes on to say that opinions differed as to the place the Ontonagon copper came from, some thinking it was near the forks of the river and along the eastern branch (near the old workings), while other guessers placed it elsewhere.

The information the Indians gave was not spontaneous, for Father Dablon says that it required some address to induce them to reveal the mineralogical secrets which they wished to conceal from the whites. This reluctance to give information about mineral localities is said to have survived down to a very recent period, and stories are known to the older residents of the copper district, some of them amusing enough, illustrating this trait. At all events, Father Dablon's Indians knew where the old localities were. He says he was assured that in the land to the south there were deposits (*mines* is the French word) of the metal in various places. He had just been speaking of Keweenaw Point, but the connection is not close enough to warrant the inference that he meant immediately to the south of the Point. If that could be shown, there would be a direct reference to the "diggings" on the peninsula.

But most of the misapprehension in this matter has arisen from the use of the misleading term "mine" in connection with this district. We associate with that term shafts or tunnels and underground workings, none of which ever existed on the lake. The ancient miners were not miners in the proper sense of the word as were those prehistoric men who mined copper ore in the Tyrol, or those other prehistoric miners who sank shafts and ran drifts in the chert deposits of Belgium. On the contrary they were, as has been abundantly shown, only surface prospectors, and appear to have dug for copper wherever they happened to

find it. If the pieces were loose float in the gravel, as at the Quincy location, and as the Ottawa squaws found them at Ontonagon, in 1670, and the later Indians in Henry's and Schoolcraft's time, well and good, they "mined" them and beat them into shape. If the copper was in huge masses on the surface as at the Mesnard they "mined" in that shape by working off pieces with their stone hammers. If the copper was fast in the rock they broke it out by hammering the rock away from it, and if the rock extended into the ground they dug down around it, broke away what "barrel work" they could and treated the "mass" as they did that already dug for them on the surface. They had no idea corresponding to the word mine. Hence there is no apparent reason why there should have been much of a distinction in the minds of people who were not miners between places where they dug copper out of the gravel, as in the trenches at the Quincy, and places where they were obliged to dig around rocks to obtain it. It is largely the undue emphasis upon the idea of mining that has led writers to create another race than the Indians to practice that skilled art on Keweenaw Point, Isle Royale and the Canadian shore. The false or exaggerated idea has led to an equally exaggerated inference. All this is well illustrated in a passage in Wilson's "Prehistoric Man," describing an interview with an old Chippewa chief some fifty years ago. He was asked about the ancient copper miners and declared that he knew nothing about them. The Indians, he said, used to have copper axes, but until the French came and blasted the rocks with powder they had no traditions of the copper mines being worked. His forefathers used to build big canoes and cross the lake to Isle Royale where they found more copper than anywhere else. This is a distinct tradition enough of one famous copper locality—Isle Royale—although it may be unreliable from its late date, but the story shows how the belief that the Indians had no tradition of the old mines could originate. The old chief very properly denied knowing about a thing that never existed. His ancestors never carried on mining but only digging. Deep mines, where blasting is done, which very likely he had seen, were of course unknown to them.

Like this old chief, Father Dablon's Indians showed full traditional knowledge when they told him of the mineral localities where, several generations before, copper had been extensively dug. The ancient trenches in the woods had long been covered and contained no visible copper. They possessed only an antiquarian interest to which the Indians were strangers, and also, as Father Dablon relates, his Indian friends were not disposed to give more information than they could help.

The first systematic exploring or "prospecting" party to search the Ontonagon lode was sent out from Quebec about the year that Father Dablon described the place, viz. 1669.

The expedition returned without accomplishing its object for want of time, and was met on Lake Erie by La Salle's party going to the Mississippi. No mining was done there until a hundred years later under Alexander Henry.

The foregoing extracts from the account of Cartier's voyage, the Abbe Sagard, the Jesuit Relations and Margry show the continuity of the ancient or pre-Columbian mining on Lake Superior and the modern. As soon as the French arrived at the St. Lawrence in 1535, they found the natives knowing proportionately as much about the distant source of the copper they possessed as the ordinary eastern citizen does now. Over a hundred years later, after settlements had been made, there was still living knowledge that copper came from Lake Superior, and especially the Ontonagon river, where it was easy to find float copper. But during this long period active importation of European articles had been going on so that, as the Chippewa chief explained, native industries, including the search for copper, had been interrupted. Iron articles, knives, hatchets, weapons, and innumerable other desirable things, made it unnecessary for the Indians to exert themselves in exploiting the old source of supply. But when the French began to inquire for copper they were taken to the precise localities where the metal had formerly been obtained which, like all mining districts, were full of abandoned and forgotten workings, and they were shown the metal in place.

Native copper, as has been said, occurs sparingly in several places in the eastern part of the country. In the Appalachian region ores of copper occur and have been extensively mined, but native copper does not occur there except as a mineralogical rarity. Nevertheless it has been suggested that copper was produced in that part of the country in pre-Columbian times. If this were so there should be evidences of old mines and of smelting operations of some kind, because copper ore must be smelted to produce the metal. No old workings in that region have, however, yet been identified as pre-Columbian copper mines, and no traces of aboriginal smelting have been discovered to support the suggestion. Ancient mica mines have, indeed, been discovered in North Carolina, which are now worked, but if the Indians mined for copper at all in that mineral district the fact remains to be proved. Moreover, the Smithsonian collection, so far from showing a comparative abundance of copper articles from the Appalachian region, as would be expected if it had been a center of distribution like Keeweenaw and Ontonagon in the north, has remarkably few copper relics from the Carolinas, Georgia, Alabama and Tennessee. The idea doubtless arose from the statements in the accounts of the Spanish explorers of this region and of the French and English colonies on the coast. DeSoto's march was a continuous pursuit of an *ignis fatuus*. He was told that gold or copper and other riches were in the Appalachians,

and was kept perpetually on the move after them, while they fled before him in the most tantalizing manner. He did find pearls, and probably in large quantities, the contents of graves show that that form of wealth really existed. But that other form of wealth—"a melting of gold or copper"—which he coveted, kept moving before him from town to town and tribe to tribe all through his weary journey, and he never found it. The Spaniards on the Florida coast in the following years were persuaded that there was great mineral wealth of some kind in the Appalachians, and told of a town in the region where the minerals were supposed to be, which they called La Grand Copal. This town was said to be sixty leagues northwest of Saint Helena, on the South Carolina coast.

DeSoto's march was undertaken in 1539. In 1562 the French established a short-lived colony at Port Royal, S. C., under Captain Ribault, which was succeeded two years later by another at the river of May (the St. John's) in charge of René Laudonnière, the history of which, with its tragic end, was brought prominently to notice by Parkman some years ago. Laudonnière wrote a full description of the resources of the country, in the course of which he says (Hakluyt's translation), "there is found amongst the savages good quantitie of gold and silver which is gotten out of the shippes that are lost upon the coast, as I have understood by the Savages themselves. They use traffique thereof one with another. And that which maketh me the rather believe it, is that on the coast towards the cape, where commonly the shippes are cast away, there is more store of silver than towards the north. Nevertheless, they say that in the mountains of Appalatcy there are mines of copper, which I thinke to be golde." From these mountains came "two stones of fine christal," which were presented to the French, together with a number of pearls, and they learned from the Indians that there was "an infinite quantity of slate stone, wherewith they made wedges to cleave their wood," in the same mountains. A "king" of the country lying near these mountains sent Laudonnière "a plate of a minerall that came out of this mountaine, out of the foot whereof there runneth a streame of golde or copper, as the savages thinke, out of which they dig up the sand with an hollow and drie cane of reed untill the cane be full; afterward they shake it, and finde that there are many small graines of copper and silver among this sand: which giveth them to understand that some rich mine must needs be in the mountaine."

If the Spaniards had not been "prospecting" through this part of the country twenty years before, this would be a most interesting account of primitive vanning, an operation familiar to all gold prospectors and known in many parts of the world. But the suspicion arises that the Indians had watched the Spaniards operating in this way in the streams in their search for gold and

were describing their method. The description, moreover, could not apply to copper, although it is true of gold, which is found in the sands of streams, and is "panned out" in the manner described. The effort to find copper from this mineral region was unavailing. On Ribault's arrival to succor Laudonnière's party, the Indians offered to conduct him, in a few days' journey, to the mountains of Apalatcy. "In those mountaines, as they sayd, is found redde copper, which they call in their language Sieroa Pira, which is as much to say as redde mettall, whereof I had a piece, which at the very instant I showed to Captaine Ribault, which caused his gold finer to make an assay thereof, which reported unto him that it was perfect golde." This assay confirms, or perhaps was the cause of Laudonnière's surmise that the copper of Apalatcy was gold. It is not easy to understand at this distance why there should have been any difficulty in recognizing the metal at once. There was evidently some misunderstanding or misinterpretation of the questions and the answers between the French and Indians in reference to the red metal, so that while the French meant copper the Indians understood gold. At any rate, the French saw no copper from the Appalachians.

Sir Walter Raleigh planted a colony at Roanoke Island in 1585, of which Ralph Lane was superintendent. He, also, soon heard of mineral wealth in the mountains to the west, and was eager to find copper there. It must be remembered that it was a great disappointment in Europe to find that the land which Columbus and his successors discovered was a continent, and incessant attempts were made to find a way through or around it to the south seas and Cathay, which were continued for more than three hundred years after the voyage of Columbus. Therefore Ralph Lane wrote that "the discoverie of a good mine by the goodnesse of God, or a passage to the south sea, or some way to it, and nothing els can bring this countrey in request to be inhabited by our nation." And particularly with reference to the rumored mine to the west, he says: "And that which made me most desirous to have some doings with the Mangoaks,* either in friendship or otherwise to have had one or two of them prisoners, was, for that it is a thing most notorious to all the countrey, that there is a Province to the which the said Mangoaks have recourse and trafique up that River of Monatoc (Roanoke) which hath a marveilous and most strange Minerall. This mine is so notorious amongst them as not only to the savages dwelling up the said river and also to the savages of Chawanook, and all them to the Westward, but also to all them of the maine; the countreys name is of fame and is called Chaunis Temoatan.

The minerall they say is Wassader which is copper, but they

*The Mangoaks lived in Virginia, near the North Carolina line.

call by the name of wassader every mettall whatsoever; they say it is of the colour of our copper, but our copper is better than theirs, and the reason is for that it is redder and harder, whereas, that of Chaunis Temoatan is very soft and pale . . . Of this mettall the Mangoaks have so great store, by report of all the savages adjoining, that they beautify their houses with great plates of the same." Chaunis Temoatan, or the mineral country, was said to be twenty days' journey from the Mangoaks.

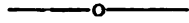
This account contains a variation of the description given the French twenty years before, of washing or panning out, but in the English account there is a distinct reference to melting or smelting. The Indians told Lane that after the material from the stream was caught in a bowl it was "cast into a fire, and forthwith it melted, and doeth yield in five parts at the first melting, two parts of mettall for three parts of oare." It is impossible to understand this statement as it stands. It may possibly have referred to the use of fire in getting out the mica, or may have been a tradition obscured by time and confused by interpretation of some Spanish operations. The story survived into the next century. The English, however, did not see this operation, nor did they see any "greate plates" of copper. The only things of the kind were small, probably like those found in graves and mounds. "An hundred and fifty miles into the maine," Lane continues, "in two towns we saw divers small plates of copper, that had been made, as we understood, by the inhabitants that dwell further into the country, where, as they say, are mountains and rivers that yield also white grains of mettall which is to be deemed silver." If the Indians had possessed large plates the English would doubtless have seen them as well as the small, and some of them would have turned up before now, as the smaller ones have, in graves.

But all mystery disappears from the subject when we put together the Spanish, French and English accounts of the rumored mineral wealth and the region from which it came, and compare them with the results of modern discovery. The Spaniards were after gold, and learned, as they believed, that it was to be found in the Appalachians, because, when they asked after a country rich in minerals they were referred there. Laudonnière speaks of a singular mineral which was sent to him, which occurred in plates and was found in the Appalachians together with "christol" and slate stone; and Ralph Lane hears of a "marvellous and strange" mineral which occurred in large plates with which the Indians adorned their houses. The mine, he says, was "notorious" in the whole country, and was in the mountains to the west of Roanoke. This mineral, which was not copper or any ore of copper, occurring in large plates, which were paler and softer than copper, was undoubtedly mica, and the ancient mines which were the cause of the early mining excitement, were re-

discovered in the mountains of North Carolina, in 1868. Prof. Kerr, who was then State Geologist of North Carolina, thus describes them: "In 1868 my attention was first called to the existence of old mine holes, as they are called in the region. Being invited to visit some *old Spanish silver mines* a few miles south of Bakersville, I found a dozen or more open pits, forty to fifty feet wide, by seventy-five to one hundred feet long, filled up to fifteen or twenty of depth, disposed along the sloping crest of a long terminal ridge or spur of a neighboring mountain. The excavated earth was piled in huge heaps about the margins of the pits, and the whole overgrown with the heaviest forest trees, oaks and chestnuts, some of them three feet and more in diameter, and some of the largest belonging to a former generation of forest growth, fallen and decayed, facts which indicate a minimum of not less than three hundred years." This description would apply almost word for word to the Lake Superior copper diggings. The only modern mines, Prof. Kerr says, which turned out profitably, were those which followed the old workings. The mineral is taken out in large lumps from thirty or fifty up to several hundred pounds in weight, which split readily into plates or sheets, sometimes three feet in diameter, and would cut sixteen by twenty inches. The common forms are two or three by four or six inches. All this confirms and explains very fully the statements of the Spanish, French and English explorers and colonists of the sixteenth century. Now that we know what the mineral or "mettall" was, we understand and can explain away the confusion which arose in the inquiry after copper. The thing which was valuable to the Indians, so valuable that they adorned their dwellings with it and placed it with other valuables in their graves, was naturally prominent in their minds when the strangers were inquisitive about riches, and they answered according to their light. It does not appear that copper was known to the southern Indians except as an article of barter, as it was all along the coast, but mica held the place with them in point of production, that copper occupied with the northern Indians.

Reviewing, now, the whole evidence—historical, mineralogical and, to a slight extent, archaeological—it appears that when this continent was revealed to Europeans the natives of the country were in the full neolithic period, but were using copper to a slight extent. They were probably mining it in a desultory way in the Keweenaw workings just as they were mining mica in the mountains of North Carolina. How long this had been going on it is impossible to say. The metal was principally used for ornamental purposes where it was scarce, in the south, but where it was plentiful, in the north, and particularly towards the center of production, it was put to a practical use. There is at present no evidence that the Indians had any knowledge of smelting, which art is necessary to a real metal age. The progress from

stone through copper to bronze could hardly be expected on this continent, because there was no tin available in the northern and eastern parts of the country with which to make bronze. To be sure the Indians had distant neighbors in Mexico and Central and Southern America, some of whom possessed the rudiments of smelting and were in an incipient bronze "age," from whom a knowledge of smelting, whereby copper could be obtained from its ores, might possibly have been acquired in the course of centuries by the slow process of aboriginal intercourse, if all native industrial development had not been interrupted by the intervention of Europeans.



INTAGLIO EFFIGIES OF WISCONSIN.

By T. H. LEWIS.

Besides the uncounted hundreds of mounds of earth, shaped to represent animals and other figures, which were constructed in prehistoric times in the southern part of Wisconsin, a few—very few—imitations were framed on the opposite principle. That is to say, that instead of earth being heaped up on the surface of the ground two or three feet in height, with a base shaped to resemble in outline some object of nature or art, the figure was formed by excavating a certain amount of earth from within such a boundary line, a part of the dug-out earth being deposited around the margin of the excavation, in order to even up the irregularities of the natural surface.

The valuable explorations and surveys of the antiquities of Wisconsin made by I. A. Lapham in 1850 and 1851, which gave him the means of delineating hundreds of raised effigies, only brought to light in all some nine of the reversed kind, which for distinction may well be called *intaglio* effigies. These were all situated within fifty miles of Lake Michigan, in five localities, specified as follows:

No. 1.—A few rods east of the (old) Forest Home cemetery, about two and a half miles southwest of the mouth of the Milwaukee river, was a "lizard" shaped excavation, at least 145 feet long, judging from his diagram.

No. 2 On the west side of the Milwaukee river, six miles north of the center of the city, on "Indian Prairie," were four "lizard" excavations together. The largest of these was apparently some 290 feet in length; and there was another excavation a few hundred feet away nearly fifty feet long, and in shape as much like an outstretched hide as anything else.

No. 3—On the school section about a mile and a half southeast from the village of Pewaukee, was a "lizard" excavation about 133 feet long.

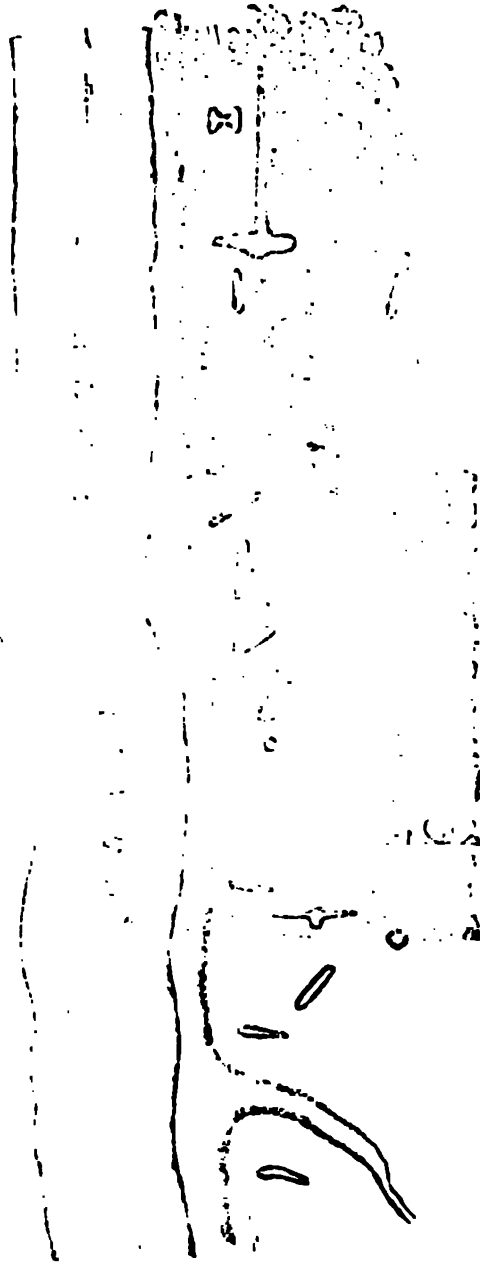
No. 4. At Theresa, forty-three miles northwest from Milwaukee, were some curved embankments surrounding three separated ovoid or curlicue excavations that were in size from 20 to 28 feet long.

No. 5. A little southwest of Fort Atkinson and distant forty-eight miles west-southwest from Milwaukee, was a linear excavation 13 feet long.

Now these are all the intaglios either known to have existed in Wisconsin, and with the notable exception of one county, they no longer exist. But among them, one specimen at least is of large dimensions and fit to survive.

One day last month, during an archaeological examination of the region where the intaglio referred to is situated, a careful survey of it was made, together with what remains of the mounds in the group of which it forms a part. This

is the group at the locality referred to above as No. 5, near Fort



Atkinson, Jefferson County. It can be more definitely described as located on the south half of the northwest quarter of section four, town 5, range 14; and it is the works represented on Plate XXVIII of Lapham's "Antiquities of Wisconsin." The length of this intaglio is 131 feet, and that portion of it which represents the body is two and a half feet in depth. A small portion of the earth taken from the excavation was distributed along the margin to make the immediate surrounding surface more even and symmetrical. There are not now, and there never were, any such ridges thrown up around the body as are shown in Lapham's diagram (No. 7 of Plate IX), which have the appearance of being quite elevations. These exaggerations are probably the fault of the draughtsman or the engraver. The anterior part of the effigy—the line representing the head, breast and front line of the fore-leg—in the original diagram is



FIG. 1. MOUND.

represented as being almost a straight line, whereas, in fact, it is quite curved, and the front line of the legs is well defined, showing it to be much broader than in the engraving. Eighteen points were fixed by the survey of 1872 on the outline of this intaglio, which are amply sufficient for the determination of its exact shape.

In the Lapham engraving showing the general plan of the group (Plate XXVIII, No. 1), there are ten embankments, three round mounds, one bird, one animal, one intaglio, one "hammer" with handle, and a dumb-bell shaped mound. The round mound, represented as being fourteen feet in height, is in fact only three and a half feet, and there are two additional round mounds not shown in the diagram. One of the embankments is an animal, and there are five additional embankments. The dumb-bell shaped mound has a well-defined tail attached to it, showing it to be a lizard in form. The head of the so-called hammer is also a lizard, with a curved tail, and the handle is a fish-shaped embankment. It is very evident that the two lizards

were built first, and that later the club-shaped embankment was constructed, the narrow end extending across the tail of one lizard (the dumb-bell one), and the large end extending up on and terminating at the center of the back of the other one.

There is no intention in the above remarks to reflect on Mr. Lapham, who was an energetic and able man, but seeing that his investigations were made at a very early day, when the almost entire absence of railroads made traveling tedious and expensive, and when the woods were not cleared off to the extent they now are, it is not to be wondered at that in many cases his mound surveys consisted merely of one or two actual supplemented by sketches made by eye. He generously gave his services for nothing, the American Antiquarian Society having placed at his disposal the means of paying the actual traveling and other incidental expenses of the work; but when the extensive region covered by the effigy mounds is considered it is obvious that as many thousands of dollars as the hundreds given to him would have been necessary to do full justice to the



Lizard's Effigy near Forest Home Cemetery.

task, and years of time should have been employed instead of the two brief seasons within which his explorations actually took place.

It may here be appropriately remarked that the term "lizard" applied by Mr. Lapham to those effigies which present head, legs, body, and an extraordinary long tail, shown in profile, should now be abandoned, for, since his time, it has been fully shown that saurians when imitated in earth are invariably in plan, as if looked down upon, never from a side view. The builders of the effigy mounds had most decided conventional methods of delineation, and this way of distinguishing reptiles from other animals was one of them.

It would be an interesting question to know whether the *intaglios* were built subsequently to the *relievos* or *vice versa*, but there seems to be no criterion at present by which the riddle can be guessed. If, however, at some future time, an intaglio should be discovered across which a leg, tail or wing of a *relievo* should be carried, thus filling part of its hollow; or, on the

other hand, one whose excavation is continuous through any part of a raised mound, the relative priority would then be unmistakably obvious—at least as regards the specimen found.

* *
* *

The intaglio effigy described by Mr. T. H. Lewis was visited by the writer about ten years ago. At that time there were ridges thrown up around the body exactly as they are shown in Lapham's diagram.

The breaks or openings in these ridges corresponded to the head and legs of the animal, making the semblance complete. It is described in the book on Emblematic Mounds, on page 229 (see, also, pages 142 and 144). A cut reproduced from Lapham's plate is furnished. The plate is faulty in that it makes one of the ridges a mere round dot, whereas it was large enough to fill the space between the fore leg and the hind leg of the animal. The round mound which Mr. Lewis represents as three and one-half feet, was, at that time, considerably higher. The dumb-bell mound had no ridge attached to it, but was plainly of a type which has been recognized as a conventional form in many groups. The editor has called it a frog, though it is a very conventional form of a frog effigy.

Mr. Lewis has referred to these conventional methods of delineation and has shown that saurians, such as turtles, lizards, frogs, toads are invariably presented as if looked down upon, with legs extending to either side of the body.

The tail of the effigy furnished a descending pathway from the lookout to the pit. The question whether the intaglios were built subsequently to the relievos is not so interesting as the one propounded by Dr. Lapham, whether the corn-hills and garden-beds were left by the same people who built the effigies. The intaglios are always connected with a high, conical mound, which was used as a lookout. They were undoubtedly used as hiding places for hunters, and the openings between the ridges were places where the hunters could watch the game without being seen.—ED.

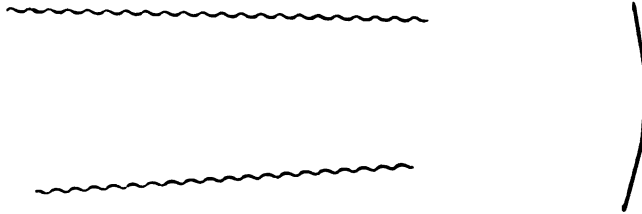
PALESTINE EXPLORATION.

BY THEODORE F. WRIGHT.

The excavations on the site of ancient Lachish have now been closed and efforts are making to obtain a new firman permitting work on another site, of which more anon. The work at Lachish has been of the greatest value as a training for future work, for nothing just like this had been done in Palestine. The attention of the exploration fund has been largely given to making accurate maps, to the identification of sites, and to ascertaining underground conditions at Jerusalem by means of water drains and of shafts sunk to the old surfaces. But this work is nearly complete, and scholars now ask for such work as has yielded such large returns in Egypt, namely, the uncovering of cities of the past.

Of course this is much more difficult in Palestine than in Egypt, and we must look with patience on the efforts made there with no assistance from the government, and with the obstructions which the climate puts in the way. That the work will be maintained, however, is certain.

A relic from Lachish has lately been received, through the kindness of a friend in Jerusalem. It is a piece of flint knife, of which I give an illustration:



The piece is about two inches in length and one inch in breadth. It is of flint, with one smooth side, while the other has, as may be seen from the section, three planes of surface, meeting in very large angles. Dr. W. H. Ward, of the *Independent*, remarked, on seeing it, that he had found many specimens about the site of Babylon, but had never seen a fragment so large as this. It is supposed to date from the Amorite time, before the invasion of the Israelites under Joshua.

We know from Joshua v: 2, that knives of flint were used in the circumcision at Gilgal. We remember that a "sharp stone"

was used by Zipporah, Exodus iv: 25, for a similar purpose. Here the revisers read simply "a flint." It is known that the Egyptians used knives of flint in making cuttings for embalming, thus making use of what they considered a more sacred implement than one of bronze or iron.

The notching of the edge would greatly increase the efficiency of the knife, and I believe that large knives are made so at the present time by our cutlers.

The curved marks on the smooth side of the knife are not explained. They are very regular, and one can imagine that they would help to hold the knife in a handle, but they may be simply natural. It is, however, a little difficult to believe that the natural cleavage of the stone would give so perfectly and delicately rounding a side as we have here, just convex enough for beauty.

CLIFF-DWELLERS' HOUSES.

BY PALMER HENDERSON.

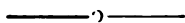
The most notable Cliff-dweller region so far explored lies in the territory where Colorado, New Mexico, Utah and Arizona are joined. This section is traversed by mountain ranges in all directions and veined by canons. In the precipitous sides of these gorges the Cliff-dwellers built their homes in natural galleries or pockets formed by the elements in the sandstone rock. The houses were made as many stories as the shallow cave of the cliff would admit, each story being about five or six feet high. To form them logs hewn with stone axes were thrust through holes built in the masonry for floor joist. Across these were laid smaller boughs, then twigs and adobe, last cement, making a most durable floor. There are few windows. They are usually about eighteen inches square, piercing the thick walls, often two or three feet through. Much of the masonry would do credit to the builder of a modern many-storied flat. Where it was poor the wall was generally stuccoed. The doors are most curious. They are well-fashioned stone slabs, which were, in some cases, simply fitted into a groove all around, leaning against one wooden bar at the top and secured by a stick thrust through wooden staples at the sides, or else they were pushed up between two wooden poles at the top. When the family lay down for the night in its one room, each wrapped in pristine innocence and a matting rug, the slab tightly fitted to the opening, the room must have strongly resembled a family vault; and the air must have been as sweet and pure. Traces have been found of wicker doors, to be used in hot weather. In the stone wall about the estufa were little closets, a few inches square, which contained the bone needles, shell beads and

like treasures of the ancient people. Before these little treasure closets were small stone doors, which were most ingeniously fitted. Nowhere is there an arch to be found. There are several well-built round towers, the stones being wedge-shaped and carefully fitted. This tower building seems to have been their only architectural diversion; there are no attempts at carvings. The Cliff-dwellers knew no metal. Not a scrap of it as big as the world's charity has ever been found among their relics or in their houses. That is one of the difficulties in studying the subject. There are no coins, no worked metals, no hieroglyphics, nor any sort of attempt at writing or enumeration. ¶

Now as to the plan of these ancient flats. A group of these buildings in a canonside form a village. In every shallow cave of the cliff the stone houses will perch, every one the exact color of the bluff itself. Viewed from a distance they look like pigeon holes in a huge dove-cote. They perch in the most carefully selected inaccessible spots, from perhaps one hundred to a thousand or fifteen hundred feet from the top or bottom of a precipitous canon, nestling back in the embrace of the cliff, which extends far out over them like the proscenium arch in a theater. That is why they have never decayed in these many hundred years, some say thousands. Not a drop of moisture, snow, or rain ever reaches them from one century to another. Not even a strong gust of wind—and the canons are still—could carry the snow back into the houses. Each "flat" had one living room, called an *estufa*, which was built circular, with a diameter of from nine to twenty-two feet, the extremes measured, and averaging fourteen feet across. Around this room, against the wall, were built six pilasters projecting and connecting by a wall. This was a sort of counter, evidently, upon which to stand the few household effects. They had absolutely no other furniture. The fire-place is a basin-shaped shallow hole in the floor, carefully cemented. Behind is always built a low wall before a small air-hole, the only one, by the way, in the *estufa*, which is generally under ground. The smoke went out as it chose or stayed. The *estufa* walls are black with smoke, and the people must have been a lovely tan shade. One fire-place was found with a willow and mud screen. This *estufa* was the Cliff-dweller's reception-room, bed-room, kitchen and chapel. Often an underground passage only leads to it from the outer wall. Among the Cliff-dwellers every house was a castle. Every group of cliff houses is built with reference to water, which is a first consideration in that country, where there is so little and that mostly alkali. Some of the springs they discovered are now, of course, dry, but others still trickle out charily at the cliff's base or slowly ooze into a little basin-shaped hollow of the rock.

One thing more about the general style of the houses and the proofs of antiquity. Much can be learned of this ancient people

from their mummies and relics, their pottery, their textile and other arts. The general style of the houses furnishes proofs of their antiquity, but the small, dark rooms which surround the estufas are poorly understood. They were undoubtedly nothing but store-rooms, and the T-shaped low doors, which are at once noticed in the cliff houses, were so built to admit of the burdens which were strapped upon the back and shoulders, and so borne up or down the canon's side. The Cliff-dwellers were agriculturists and lived by cultivating the fertile mesas above them, and used their houses only as dormitories. They built great reservoirs for irrigation, which endure to this day.



FOLKLORE OF HAWAII.*

All folklore is interesting. Few countries are richer in legends and interesting folklore than Hawaii, and yet the myths and pre-historic stories of hardly any other country are so little known to the public as are those of this picturesque group of islands. Indeed, were it not for the late King Kalakaua the popular ignorance of this subject would be even denser than it is. A true Hawaiian at heart, his majesty was well acquainted with the ancient legends of his country, and it was under his sanction and bearing his name as author that a book concerning the legends and myths of Hawaii was published in English a few years ago.

Like all legends, those of Hawaii are based more or less on miracles and treat of personages who are as a rule heroic and super-human. Like most legends, too, they are forcible and graphic, and are in their way quite as interesting as the "Iliad" and "Odyssey," the legendary tales of Ireland and the old sagas of the Norsemen. Readers, says *The New York Herald*, however, can judge for themselves. Here, in as concise language as possible, are set forth a few of the most typical legends of old Hawaii.

KELEA, THE SURF RIDER OF MAUI.

Kelea was the beautiful but capricious sister of Kawaio, king of Maui. Petted and wayward, she scorned all suitors for her hand, preferring the music of the waves to any lover's whisper. Indeed, she so loved the water that she soon became known as the most daring surf swimmer in the kingdom. A battle with the waves was her favorite sport, and when her brother spoke to her of marriage she gaily answered that her surf board was her husband and she would never embrace any other. Even as she spoke, however, a wooer was in search of

*Some poetical legends culled from the late King's book.—(Chicago Times)

her. There lived then at Oahu a chief named Lo-Lale, whose brother, Piliwale, was sovereign of the island. An amiable, handsome prince, Lo-Lale had reached the age of 35 without marrying, and the reason was said to be because a lovely princess whom he was about to marry had come to her death some years before by drowning. Piliwale, having no son, was naturally anxious that his brother should marry so that the royal line might be perpetuated, and Lo-Lale finally yielded to his importunities and consented that ambassadors of high rank should be sent to the neighboring islands in search of a suitable wife.

Of these ambassadors the ablest and boldest was Lo-Lale's cousin, Kalamakua. He acted as leader, and before his departure he pledged himself to bring home to Lo-Lale a young and beautiful bride, and further vowed that he would marry her himself if Lo-Lale was not satisfied with her or if she was not satisfied with Lo-Lale. So all went well until the canoe of the Oahuan ambassadors reached Hamakuapoko. There, as luck would have it, they saw Kelea and her attendants swimming among the breakers. Then up rose Kalamakua and courteously invited the lovely maiden to take a seat in the canoe, offering to ride the surf with it to the beach—an exciting sport, requiring great skill. Kelea accepted the invitation and the canoe was quickly beached. Urged by the applause of those on shore Kalamakua proposed to repeat the performance and Kelea willingly retained her seat. Again the daring feat was performed, and not till then did Kalamakua learn that his companion was the sister of the king of Maui. With increased respect he invited her to ride with him over the breakers once more, and she consented. Forth rode the canoe, but before it reached the breakers a squall struck it and drove it out upon the broad ocean. Then Kelea would have leaped into the sea had not Kalamakua restrained her and coaxed her into cowering down beside him at the bottom of the boat. How lovely she was he then saw, and he vowed to win her for his cousin Lo-Lale. But meanwhile the canoe was being swept far out to sea, and so great was the storm that death seemed at hand every moment. Days passed thus and still no sight of land. Kalamakua had by this time asked Kelea to become Lo-Lale's bride and her answer was that she could not act without her brother's approval. At last land was sighted and it chanced to be Kaoio Point, on the western side of Oahu. Kalamakua at once sent word to Lo-Lale, and the next day Kelea and Lo-Lale met face to face. Lo-Lale was delighted with the maiden, and when she finally consented to become his wife without waiting to hear from her brother he was so overjoyed that he offered to divide his estates with Kalamakua as an evidence of gratitude.

So the years passed, and none seemed happier than Lo-Lale and Kelea. But Kelea was not happy, even though she had

three lovely children. She longed for the sea, and the place which seemed to please her above all others was Ewa, where Kalamakua made his seaside home. He and she met often and sailed together over the angry surf, and then only did Kelea seem to be really happy. Finally she told Lo-Lale that married life was irksome to her and that she intended to return to her brother's court. Though this blow broke his heart, as he suspected that she had given her heart to Kalamakua, he consented to a divorce and bade her farewell. On her way to her brother's court Kelea touched at Ewa, and straightway, overcome by her passion for the sea, plunged into the surf. There were many other bathers, but she excelled them all and was so loudly cheered that the shouts reached Kalamakua, and he went down and greeted her and learned from her that she had left Lo-Lale forever and was on her way to her brother's court. Then said Kalamakua: "When I went in search of a wife for Lo-Lale I promised that if he objected to the woman I brought or she to him I would take her myself. You have objected to him. Is Kalamakua better to your liking?" "I will remain at Ewa," was Kelea's answer.

So Kelea became the wife of Kalamakua, and soon afterward Lo-Lale sent her a present of fruit and a message of peace and forgiveness. He and she never met again. In caring for the welfare of his people Lo-Lale spent the remainder of his days, while Kelea and Kalamakua lived happily together and with their daughter, Luchoheloe, who inherited all her mother's famous beauty.

A BURIED RACE IN CHILI.

In the northern portion of Chili, near the Pacific coast, are the remains of a race advanced in the scale of civilization. Rude agricultural implements show them to have had fixed habitations. One whole village has been unearthed, showing the structure of mud and stone houses. In the graves are found mummies in all states of preservation. In this method of burial and in their rude attempts at art, in the sculpture work in clay and figures worked in their fabrics, they resemble the ancient Egyptians. Indeed, some of the fabrics found are exactly like the woven goods found in the valley of the Nile.

The mummies are wrapped in fancy-colored cloths. In many instances the skins of animals cover the last layer of cloth. Sealskins are sometimes used; again, the skin and plumage of a kind of pelican.

Wood was scarce with these people, yet this fact seemed to make them the more adept in its manipulation. They made bows and arrows, fish spears, spindles, boats and paddles of wood. The paddles were often of three short pieces ingeniously spliced together. *H. I. Smith.*

PUEBLOS AT CASA GRANDE.

By Y. H. ADDIS.

All the hilly region parallel with the Rio Bravo (otherwise the Rio Grande) stretching west of El Paso contains very many ruins. About 100 miles south of the border and 160 miles northwest of the City of Chihuahua lie Las Casas Grande, the great houses that give their name to the present settlement, the river and the valley. Within half a mile of the modern town of about 4000 souls are the ancient ruins. The river bottom is here about two miles wide, and it is bounded by a plateau some twenty-five feet higher, on which sterile bench in part and partly on the fertile bottomland are found the ruins. Various of the early writers profess to describe these ruins, regarded as a tarrying point of the Aztecs on their pilgrimage southward, but these descriptions are highly inexact. Even Clavigero, often accepted as authentic, has with characteristic racial adaptability, written his account from hearsay evidence. He, however, had a reasonable excuse for his lack of enterprise in view of the Apache depredations raging in his time, while no such serious obstacle justified the slipshod methods of even that clever antiquarian Don Alfredo Chavero and compeers, who, taking second-hand evidence, have perpetuated in the costly volumes of "Mexico a Traves de Los Siglos" descriptions which I, by personal exploration, measurements, etc., have found to be diametrically opposed to the truth.

The length of the ruin is 1200 yards, its breadth 600 yards—this, of course, meaning the group of ruins. The main edifice, rectangular in outline, covered a space 800 feet from north to south by 250 feet east and west, being orientated to the cardinal points of the compass. The ground plan can not be traced through the heaps of debris, but it is almost sure to have been ranges of cell-like rooms, connected by, or opening upon, corridors or ante-rooms, the latter being very common in ancient Mexican ruins, and even in modern Mexican homes, the conquering race having adopted this feature of aboriginal architecture.

The walls are built of adobe, different, however, in proportions from the sun-dried bricks of Southern Mexico, than which they are about three times thicker. The walls have a basal thickness of five feet, and they used to be five to fifty feet high, which would seem to predicate an arrangement of six to eight stories, instead of the three commonly attributed to this ruin. They were anciently stuccoed or plastered, both within and without, though of this coating no trace remains in these days, any mor

than of the beams of the ceilings, their socket holes or the wooden stairs or ladders which must have been used, since there is no trace of stone or earthen stairways. This, however, is not remarkable, as wood is at a premium in Northern Mexico, especially ready-cut wood.

It has been stated that "the doorways have the tapering form noticed in the ancient structures of Central America and Yucatan, and over them are circular openings." Certainly all the doorways noted by me are square-topped, as may be seen in the cuts from recent photographs. The circular openings still exist, but appear to have no special relation to the doorways. Narrow rectangular openings, which might be either loopholes or windows, are found here also. The massing of the debris, as to the relative position and bulk, pretty clearly indicates that the original plan of the structure was similar to that of various New Mexican pueblos—an immense central body, reaching to six or eight stories high, surrounded by concentric series of lower houses, each successively decreasing the number of stories, the whole pierced by several courtyards. Some 450 or 470 feet from the main buildings are the relics of a smaller construction, evidently four rows of chambers built about a square court. In general design, rather in ground plan, this ruin is wonderfully like that of La Quemada, in the State of Zacatecas, but the materials employed, the finish and other details, are radically different.

On the highest part of this mass of remains, marking, it is supposed, the site of the ancient place of worship, was found some years since a block of meteoric iron, around which still clung enwrapping bits of a curious fabric or textile of undoubtedly prehistoric origin. This, it is believed by archaeologists, was an object of veneration and worship, like that other ærolite of sacred treatment, the famous "black stone," set in the outer wall of the "kaaba" or "cube," which is the sanctum sanctorum of holy Mecca. Through the valley of Casas Grandes and that of Janos, a region 20 leagues long by 70 wide, are many mounds or cairns, of which the few that have been opened have yielded forth pottery, metates—stones for grinding corn, stone axes and other implements and utensils. I never succeeded in getting an unbroken specimen.

The tepalcates—fragments of potsherds—show a skill far superior to that of the local modern pottery, a fine texture, and a very pleasing arrangement in geometrical designs, of black, red, maroon or brown, on a ground of white, creamy or reddish.

Very early travelers reported the existence of an aqueduct, or canal, which formerly brought water from a spring to the town. Possibly it was this which gave rise to a belief the natives have that these ruins are connected by a subterranean passage with a salt-peter cave near San Buenaventura, twenty miles to the southward.

Correspondence.

BROWN HEMATITE CELTS AND WEDGES.

Editor American Antiquarian:

I have various nondescript objects, and two images, a fine display of mound cloth, currency, gambling implements, two of which are wrought out of hematite, the remainder of stone, one copper bracelet (from the Bolander mound, vide description of Bolander, Rechor enclosure). I recently secured a hematite "celt" several inches in length, which appears to have been broken by an oblique fracture. It is highly polished. This is the first wedge-like implement I have yet seen of this metal, except a minute gouge from Missouri. I will send you a drawing of it sometime in the future. Found on the Dodds locality.

S. H. BINKLEY.

Alexandersville, Ohio.

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SKULLS AND POTTERY FROM CAHOKIA.

Editor American Antiquarian.

I send you by express to-day, a box of specimens of relics and skulls. The skulls are from small mounds on the bluffs. They are probably not *old* Mound-builders, are more likely Indian, that is, late Indian. They are quite common here. I send these to you because they give the type in form. They are numerous in quite small mounds, or as intrusive burials in the larger mounds. The skulls which we find at the base of the large mounds are different. The skulls found with the pottery here are broader and shorter. We seem to have at least three types of skulls.

The pottery was taken from different mounds, some from small mounds on the bottom lands of the Mississippi. Some of the pottery seems to be of older date. One small vessel was probably very old. The bones found with it were so much decayed as to be only recognized by the fragments. There were no other relics where this pottery was found.

The pictograph known as the Piasa Bird is celebrated on account of a legend which was written about it, and said to have been taken from Indians of the locality. Marquette describes the picture minutely. It was a sort of dragon, and the

picture was on the rocks in the bluff at Alton until a few years ago. Many people still remember it and some have sketches and paintings of it. It was remarkable for being well-executed, and Marquette remarks of it, that "it was so well painted that few painters in France could excell the execution of it." Nearly all the other pictures given are still on the rocks as described.

Alton, 1885.

WILLIAM McADAMS.

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We have given the extracts from these old letters for the purpose of showing that there were three races buried in the mounds in Illinois, as follows: The later Indians, all of whom had angular, boat-shaped skulls; the Mound-builders, so-called, who had long skulls, but less angular, and an earlier race, which had broad skulls. The same distinction between the skulls has been recognized by the editor in the vicinity of Quincy, Illinois. There the broad-skulls were lowest down in the mounds and were evidently very old. The long-skulls were generally in the center of the mounds. The angular and boat-shaped skulls near the top of the mound.

The inquiry here arises whether the pottery-makers in the neighborhood of the Cahokia mound were the long-skulls or the broad-skulls. They seem to have been older than the boat-shaped skulls, and may have been even older than the long-skulls. A common supposition is that the broad-skulls were from the South and were pyramid-builders.

The pottery found near Cahokia has been associated with or compared to the pottery found in Missouri, Arkansas and Tennessee. Some of this pottery is very highly glazed and has a red color. Other specimens are coarser grained, darker color, have no glaze upon them, but are in the shape of animals and birds. Shall we say that there were two or three races of pottery-makers? In the neighborhood of Quincy there is very little pottery to be found, and that only in the upper burials. There is a great need of a closer study of these relics and skulls found in the mounds. It is useless to draw conclusions until there has been more careful study and thorough exploration.

The inscriptions on the rocks may have been placed there by any or all of these races. It is impossible to tell by which one. Schoolcraft has described animals which resemble this one called Piasa, as common among the Indians of the North, yet, according to W. H. Holmes, animals similar to this have been found inscribed upon the pottery. This subject also needs to be further studied.—ED.

A SCULPTURED BOULDER.

Editor American Antiquarian:

There is now in the cabinet of Beloit College a stone which I sent to the college thirty-five years ago. It is a boulder about eighteen inches in diameter, in the face of which had been cut a cup within a deep saucer. The cup is quite thin and perfect, and supported by quite a slender stem. The space between the outside of the cup and the inside of the saucer is so small and the work so perfect as to indicate very excellent and possibly difficult workmanship. It was plowed up in front of our old home, and was several feet down in the drift, with gravel and hard-pan, where it must have rested for a long period, for the surface above was originally covered with oaks—very large ones. There is now no mark on the stone indicating from where it came. I rolled it out, and, as stated, sent it to Beloit College. I have read considerable concerning our prehistoric races, but have found nothing descriptive of this kind of work.

JULIUS C. BIRGE.

St. Louis, Mo., September, 1892.

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This description of this boulder, with the mortar cut out of its hard substance, and finished with a channel outside, called a saucer, is interesting. But the fact which is now stated or made known for the first time, that this boulder was found several feet down in the drift, is very astonishing. Mr. Birge, the writer, was at the time a resident of Whitewater, Wis., but now lives in St. Louis, Mo.—ED.

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ANCIENT GRAVES.

Editor American Antiquarian:

You give a plate in your book of the forts on Big Harpeth. This I am quite familiar with, as I have been there several times; also the place described on page 216. I was there for nearly a week. I enclose a rough draft of it as it now is. The burial mound has been only partly explored. I found in one grave about one hundred pearls, perforated for beads. There is nothing said in the book about the rude graves. They are on the sides of the hills. The graves are like the ones on the lower lands, except there are from eight or ten to twenty loads of stone piled on top. Many of them are laid up quite regular, so as to form a roof. There are generally from three to six graves

under each pile. I know of several that have not been disturbed. In some cases they are laid at the edge of a ledge, so the hill forms its bottom and one side, while a thin, flat stone, set edge-wise, forms the other side, and another flat stone laid on top and at the ends completes the cist with the addition of the stones piled on top. In many of the cists I found a bone from a buffalo's foot. It was always the same bone. What does it mean? Was it a fetich or charm, or why did they always select the same bone? I noticed that the skulls were not all "short-heads." On Dr. Sawyer's place we found one grave in which were three "long-heads." The pottery was just the same as the others. The longest grave was nearly 17 feet long by 15 inches wide; the smallest $5\frac{1}{2}$ feet by 17 inches. They were all angles or points of the compass. Even each group were not all the same. How could they get two or three full-grown skeletons in a cist 15x30x12 inches? They seemed to lay in regular order, but sometimes we found one of the skeletons that seemed to have been put in the grave after the others. They were in a bundle and laid crosswise of the grave.

I have not seen any description of flint fish-hooks having been found in the United States. There have been at least three to my certain knowledge. Another flint relic has interested me. It is a broken dagger, chipped to an edge on either side, but the flakes through the central axis make a groove on either side, leaving the smooth part as ridges in the relic.

W. H. MONTGOMERY.

Mapleton, Cayuga Co., N. Y.



Editorial.

WILLIAM COPLEY WINSLOW.*

HONORABLE SECRETARY OF THE EGYPT EXPLORATION FUND.

The Rev. Dr. William Copley Winslow, born in Boston, January 13, 1840, was the second son of the late Rev. Hubbard Winslow, D. D., successor to Dr. Lyman Beecher as the pastor of the "Bowdoin Street Church" in that city. He graduated at the Latin school, and, as his father had become pastor of the Presbyterian church in Geneva, N. Y., he entered Hamilton College, Clinton, N. Y., graduating in 1862, at the semi-centenary of that institution. While in college he aided Joseph Cook and W. G. Sumner, then students at Yale, in founding the *University Quarterly Review*; he was also one of the two associate editors of the *Hamiltonian*. In 1862-63 he was on the staff of the *New York World*, and later was the managing editor of the *Christian Times*. In 1865, after graduating from the General Theological Seminary, New York City, he passed four months in Italy, devoting much time to the study of Roman archæology, upon which he subsequently lectured in various cities of the United States.

From 1867 to 1870, Mr. Winslow was rector of St. George's church, Lee, Mass. In November, 1870, Mr. Winslow removed to Boston. For four years he acted as chaplain for St. Luke's Home. Since its organization, in 1881, he has been executive secretary of the Free Church Association, he was for ten years prelate of St. Bernard Commandery of Knights Templars; he has served as historiographer of the Webster Historical Society; as a member of the executive committee of the Institute of Civics, and on various committees in the Bostonian Society, the New England Historic-Genealogical Society, and other associations, as well as in the diocesan convention. Dr. Winslow is a member of many societies, among them the New York Churchman's association, the Boston Society for the Promotion of Good Citizenship, of which he was a director, the American Statistical association, the American Historical and the American Economic societies, and the Archæological Institute of America. At the fiftieth anniversary of the American Oriental society, held in the Smithsonian Institution, April 21-23, 1892, Dr. Winslow was appointed on the committee to obtain records of the oriental antiquities sent to this country; an abstract of his paper on

* Taken from a sketch published in *Biblia*, February, 1893.

"Beni Hasan" appears in the proceedings of the society issued in November, 1892. A member of the council in the department of history and in that of philology of the Chicago Exposition, he is to read a paper before the Chicago congress in the section devoted to Africa, and also a paper before the woman's auxiliary congress.

Mr. Winslow's most important affiliations abroad are with the Egyptological bodies, as well as the Royal Archæological society of Great Britain (of which the late George Bancroft and Mr. Winslow have been the only Americans elected to honorary fellowship), the society of Antiquaries (Edinburgh), the Victoria Institute, of which he is honorary correspondent, and the congress of Orientalists. In Canada, Dr. Winslow is honorary correspondent of the Natural History society of Montreal, the most distinguished of the learned bodies in the Dominion. In this connection we may say that Dr. Winslow received, in 1886, LL.D. from St. Andrew's, the senior university of Scotland; and in 1887 the university of King's College conferred upon him the degree of D. C. L. He has also received D. D. from Amherst, L. H. D. from Columbia (centennial), Ph. D. from Hamilton, S. T. D. from Griswold (Iowa), and Sc. D. from St. John's College, Annapolis, at its centenary, "in recognition of the learning and ability with which he had conducted various scientific investigations."

In 1880, Dr. Winslow devoted four months to personal study and exploration of the monuments and sites of Egypt. He returned home deeply impressed with the importance of immediate and thorough exploration in that land. He had seen the obelisk destined for Central Park taken down in Alexandria; and he wrote to Sir Erasmus Wilson, who had previously removed its mate to the banks of the Thames. Miss Edwards informed him of the new society, the Egypt Exploration Fund, and its needs and purposes. In 1883 he became its honorary treasurer for the United States, and in 1885 its vice president for the same. In 1889 to these offices was added that of honorary secretary for the United States, the same that Miss Amelia B. Edwards held, and Prof. R. Stuart Poole, D. C. D., LL. D., now holds, for England. As reported in *The Academy*, Miss Edwards stated at a general meeting of the society in London, that "with the one single exception of the late Sir Erasmus Wilson, Dr. Winslow had done more than any one, not merely for the work of the society, but for the cause of biblical research and the spread of biblical knowledge in connection with Egyptology throughout the civilized world." Prof. Poole spoke in the same strain as his learned colleague.

The memorable visit of Miss Edwards to America in 1889-90 had its origin with Dr. Winslow, who says in his recent sketch, entitled "The Queen of Egyptology," "No single achievement in

my life is more gratifying to me than my successful effort to induce my friend to visit the United States. The invitation was a fitting *avant-courreur* to the welcome and success that everywhere were hers. Having written over two hundred notes to representative men and women in every department of life and work, I put out a leaflet upon her capacities to lecture and her topics, to which I appended the invitation signed by Whittier, Lowell, Holmes, Curtis, Warner, Aldrich, Parkman, Storrs," etc., etc., etc. Correspondence with our universities and institutes for lectures soon obtained an incomparable list of appointments for the accomplished woman to fill, to the delight and instruction of her intelligent audiences. The splendid gifts to the Museum of Fine Arts from the Egypt Exploration Fund should be seen by every visitor to the institutions of Boston. Through Dr. Winslow they were secured for the United States.

While Dr. Winslow does not profess to be, technically speaking, a specialist on Egyptology, he is a popular Egyptologist. We might assimilate the words of Miss Edwards, who said of herself, "My energies are diverted into the practical grooves of Egyptology, i. e., exploration, and the acquisition and analysis of all that is learned, discovered and translated." We can only remark that what the portfolio of the treasury is to the government in Washington, Dr. Winslow's part and place in the Fund folios is to that of the Navilles, the Griffiths and the Newberrys, who dig and delve, translate and sketch, in the land of the Nile. His triple office represents, as vice president, honor; as secretary literary and other work, and as treasurer, the raising of money to explore and to publish the results.

Among Dr. Winslow's more important Egyptological writings are: "What says Egypt of Israel?" "The Store City of Pithom," "Explorations at Zoan," "A Greek City in Egypt," "The Identification of Avaris," "The Ritual of the Dead," and "The Tombs at Beni Hasan." His translations of the Statue of Rameses II. and of the Column from Ahnas (the Pi-Beseth of Scripture), have been published. It is to be hoped that his life may be spared to contribute much to the spread of the popular interest in Egyptology and all the kindred branches of archæology.

The following from the columns of *The Churchman* of New York will illustrate Mr. Winslow's popular and easy style:

It has been said of the scenes delineated in the rock-cut tombs of Beni Hasan, situated on the east bank of the Nile, about 170 miles south of Cairo, that "each wall-painting is an illustrated page from the history of social science between four and five thousand years ago." This is essentially true, as very many of the tableaux represent, usually with explanatory inscriptions, the craftsmen or artisans, such as the glass-blower, the potter, the carver, the jeweler, the painter, the dyer, the weaver, the cabinet-maker, the mason and the shoe-maker, plying their trade

and surrounded by the appliances of their work. The foreigners, too, bear their distinctive racial characteristics; station and rank are clearly defined; sports and games are in progress; vivid drawings of the domestic animals and wild beasts of the chase are accompanied by texts of nomenclature; indeed, the birds, fishes, fruits, flowers, plants and trees of the Nile Valley all seem to have been depicted on the mural canvas; so that men in their social and daily surroundings of 2500 B. C.—how they looked and lived, worked and played, went to the house of mourning or of feasting—are placed on exhibition, as it were, for the nineteenth century archæologist and tourist to scan and historically appreciate.

Unfortunately, these precious memorials of the period contemporaneous with the earliest Hebrew patriarchs are being defaced by the hand of the iconoclastic Arab and the tourist seeker for "antiques," and large flakes of painted plaster are constantly falling from the already broken walls and mutilated tableaux. The Egypt Exploration Fund, in recognition of its duty to make full and accurate transcripts of these records and scenes, assigned this task to a special department of its work called "The Archæological Survey of Egypt," and the first volume of the results therefrom is now passing through the press. Of the thirty-nine tombs, whose apertures range along the high cliff looking down upon the Nile, twelve are inscribed; and of the twelve, eight are painted. There are 12,000 feet of colored decorations. The period represented is that of the eleventh and twelfth dynasties, and the personages for whom the inscriptions were made were the nomarchs (rulers of the nome) or petty princes who owned allegiance to the reigning pharaoh and yet were absolute in their local government. They held a miniature court, with retinues, soldiery, scribes, priests and men of letters. In these tableaux appear facial characteristics, affording a valuable ethnographic study, with biographical material that is not only genealogically interesting, but casts light upon the particulars of local government and rights in ancient Egypt.

Mr. Winslow, from his official position on the Fund and on the archæological and philological committees of the Columbian Exposition, will be able to have some of the sketches, photographs, etc., of the tableaux at Beni Hasan on exhibition at Chicago.

Archæological Exhibits at the Fair.

JAMES DEANS AND HIS COMPANY OF INDIANS.

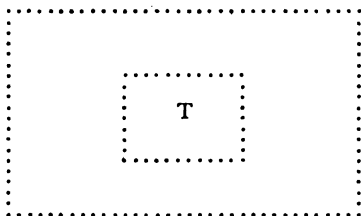
Our correspondent, James Deans, is a massive Scotchman, as rugged as his native climate, 65 years of age, with iron gray hair and beard. Forty years ago he was sent by the Hudson Bay company to Fort Victoria, on the south end of Vancouver Island—the most remote of all its trading posts. He made the journey by ship around the cape, and ever since has been studying the natives. In all these years he has never been east of the Rockies, but is widely known as a geologist, ethnologist, archæologist and magazine writer. A year ago Dr. Boas went all the way from Washington, D. C., to Fort Rupert, Vancouver Island, to ask Mr. Dean to prepare an exhibit for the Columbian Exposition at Chicago.

In March, 1892, Mr. Deans set fifty Indians at work reproducing the ancient dwellings of their people. These dwellings have practically been out of existence since the beginning of the century, but one was found at Skideghat, Queen Charlotte's Island. It was taken down and is now at the World's Fair grounds. It is made of red and yellow cedar, and is 29x28 feet, with a totem post, forty feet high, which is covered with hieroglyphics clear to the top. This totem post bears the crests of the families which have occupied the house and stories of mythology clear back to the time "when chaos reigned and the god Ne-Kulst-Lass, in the guise of a raven, brooded over impalpable darkness until, after eons of ages, he beat down the darkness into solid earth," as the totem post has it. Mr. Deans has translations of these stories and crests, and is probably the only man in the world who can put them into English.

The Indians with Mr. Deans at the World's Fair are Quackuhis from Vancouver's Island. Mr. Deans says they are probably the result of an ancient mixture of the Japanese and the Eskimos, and their appearance justifies the guess. Several tribal subdivisions of the Quachuhl nation are represented—Fort Ruperts, Nimkishs, Koskimos and others. They are probably 2,000 strong, all told, and are prosperous and semi-civilized, as Indians go. In the spring the women plant potatoes and the men hunt and fish. Bearskins bring \$15 to \$17, and other big game is plenty. A summer's work in the salmon canneries brings them \$300 to \$400. In the fall they gather berries and dry them. Christmas with them begins as soon as the berries

are dried and lasts till the first of February, when the hunting begins. They are Methodists, Presbyterians and Episcopalians. None of them are Roman Catholics. They left the island one week ago and have been traveling ever since.

It appears that in the old days a man named Kiew was the mint of the nation; in other words, the man who made the money by consent of the tribe. It was in the form of thin copper squares with the letter T on them, like this :



Now, these copper squares were also used for personal adornment by dignitaries, and ranged in size from $\frac{1}{2} \times 1$ inch to 24×18 inches, the first being worth two or three cents and the last \$500—using the present American standard of value. A curious thing in this connection is that the T on the copper means the cross, and is the same as the Greek letter Tau; yet these people had no alphabet, but used hieroglyphics, Where did that letter T come from?

The Indians have begun the work of putting their village together. It will be one of the steps in the "March of the Aborigine to Civilization, as Prof. Putnam calls his ethnological and archæological exhibition. Civilization is typified by the government school-house, which is at one end of the exhibit. Next comes an Esquimaû village, and, in order, Crees from Manitoba, Penobscots from Maine, Iroquois from New York, Quackuhls, Chippewas from Minnesota, Winnebagos from Wisconsin, Sioux, Blackfeet, Nex Percés and other tribes from the far west. Then come South American natives—Arrawacs and Savannah Indians from British Guinea and natives of Bolivia and other States. Next will be the ruins from Yucatan, representing an unknown people. In the buildings will be shown relics of all kinds of the mysterious past. The idea is to give a glimpse of the peoples of the Western Hemisphere as they were when Columbus discovered it.

A YUCATAN EXHIBIT.

One of the most interesting displays that will be seen at the fair will be that made within the "Ruined Palace of Mitla" by the Department of Ethnology. Prof. Edward H. Thompson, who has been consul at Merida for eight years, has prepared papier mache molds of the ancient sculptures found in the deserted cities of Yucatan, and thirty cases of these molds have already arrived at the park. They will be installed as soon as the building is completed. The ruins of Uxmal will be reproduced on an



extensive scale, and among them will be a fac-simile of the temple and figure of the god "Kukulkan," or the great feathered serpent. The body of the serpent is wrought in the stone-work all around the building, and this will be represented entire. The original materials were principally marble and coarser varieties of limestone, and the work shows that the ancient Yucatecs possessed a great deal of skill in mechanical workmanship, though their industrial arts were poorly developed. One of the finest

reproductions by Professor Thompson will be that of an arched gate of the ancient palace of Labna, which was literally chopped out of the jungle.—*Chicago Inter-Ocean*.



ARCHÆOLOGICAL NOTES.

THE FUNERARY CHAPEL OF THOTHMES I. DISCOVERED. Under date of April 25th ult., Dr. Winslow has an important piece of news privately from Dr. Naville, through the London office. While excavating at Dir-el-Bahari (Thebes) for entrances to the tombs or subterranean chambers in that historic spot, he found a flight of steps leading up to a great altar of white stone, behind which he disclosed the funerary chapel of Thothmes I. The altar was probably placed before the tomb by Hatshepsut, the renowned queen upon whose deeds and famous expedition to Punt Miss Edwards lectured to American audiences. Dr. Naville considers an altar of this sort as something unique in connection with funerary chapels. Doubtless she held her

father, Thothes I., in such reverence that this altar was placed conspicuously before the chapel. Her selfish treatment of her brothers is a matter of history.

EGYPT EXPLORATION FUND.—The annual circular for 1893, issued March 25th, contains full information as to the past and present work of the Society, its publications and how to obtain them, and other knowledge important for all our readers to possess. Dr. Winslow, 525 Beacon street, Boston, gladly sends these circulars on request, and the editor of this magazine, an honorary secretary for Illinois, is willing to furnish information respecting the work and needs of the Fund.

ARCHÆOLOGICAL REPORTS.—Beginning with 1893, the Egypt Exploration Fund is to yearly publish "Archæological Reports" of archæological intelligence fresh from Egypt—notes, notices of books, etc., etc. Report No. 1 may be expected in the summer. This periodical may be considered as an *avant courier* of the elaborate volumes of the season, so that official intelligence of the "results" may promptly reach subscribers to the Fund and others who may take the Report.

THE American Numismatic and Archæological Society is, with one exception, the oldest society of the kind in America. It was founded in 1857, met in a room of its own in 1859, was reorganized in 1864, incorporated in 1865, and issued a journal from 1866 to 1870. This journal was published as a quarterly by the Boston Numismatic Society until 1890. It is now published by W. T. R. Marvin, of Boston, assisted by L. H. Lowe, of New York. Dr. Charles E. Anthon was corresponding secretary in 1867. This society's cabinet and library is large and valuable, and contains the following medals: Charles Edward Anthon, Abraham Lincoln, Daniel Parish, Washington, and the Centennial Anniversary of the Evacuation of New York, besides the membership medal. The proceedings from 1888 to 1892 have just been published. These contain a history of this society and list of papers read from the twenty-first to the forty-seventh meeting. One of these, namely, "Stone Idols of New Mexico," a paper by Hon. L. Bradford Prince, in April, 1888, should be published, as it would undoubtedly throw much light upon the archæology and mythology of that region. We congratulate the officers of this society on the success which has attended their efforts.

PREHISTORIC HOUSES.—The house architecture of America in prehistoric times is a subject which is difficult to describe. Fortunately, however, there will be an opportunity of studying the subject during the World's Fair. There will be an exhibition of the different modes of constructing houses. Several types of Indian habitations that have passed out of use will be reproduced under the direction of Miss Alice C. Fletcher, who is especially familiar with the Dakotas. The Mexican photographs and drawings of Indian houses will be furnished by Mrs. Zelia Nuttall. She has discovered in a library in Florence some precious old manuscripts of the time of Cortez, which contain pictures of Mexican houses. Edward H. Thompson, United States consul to Merida, Yucatan, intends to bring to the Exposition a native Maya house, with complete furnishings, including a Maya family and a native potter, who will make his vessels during the Fair. Mr. Thompson has for many years made a study of the ancient architecture of that country, and for six years past has done hard work in the jungles and among

the massive ruins. He has recently finished molds of the portal of Labna. There will be no specimens of the houses of the Mound-builders, but a model is to be made of the famous Turnet group of earth-works in Ohio, where Prof. Putnam has personally conducted explorations for ten years. Many objects have been discovered there which show a more advanced state of art among these ancient people than is generally supposed. The large collection, now in the Peabody Museum, taken from these earth-works will be shown at the Exposition. About a year ago Mr. H. Jay Smith fitted out a party, engaged the most competent guides, and spent several months of hardest work in the cliff villages. He not only thoroughly explored the region and hamlets, but made maps, measurements and pictures of them. He had an expert photographer with him who secured fine views of many places never seen before, a taxidermist who preserved animals to be found thereabouts, and an artist, A. J. Fournier, who made hundreds of sketches in oils, water-colors and ink. The results of this expedition are very valuable to science and will be shown at the World's Fair. The unique building which will hold the mummied bodies, pottery and all relics found in the ruins of the cliff-dwellings is now almost completed and represents the curious mountain called "Battle Rock." It is 200 feet long, high in front, but sloping irregularly to the ground. It is near to the facsimile ruins of the beautiful stone palace of prehistoric Yucatan which Mr. Thompson came to this country to erect, and near the Forestry Building, and will form one of the most attractive parts of the department of archæology and ethnology.

SIMIAN OR APE-LIKE MAN.—Prof. E. D. Cope, in the April number of the *Naturalist*, has an article on this subject. He says archæology, apart from anatomy, is a poor guide in the field of human ancestry. The closer association of man with the apes is based on various considerations. It is highly probable that the homo is descended from some form of anthropomorphia, either the eocene lemuridæ or the simiadæ. He refers to the man of Spy to prove that there dwelt in Europe, during paleolithic times, a race of men which possessed a greater number of simioid characteristics than any which had been discovered elsewhere. The important discovery in the grotto of Spy of two skeletons, almost complete, served to unify knowledge of this race, which had previously rested on isolated fragments only. These skeletons proved what had been only surmised before, that the skeleton of Neanderthal, the lower jaw of Naulette and the crania of Cronstadt belong to one and the same race. The simian characters of these parts of the skeleton are well known.

PALEOLITHIC SPECIMENS.—Mr. Ernest Volk has been working in the Delaware Valley, making a collection illustrative of the earliest existence of man on the Atlantic side of the continent. He has explored the ancient argillite workshop discovered a few months ago, and has made a geological and archæological study of the place to ascertain if it belongs to the gravel period or to that immediately following the deposition of the gravel and before the advent of the jasper-using people. This workshop Mr. W. H. Holmes refers to in his article in the *Journal of Geology* to prove that all the so-called paleolithics are rejects from modern Indian workshops. The relics from this workshop will be on exhibition, and can be compared to the argillite relics which Dr. C. C. Abbott has taken from the gravel-beds

at Trenton, N. J. It will probably be ascertained whether there are any finished relics—such as were used by the Mound-builders and the Indians of the tertiary age—to be found among the argillite specimens. If they are all rude specimens we see no reason why they should not be called paleoliths, but if they are mingled with pottery and other relics, some of which are polished and finished after the ordinary type of modern relics, then they may properly be called rejects. The archaeologists of this country and Europe will undoubtedly study these rude specimens with as much interest as they will the finished specimens from the cliff-dwellings.

ANCIENT SYRIAC MANUSCRIPTS. Close to the announcement of the discovery in the monastery at Mount Sinai, by Prof. J. Rendell Harris, of a very ancient palimpsest manuscript of Syriac gospel called the Curetonian, there comes another of the discovery of a similar palimpsest in the same monastery by two lady travelers, which most remarkably supplements the Curetonian. These Syriac gospels are translations from the old Greek and are the earliest manuscripts of the gospel extant.

REMINERS OF COLUMBUS. Cristobal Colon de la Garda, a direct descendant of the celebrated discoverer Columbus, is now in this country and will be present at the World's Fair. (His portrait appears in the *Scientific American*, April 22, also a picture of the standard of Castile which Columbus raised when he landed on Watling Island.) Models of the various vessels in which Columbus and his company sailed, have also arrived. The great naval display at New York will really introduce the admiral who first navigated American waters. The paintings and portraits which have been discussed during the last year will be sought for by the visitor at the World's Fair. Still it is a question whether we are actually to be brought into contact with the great man by any of the reproductions. It seems more difficult to get at historic antiquities which will fairly represent the age and be pronounced as genuine than it is to get prehistoric antiquities which will remind us of the age which preceded the time of Columbus. The paint, the varnish, and the modern dress will hide in one case what we want to see, while the rude stone relics and native costumes and dusky faces, in the other case, will be very like the originals which were here when the continent was discovered. The historic and the prehistoric will doubtless be compared, but we imagine that the prehistoric display will be more satisfactory.

BOOK REVIEWS.

The Journal of Geology. Vol. 1, No. 1, January-February, 1893. Chicago: The University of Chicago, 112 p. Editors of this journal are T. C. Chamberlain, R. D. Salisbury, J. P. Iddings, R. A. F. Penrose, Jr., C. R. Van Hise, C. D. Walcott, and W. H. Holmes.

The first number contains the following papers, which will be of interest to archaeologists: "Are There Traces of Glacial Men in the Trenton Gravels?" by W. H. Holmes; "Distinct Glacial Epochs and the Criteria for Their Recognition," by R. D. Salisbury. We are glad for our part that archaeology has at last found its place in the studies of the geologist, and that we are to receive the assistance of the university as well as the geologist in solving the problems which have so long been before us.

It is evidently not a standard of literary criticism that the professors of the university are setting up, but rather an organ, in which they are to judge the works of others—an organ in which great and broad subjects shall be discussed, with the idea of apprehending in the end the various processes through which the earth has passed while it was being fitted up for the abode of man. Honest investigation is to be welcomed wherever it appears, but the "search lights" furnished by such men as are brought together by this journal, are more than welcome. They are full of hope for the future. We congratulate the editors that they are not dependent upon a meagre subscription, and the life of the journal is not precarious, for the funds of the university are ample and are committed to its support. Will the journal recognize and give credit to the pioneers and forerunners in both departments, geology and archaeology? We think it will, and so give it our hearty congratulations.

Pagan and Christian Rome. By Rodolfo Lanciani, author of "Ancient Rome in the Light of Recent Discoveries." Boston and New York: Houghton, Mifflin & Co. 1893.

The transformation of Pagan Rome into Christian Rome was gradual and continued through three centuries, and culminated in the time of Constantine the Great. The result was that many of the specimens of art and architecture, as well as the articles of convenience and domestic use, which were common in pagan times, were appropriated by the people after the conversion to Christianity to sacred purposes. The author of this book takes pains to describe those objects which have been discovered at various times, which illustrate the change from paganism to Christianity. This would be a difficult task to any one except to a learned, skillful, discriminating archaeologist like Prof. Lanciani. The book is published in the same style with the former work, which is called "Ancient Rome," which has been reviewed. It is bound in imitation of vellum, with gilt letters, and a covering of red cloth. It abounds with minute descriptions of buildings, statues and other objects, with cuts to illustrate them. The history of archaeological discovery in Rome forms the chief feature of the book. This history dates back of the Christian era and comes up to the present time. Professor Lanciani has an advantage over others in writing it, in that he is an archaeologist who has had his residence in that city for a long time. He is familiar with all the discoveries of recent date and has studied books enough to know the discoveries of early times. It is interesting to look over the volume and pick out the various portraits, paintings, inscriptions, statues, specimens of architecture and art, and ascertain about the age to which they belong and the date at which they were discovered. There is a bronze statue of St. Peter, which may belong to the fourth century, or more likely to the comparative recent age. There is a tombstone of St. Paul, with an inscription which undoubtedly belonged to the fourth century, and portrait heads of the two which are said to be the work of the second century. These do not bring us back exactly to the Apostolic times, but they certainly bring us near enough to the personages to make us feel that they are very life-like. St. Paul was executed on a spot where a memorial was raised in the fifth century, whose foundations were discovered in 1867, and a mass of coins of Nero near by in 1875. These discoveries make St. Paul as real to us as the Roman Emperor Nero, and so dissipates all doubts in reference to the genuineness of St. Paul's writings in the New Testament.

These accidental lights which are thrown upon the early days of Christianity are very convincing, and help us to realize the power Christianity had in moulding the art and affecting the philosophy and religion of ancient Rome. Scholars have never subscribed to the slurs of such men as Robert Ingersoll. Only the ignorant accept his opinions. Not only for the apostolic age is there new light from the monuments, but the days of Constantine are also illuminated. The tomb containing the bodies of Constantine and his son was found in 1458. The bodies were wrapped in a golden cloth, sixteen pounds in weight, inside of a coffin of cypress wood, overlaid with silver, which weighed 832 pounds. In 1544 the body of the beautiful empress was found, lying in a coffin of red granite, clothed in a state robe, worked with gold, and near by it caskets of solid silver full of goblets and bottles, gold rings, brooches, emeralds, pearls and sapphires, which were of classical origin, and may have sparkled on the breasts and foreheads of the empresses of bye-gone days. The author says the reader must not believe that such discoveries are of doubtful credibility, for they have taken place in all centuries, the present included. The book is not so interesting for consecutive reading as it is for the choice pages, which so surprise us with their narrative of facts and startle us with their discoveries.

The City State of the Greeks and Romans. A survey introductory to the study of Ancient History. By W. Warde Fowler, M. A. Fellow and sub-rector of Lincoln College, Oxford. London and New York: Macmillan & Co. 1893.

That form of state whose most striking feature is city life will interest many persons. The Greeks and Romans conceived of their state something like this. Athens, Sparta, Syracuse, Corinth and Rome were cities which drew their subsistence from a small territory, but the city was the state, the territory surrounding was nothing.

The way in which this condition of things arose is the first inquiry of the author. Before the final settlement on the land, kinship was the tie that held together the main stalk. After the settlement village communities arose. The land was held by the community under a lord, but government was in the hands of the council. There was, in the village community, a common wrrship. Thus the city-state grew out of a clan-life. There was a civilization before there was a city, but the civilization of Greece and Rome increased the power of the city. It was not the artificial result of a compact between individuals, but was a natural growth, rising out of the life of a village into that of the city state. Man rises from the ideal of material supply to that of moral and intellectual advance, to what Aristotle calls "good life." To Aristotle there was no higher form of social union possible than that of the city state. There is a great deal of force in this view, especially when we consider the contrasts between the hard toil in the rural districts and the great wealth and luxurious life in the larger cities. Still it is not practical for any republic, and especially a republic in a large country. The first form of government in Greece was that of kingship. The king was of divine ancestry, and carried the sceptre. He was a sacrificer or a priest, commander of the host and was a judge. But such kingship could not continue. An aristocratic government followed this one of kingship. The democracy grew out of aristocracy. As the people improved in circumstances and in intelligence they assumed the government. The city state declined.

Such is the course of thought contained in this book. It is an interesting subject and has been well treated by the author, especially in the first part of the book.



SCULPTURED IMAGE, PANTALEON, GAUTEMALA.

THE
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THE AGE OF THE MOUND-BUILDERS.

BY T. L. GAERTNER, LL.B.

The question has frequently been asked, and archaeologists give various answers, whence came this great semi-civilized people who erected the mounds found in the valleys of the Mississippi and its tributaries? Whither did they vanish? What objects did this primitive race have in view when they constructed these mounds and fortifications at a period the antiquity of which cannot be accurately estimated? Archaeologists, as well as other specialists, are agreed that a partially civilized race of people erected the mounds found in this country. (Many of these remains still stand as left by the original occupants, save only the change and decay which time itself produces). All are looking toward early discoveries, which must sooner or later occur, showing from whence this peculiar race, the "Mound-builders" came.

It is a common opinion that at one time the United States and British America were in a tropical latitude, and at that time a wild savage race roamed through the primeval forests, along with the mastodon and mammoth; but at a later period a gradual cooling off occurred at the poles and extended toward the equator, thereby changing the tropical climate to a frigid one, and causing the then existing animals to migrate into southern latitudes. The human population followed the animals, and filed a portion of the Mound-builders' territory, and left their rude weapons as tokens of their presence along the edge of the great ice sheet, which extended as far south as the Ohio River. The date of this is unknown, but it is evident that this gradual cooling off or great cataclysmic wave occurred over the whole of the northern zones of America, Europe and Asia, thereby subjecting them to the desolate waste of the glacial action. This accounts for the presence of the carcasses of tropical and semi-

tropical animals entombed in polar ice in Russia and Siberia, animals with their skins and flesh even intact; the bones of mastodons and other animals found in the states. All these facts are mute reminders of the earth's wonderful and sudden change which occurred ages ago, changing this latitude from a tropic to a frigid clime, and again from a frigid to a temperate climate. But along with these changes the population of America passed through different ages, to which the names of paleolithic and neolithic have been given. The implements which have been found in the gravel beds may have been dropped there subsequent to the time of the mastodon, for they are not often associated with the bones of these extinct animals. Still the discovery of neolithic relics near the mastodon bones in the swamps of Missouri give the idea that these animals survived long after the glacial period. This does not fix the date of the Mound-builders' first appearance, but merely indicates the succession of the population. The Mound-builders may have lived during the disturbing epoch to the south of the glacial region and followed up the retiring sea of ice until they reached the chain of the Great Lakes, gradually extending their dominion northward, even as far as Michigan and Wisconsin, making at the time only two classes of people and two types of aboriginal life.* It is supposed that at some time subsequent to the glacial period, and perhaps quite late in the prehistoric age, they were met by the race of hunter Indians who had crowded in between the ice regions and the Great Lakes and for a long time occupied the forests of the north. During this time the Mound-builders were prominently given to agriculture and were not warlike, but lived peaceably in their established settlements and built their villages in the fertile valleys of the Ohio and Mississippi Rivers. By some, these Mound-builders have been closely identified as a people resembling, if not related to, one of the ancient Mexican races, the Nahuas, whose origin is said to have been at the east, and their migration to the west. The date of the extension of the Mound-builders' territory to the northward, or even of the supposed migration of the Mound-builders to the southward is unknown. A little light may be obtained if in addition to the relics of the Mound-builders, many of which are found near the surface, we take into consideration the legend which existed among many of the Indians of the conflict between them and the race which preceded them. From this legend we

*The earlier race has been by some considered to be identical with the Eskimos, who have always been fishermen and have also, so far as known, been the residents of an ice region. These Eskimos are said to have been formerly located farther to the south and to have migrated northward at some unknown period. They are regarded by all ethnologists as a distinct race from the Indians, and yet are indigenous in America. The Mound-builders were certainly distinct from the Eskimos, and must have originated from an entirely different source, for they are unlike them in all particulars. The Indians known to history also seem to be distinct from either, and probably also came from a different quarter. This, then, would establish three types of aboriginal life and three distinct races on the same soil, the one representing the paleolithic fishermen, the other the neolithic agriculturists, and the last the ordinary flint-using hunting tribes.—Ed.

get a scant, and of course, not perfectly trustworthy account of this ancient race; it is the earliest information we have and is very plausible. It is noteworthy that this tradition does not claim the Mound-builders to have been the Indians' progenitors, but, on the contrary, pronounces them a distinct race of people from the Indians. The tradition of the Delawares is that ages before, they had been created and dwelt upon the shores of the great sea in which the sun sank at night (the Pacific). That many ages before the white man came, they journeyed eastward in search of a favored land of which their wise men told them, at or near the Father of Waters, they had come into contact with the Iroquois, destined to be for ages their chief enemy. The Iroquois, like themselves, were journeying eastward. Upon the other side of the great river they came upon a powerful race, who contested their crossing that stream, but by joining forces with their former enemies, the Delawares overpowered the strange people and then passed through their domain to the Atlantic. The ancient tradition of the Delawares says that their enemy were a great nation and had many forts and temples, and they called themselves Allegewi. So the Delawares gave to the stream which marked the eastern boundary of the strange race the name of Allegewi-hanne (hanne meaning stream), Allegewi-hanne becoming by easy linguistic evolution Allegheny, and to-day we have perpetuated the name of this mysterious race and perhaps the oldest of American words. It is claimed by some that the ancient Nahuas of Mexico were the Mound-builders of the United States. But we have gone one step farther and adduce evidence showing that the ancient Nahuas afterwards became incorporated with the more ancient Mayas, though they dwelt in the land of the Mound-builders; the Nahua exodus from the Mound-builders' realm having occurred about the year A. D. 241, or sixteen and a half centuries ago. These facts are not arrived at by a wild speculation in the past, but by careful studies and computation upon the basis of ancient Mexican data and dates as to the early migration of the Maya races.

A considerable degree of contrast can be recognized in the skulls which have been found between the Mound-builders and the American Indians. Mr. Wm. McAdams, of Alton, Illinois, who has been collecting Mound-builders' relics for the World's Fair, lately secured about fifty well-preserved skeletons in sepulchral mounds near Alton. The skulls are entirely unlike Indian skulls, showing much fuller development. A remarkable feature is the hyoid, or tongue bone, which is differently shaped from that of any known human race. The Mound-builders also had different shaped skulls from the northern Indians. We can readily distinguish a Mound-builder's skull; and if we follow the explorers as they pass southwestward, we find a constant increase in the size and conformation of the crania of the Mound-

builders, until we find, near the Gulf of Mexico, that the race had reached the zenith of its civilization.

In trying to get a vague idea of the Mound-builders' objects and antiquity, we must judge from their remains as found scattered in the territory formerly inhabited by them. (Approximately the ancient history of Rome was repeated on this continent, civilization at one time had to vanish before the approaching hordes of barbarian Indians.) It seems, as time passed by, they gradually extended their surroundings with the increase of their population outward toward the north, northeast and northwest until the crisis was reached, when they were overpowered, which was followed by emigration southward. Judging from their remains, the Mound-builders had achieved a considerable degree of civilization before they were overcome by their enemies. How many years and lives they sacrificed defending their possessions is impossible to estimate at this date. They must have remained a very long time here, and if we can place any reliance upon what we find, the Mound-builders devoted the greater part of their time to agriculture and to the construction of their temples (mounds); they also erected fortresses, which were used for the protection of their people against the predatory warfare of the hostile tribes, or even, it may be, against the incursions made by other Mound-builders.

In regard to the mounds, there has been much speculation; they are usually divided into sacrificial, sepulchral, temple, symbolical and signal.

The sacrificial mounds exist mainly in Ohio, and it is strange that the sacrificial deposits on such mounds do not disclose a miscellaneous assemblage of relics; for from one altar hundreds of sculptured pipes chiefly occur; on another, pottery, copper ornaments, stone implements; on others, calcined shells, burned bones; on others no deposits have been discovered.

The sepulchral mounds are numbered by the thousands. They evidently served for the Mound-builders the same purposes as tomb-stones do to-day, and for the later race served also as burial places and monuments, and so may be ascribed to both races.

The temple mounds are truncated pyramids, with paths or steps leading to the summit, and sometimes with terraces at different heights. Among the most noted of these is Monk's mound, in Madison County, Illinois, near East St. Louis. This served a double purpose, temple and sepulchral mound. The Mound-builders buried a great number of their dead at its base.

The symbolical mounds consist of gigantic bas-reliefs formed on the surface of the ground, representing men, animals and inanimate objects.

The signal mounds, as well as their fortifications, were for protection against an invading enemy.

The antiquity of these mounds is shown by their relation to the primeval forests. The Mound-builders were a settled people, their enclosures and fields were cleared of trees, and remained so until deserted. When discovered by Europeans these enclosures were covered by gigantic trees, some of them 800 years old.

The stone and bone implements from the mounds, in their shape differ little from those of Europe. The hatchets and knives are not only made of flint, but also of obsidian, and other hard stones. Copper was the chief metallic substance out of which they made implements. It was obtained from the shores of Lake Superior, where they carried on extensive mining. They also made numerous articles out of pottery.

The most important article of all has been found in Ohio in the form of a cross, similar to that which was common in Troy and the far east. Occasionally tablets with symbols thereon are found in these mounds, which some day will be interpreted, thereby opening up a new scientific territory.

Such relics have never been found in the hands of the Indians, nor has any cult been recognized among them which would demand them for symbols.*

The conclusion which we reach, from all this, is that there were three classes of people, three periods of occupation, that the Mound-builders occupied the middle period and established what might be called the Mound-builders' age.

*An argument has been founded on the resemblance between some of the stone graves found in the depths of the pyramid mounds, especially that of Etowah, Georgia, and the stone graves found near the surface in Illinois, to prove that the Mound-builders of the south were the same as the Shawnees of the north, but another argument has been recently constructed in order to prove a different point which completely upsets and overthrows this. If the Shawnees of the north were the same as the Mound builders of the south, how does it happen that the workshops which have been found on the very territory occupied by the Shawnees in New Jersey and on the Delaware river should be filled with so many extremely rude relics. These workshops have been quoted as proving that the so-called palæolithic relics of the Delaware gravels were nothing but "rejects" of the Indians. But the finely carved pipes and nicely inscribed copper plates in the Etowah mound have also been ascribed to the same Indians. Thus the relics of the earliest and rudest period have been confounded with those of the highest and most advanced period by means of the theory, which makes the Indians the only prehistoric inhabitants of the continent. - Ed.

BLACKFOOT STAR MYTHS.

BY R. N. WILSON.

II. THE SEVEN STARS.*

Seven boys, in company with their elder sister, were living in a single lodge a long distance from the camp of their people. One day when all the boys were going out to hunt, the youngest, whose name was Okena, told his brothers that he would stay behind and watch their sister, for, said he, "I have noticed of late that she does not eat buffalo meat like us, and I am curious to know what she does eat." So the six brothers went away to hunt and Okena laid down in the lodge and pulled his robe over his head, remarking to his sister that he was very sleepy. But he only feigned sleep, for he had a little hole in his robe, through which he watched every movement of the suspected one. Late in the day the woman, who had been cooking some buffalo meat, called to Okena to get up and eat, but he made no answer. A second, third and fourth time she called to awaken him, each time louder than before. But Okena still breathed regularly and heavily, so that his sister was satisfied that he indeed slept soundly. She soon began to talk to herself, loud enough for the boy to hear her say, "Good, let him sleep well, for he will not have many sleeps more." The woman then went to her parfleche bags, and from one extracted some human meat, which she ate. After that she picked up her robe and spread it, dressed side up, upon the ground, on which she had drawn a number of people's heads. She looked at these drawings, saying, "Here I will put the eldest one's head, here the next, two more I will place in that space, two on the top, and the head of the young sleeper there, who has a big head, I will put in the middle." Okena heard and saw all this, and it caused his heart to rise high in his breast with fear, so that it was much to his joy that he heard in the distance the shouts and laughter of his brothers, who were coming home from the hunt. The woman rolled up her robe and put it away. Okena soon got up, yawning and blinking like a newly awakened boy. He walked out to the front of the lodge and then went to meet his approaching brothers, who were still some distance away. When he met them he said: "Oh! my brothers, I have found out why our sister does not eat buffalo meat, she eats people meat. I saw her and I heard her talk about killing us for food. She has painted

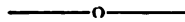
*The Great Dipper in the Constellation Great Bear.

upon her robe the heads of all the people she has eaten, and I saw her choosing the positions on it for our heads. My head, she says, is big, and it is to go in the middle." At this bad news the brothers had a talk, during which the eldest said: "We will not believe ill of our sister without cause, we will see." Then they all went on and entered the lodge. The hunters told the woman to go and bring in the meat they had killed, describing to her the place where they had left the carcass. She said, "No, you go and get it yourselves; you are many." But they all declared that they had walked far enough that day and were too tired, so she wrapped her robe about her and went. This woman was wise. She suspected that the brothers had a motive in wanting her to go. So instead of going after the meat, she only went a short distance in that direction and hid herself in some bushes, where she could watch the lodge and see what would take place. As soon as their sister disappeared the boys looked through her parfleche bags, and finding that one contained meat which was that of a person, they threw it into the fire and burnt it up. The seven brothers then decided to run away from their sister, who was too dangerous a person to live with. So they all ran out of the lodge and away over the hills as fast as they could run. Okena was fleet-footed and kept on the lead. The woman, who, of course, saw them run away, left her hiding place and entered the lodge, where she saw her meat all burning away. She cried, "Oh! how you have injured me, Okena." She picked up a large wooden root digger and pursued the fleeing boys, shouting as she ran: "You cannot escape, you cannot escape." The boys saw her coming and heard her angry words, which made them run faster, but the woman, who was not an ordinary person, ran faster than they did and would have overtaken them but for a big tree to which the boys ran. This tree was very high and had many branches. The boys reached it and all climbed up into its limbs as far as they could go. Okena, who was the first to get to the tree, climbed the center and highest branch.

The woman arrived soon after them and sat down to rest upon a log near the foot of the tree. She looked up at her brothers and said, "You are all where I want you now; you cannot escape me, you will pay for the injury you have done your sister." After she had rested a while she began to climb the tree, root digger in hand. She reached the boy who was nearest the ground, killed him with her stick and his body fell to the earth. The other boys shot many arrows at her, but could not hit her. She climbed higher in spite of the arrows and killed the second boy, and though they all shot well-aimed arrows at her, she killed another and another till six bodies were lying on the ground beneath the tree. Okena, who was now the sole survivor, had only four arrows, but they were magic arrows. As his

sister prepared to come after him she said, "Okēna is about to pay for the injury he has done me this day." Okēna feared his sister; he had seen how harmless his elder brothers' arrows had been when aimed against her. She was now climbing up towards him and he fitted one of his magic arrows to his bow which he was about to shoot, when a little bird, the nē-po-muk-ē (the chickadee), flew up and perched upon a small branch near the boy and whispered in his ear, Okēna, okēman (her head ornament). The woman wore in the back of her hair a little plume of eagle down, like men often wear, and it was this that the friendly nē-po-muk-ē referred to. Okēna took the bird's advice and shot his first arrow at the plume on his sister's head, which the feather of the arrow touched. It caused her to shake and tremble, and grumbling at her little brother's wisdom she resumed her climbing. Okēna shot the second arrow, which being better aimed, grazed the plume, with the result that his sister trembled more than before and nearly lost her hold on the tree. She seemed to be getting afraid. The nē-po-muk-ē still kept repeating "Okēman, okēman." So Okēna shot his third arrow, which knocked off a piece of the plume. The woman lost her hold and almost tumbled from the tree, but recovered her balance and now having but a little distance to climb, she was certain of killing this last one, although he knew the way to kill her was to hit her head ornament. Again the nē-po-muk-ē warned the boy, "okēman," he repeated, "okēman." Okēna now had only one chance for his life, but the distance was so short that he did not fear missing again; so when his sister was so close that she could almost reach him with the root digger, he shot his last arrow, which struck the plume in the middle and the wearer of it fell to the ground dead. Okēna descended and gathered up his arrows, for with them he was to bring his dead brothers back to life. He shot one arrow away straight up in the sky and cried aloud to his six brothers to get out of the way or they would be struck by the falling arrow. They seemed to hear him, for as the arrow fell to the ground their bodies trembled as if in fear. Okēna shot the second arrow, which he aimed to fall a little nearer than the other, and as before he warned his brothers of their danger. Their bodies shook again, more visibly than before. Now Okēna, who was pleased with his work, carefully aimed the third arrow to fall very near the bodies; when it was falling he called out more alarming still, at which the dead brothers drew up their feet before the arrow struck the ground. Okēna laughed for joy as he shot the last of his magic arrows into the sky, and then ran around his brothers crying, "Get up, get up, you are going to be hit this time." Just as the descending arrow was about to pierce one of the bodies, they all rolled out of the way and stood upon their feet alive, the arrow sticking upright in the place they had been lying upon.

The seven boys next built a large fire, in which they burnt the body of their late sister. They very much feared that she would come alive again, so they all sat around the fire and watched. Any little sparks that flew from the flames, they carefully picked up and put back again. When all was consumed they held a council to decide upon their future. All were anxious to cease being people, therefore they discussed various plans and proposed that they should turn into stones, but the rest said, "no, stones get broken up." One said, "let us be grass," but the rest said, "no, we would be eaten by buffalos and burnt up by prairie fires." Another wanted them to turn themselves into water, to which they objected, saying "animals and people would drink us." Still another of the brothers said, "let us be trees," but the others replied, "people would chop us down and burn us for fuel." At last one proposed that they should all transform themselves into stars; that idea suited every one, for, said they, "we will turn about every night and thus show people when daylight is near or far." The seven brothers then went and took the same positions in the sky that they had occupied in the tree. Okena, who was the topmost on the tree, is the highest up of the seven (Dubhe a Ursa Major).



LEGEND OF CUMBERLAND MOUNTAIN.

BY JOHN A. WATKINS.

Many traditions have come down to us from very remote periods, whose authenticity we will not pause to discuss, but will merely remark that they are entitled to as much credit, and bear upon their face the impress of truth in a much higher degree than some of those veritable histories used as text-books in our public schools and colleges. One nation perpetuates its history by the use of hieroglyphics; another by the style of its architecture and sculpture, a third in written characters, with whose language we have all become familiar, by translation or otherwise; while a fourth, through succeeding ages, has stored its archives in the memory of its chiefs and leaders, by whom they are transmitted to their descendants, pure and uncontaminated by those corruptions and impositions which form the staple of much the larger portion of the early history of Persia, Egypt, Carthage and Greece. Many traditions on the sibylline leaves have been scattered by the hand of time, to be picked up by the traveler and treasured for useful purposes. Their object was to convey a moral, and doubtless at the time the effect was salutary; but, like all other admonitions, their influence was

lost in the lapse of ages, and might be regarded as we look upon some of the prophecies of the Old Testament—as having performed their mission, but still occupying their place as a testimonial and warning. The analogy is much stronger than would at first appear to the casual observer.

Less than fifty years ago a large portion of the State of Mississippi was in the possession and occupancy of a remarkable tribe of Indians. For their fate, I have felt a deep sympathy, engendered, no doubt, by early recollections and associations. Those mighty forests that have fallen before the "march of civilization," rang with the shouts of happy, joyous childhood. Time has wrought wonderful changes in the short period of forty or fifty years, and those, then so young and heedless of the future, are many of them "sleeping with their fathers," while others have sought new homes, and in the varied pursuits of life have severed the gossamer link by which they were united in youth. If the change on the one hand has been so sudden and irruptive, what may it not be compared with on the other? If the pursuit of gain, and change in the relative conditions of life, or the desire for distinction, has produced the wonderful revolution manifest in the moral and social conditions of Mississippi amid that portion of her population who were governed by no arbitrary law, but were left free to choose for themselves the path which reason or education might point out as conducting with fewest obstacles to the goal of their desires, how widely different has been the fate of those to whom no choice was given, but who were made the subjects of an arbitrary will, an inevitable destiny? And yet this destiny was not unexpected; it fell not on those who were unprepared for the blow; but, like death, it was one of those evils which we would willingly see pass from us, while experience and observation teach the utter futility of any attempt to avoid "this end of all things."

I have said that the Indians were not unprepared for the blow that fell upon them when it was announced by the chiefs of their tribe that they had ceded to the United States all their possessions in Mississippi, for richer lands and better hunting grounds west of the great "father of waters." They wept as those without hope, for this was an event in their history, towards which they had long and anxiously looked; and though they had prayed that the "cup might pass from them," the prayer was more the result of impulse than of a lively hope in its fulfillment. For the time is not distant when the cupidity of their white neighbors will artfully stimulate the general government to provide a home for the "poor Indian" still farther towards the setting sun, if any place can be found in that direction. This belief was founded on a tradition of the tribe, which, for more than three hundred years, has been carefully handed down from father to son, and which had produced in this tribe a peculiarity not common to

any of the race whose habits have been properly investigated. The tradition which, many years ago, was communicated to me by an Indian, then one hundred years of age, is as follows:

A party of young braves, returning with scalps and spoils from a successful foray on one of the neighboring tribes, encamped for the night on the highest point of that ridge of mountains known at this day as the Cumberland Range. They had built a fire, cooked their venison, and having satisfied both thirst and hunger, were making merry over their late victory, and in both song and dance, boasting their prowess, their love of blood, and the number of victims each had slain. But suddenly their rejoicings were exchanged for looks of terror and apprehension, for in their midst, as if he had dropped from some stray planet, appeared a gigantic Indian warrior, who announced himself a messenger from the Great Spirit, and an ancient chief of their tribe. He spoke to them as a father to his erring children, pointed out the dangers by which they were beset, and the means that might be employed to defeat them. Their possessions extended to the east as far as the Great Salt Sea; to the west they were bounded by the setting sun; the climate was pure and healthful; the earth rich and fertile; in the forests game abounded, while in every stream fish were abundant; maize grew spontaneously, and almost without cultivation produced an abundant crop, offering to the industrious an ample reward for his labors. But instead of cultivating the soil, pursuing the chase and devoting their lives to the promotion of peace and industry, their young men were annually swept away by hundreds, while on the "war-path," and the only reward of the survivors was a few scalps and prisoners. The Great Spirit was represented as being very angry with his red children, and threatened, unless they changed their predatory habits, that he would send among them, from a long distance towards the rising sun, a race of people who would utterly exterminate or make slaves of them. They were warned against making war upon the neighboring tribes, or holding any intercourse with them. And to show that his authority was great, he stamped with his foot, when thunder and lightning and rain and tempest suddenly burst upon them, and thick darkness so encompassed them around that they could not see each other's faces, and great fear fell upon them, and they did tremble as the leaf that is shaken by the wind. But soon the storm rolled past, the clouds were dispersed and the face of the ruddy sun was just visible in the east. But what was their astonishment, when, instead of standing on the highest mountain peak, where they had pitched their camp, they found themselves in a delightful valley, where flowers of every variety bloomed in profusion, and the song of birds was heard; through which ran a broad and beautiful rivulet, whose laughing waters went leaping and dancing in their course with all the joyousness of early

childhood. They soon discovered that this delightful valley had once been the mountain ridge, but by the power of a supernatural agent had been depressed to a level with the circumjacent country.

Wondering and perplexed, they returned to their village, oppressed with many forebodings as to the future. A council of the wise men was called, who held a long and anxious "talk," which, like all other talks, finally came to an end, when it was publicly announced that messengers bearing the calumet of peace should be dispatched to the neighboring tribes, bearing a proposition for burying the tomahawk and an earnest wish to enter into a treaty of perpetual amity.

The messengers were hospitably received by some, while others were subjected to a cruel and lingering death as spies and enemies. The story was not credited, but, on the contrary, was regarded as a device of their ancient enemy, for the purpose of betraying them into a fancied security, so as to make their destruction complete when the time for executing their plans had arrived. They therefore determined to anticipate the blow meditated by their cunning adversaries. A union of several of the tribes was formed, who stealthily approached the village of their destined victims, where they lay in ambush until the whole were supposed to be asleep. Rushing from every quarter, they commenced the work of indiscriminate slaughter, and so well-timed was the blow that few of the once powerful and warlike tribe escaped, to mourn over the defeat, disgrace and flight.

Those that did escape remembered the miraculous valley, and passed through it on their way to the "setting sun." They had no home, no kindred, no name. Hence they became wanderers, until finally they settled in the northern part of Mississippi, where they resided until about twenty years ago, when most of them removed to their new home in the west.

This is a brief outline of a tradition which converted one of the most powerful and warlike tribes of the East into the peace-loving, though brave and chivalric Choctaw, the early and steadfast friend of the white man.

New Orleans, April 15, 1873.

MOUNDS AND RELICS IN MANITOBA.

BY CHARLES N. BELL, F. R. G. S.

Sixteen miles north of the City of Winnipeg, on the east bank of the Red River, are situated some tumuli of the Mound-builders. On the 29th of August, 1885, I made some extensive excavations in one, known as the McLeod mound, on the property of Angus McLeod. With ten men as assistants, I decided to go on with the preliminary uncovering, as well as to complete the examination of two pits that had been sunk in the mound years before. During the day a number of articles were uncovered, which are now deposited in the museum of the society in Winnipeg.

Some days after this, I accompanied a party of friends who drove down to inspect the mounds. On arriving there most of the number expressed a desire to do some digging, and I set them to work with spade and grubbing-hoe.

McLeod, the owner of the land, having appeared, I asked him to accompany me to the river bank, about 500 yards distant. In conversation he informed me that a beautifully wrought stone pipe, weighing a pound and a half, had been found in one of the fields, between the mound and the river, and that, years ago, the plow-share turned up many flint arrowheads, and several flint ax like implements. As usual in such cases the articles were found only to be thrown away or lost. Afterwards, in speaking to the finder of the pipe mentioned, I learned that it was finely carved, having the form of a bear on one side and a frog on the other. The old maps of the last century show that a nation called the Bears inhabited the country north of Rainy Lake. If this pipe was a totemic one, there may have been some connection between the owner and the Bear nation.

We examined the fields as we passed through them, but nothing was found before we arrived at the river bank. Directly in front of the mounds, the river takes a sweep, and constructed as they are, on the highest point in that locality, a beautiful view may here be had from their summit, both up and down the stream. The land slopes gradually back from the river bank, which is not very abrupt. The beach is composed of gravel and boulders, washed from the drift, covering a limestone ridge, which here crosses the course of the river at right angles. During the great flood of 1852, when the country about Winnipeg was covered with water, this locality was high and dry. No doubt the Mound-builders had some experience of floods, and

selected this elevated ground for the site of their mounds and camping place.

It was here that the first settlers, three-quarters of a century ago, found the best fishing grounds on the river. Stories are yet told by their descendants of the moving masses of sturgeon and other fish that were seen below the "rapids," while it is at present the favorite resort of the people living in the neighborhood who want a supply of fish.

We searched along the river bank, where the clay sub-soil had been washed down, leaving a steep pitch or face of three or four feet in depth, and here I soon found traces of aboriginal work, in the form of a perfect little arrowhead, fashioned from rock crystal.

An examination of the gravel at the foot of the incline revealed the presence of a large quantity of flint and other hard stone clippings, broken arrowheads, and a few points evidently rejected on account of flaws in the material, disclosed in the process of working them, together with some excellent specimens of finely finished arrowheads. Altogether I secured 183 arrowpoints in various stages of manufacture, and as many chips as I could carry in my pockets.

Prospecting up the incline from the water's edge, I soon discovered the level in the bank from which all these fragments had been washed. It was about two feet below the surface.

Taking this level as a starting point, I examined along the bank and soon noticed patches of reddish colored clay, ashes and charcoal. Digging into these exposed masses of ashes, I found charcoal, bones of the buffalo, deer and beaver, and, in a few places, pockets filled with fish scales, yellowed by age, so fragile that they fell into minute particles when touched. Fragments of pottery appeared everywhere, though none of large size. Judging from the curve and thickness of the rim pieces, some of the vessels must have been of one or two gallons capacity. During the afternoon I gathered rims and other fragments of pots, which show thirty-seven distinct styles of making or decoration, by indentation. The impressions were made by instruments having both smooth and serrated points of different sizes. As a rule a number of lines run around the neck, either plain grooves or pie-crust pattern. Between these horizontal lines, running parallel to each other, are short connecting bars of the same character, inclining diagonally to the right or left in different samples. In some cases the connecting bar runs half way to the left, and then to the right until it meets the next line above. Some patterns have pits of different sizes indented between the horizontal lines. The tops of the rims are invariably indented in some style, and in a number of specimens I find the pattern continued for an inch or so on the inside of the mouth of the vessel. The bodies of the pots are marked in many ways

by lines, coarse and fine, running at all angles, by fine lines drawn from top to bottom in a very neat manner, and by small crescent-shaped marks evidently made by the tip of the finger nail.

The earthenware in color averages from a light drab clay to dark brown or black. It is generally strong and firm, being composed of the clay found in the neighborhood mixed with pulverized decomposed granite, the particles of mica glisten in nearly every fragment, and in thick, coarse pieces a large proportion of granite is found in grains of the size of duck shot. Several lumps of this granite were found in the bank with fragments of pottery and evidently was the material decomposed for admixture with the clay.

What strikes me as peculiar is the fact that most of the fragments bear traces of fire on the inside surface, while the outside is clean and light-colored. This being the case, I am inclined to think that the pottery was baked by placing fire in the inside, though McLeod pointed out a hole in the bank that he declared had been used as an oven; the clay was baked quite hard, while the vicinity was literally strewn with fragments of pottery.

Some of the darker colored pieces appear to have come from pots that had been much used, and some substance is encrusted in them, which might, under the microscope, tell a tale.

A small ax of limestone was found which had been carefully worked into shape. It is about four inches long and two and a half inches broad, with a thickness of half an inch. One cutting face is worked down to an edge and two nicks or cuts show where the cord or sinew tied it to the handle. It was either the plaything of a child or was used for killing fish, when taken from the water, as it was too soft a stone to use on wood.

Two small, water-worn boulders picked up show the marks of scratches and pounding, one of an oval shape has one end completely worn away by pounding. From their shape and appearance I imagine they were tools for chipping flints. McLeod informed me that the Indians said that long ago they used such stones for that purpose.

I found three beads during the visit. Two are of shell (one crumbled into thin scales), each a half inch wide, and very thin, the hole in the center small and bored from one side. They were evidently made from the common river mussel shells, which occur in abundance on the riverside in the neighborhood. The third bead is of slatey stone, about an inch in diameter, with a hole in the center, one-sixth of an inch wide. It appears to be water-worn, and I am told that similar ones are sometimes picked up on the east shore of Lake Winnipeg.

A peculiar tube about five inches in length and a quarter of an inch in diameter was next discovered. It is of red-colored, porous earthenware, with a hole running through it lengthwise as large as that found in an ordinary clay tobacco pipe. Unfortu-

nately this broke into several pieces, but the fractures are clean and bright colored and it bears no marks of having absorbed juice or other matter. I have no idea for what purpose the tube could have been used. It is too fragile for an ornament or pipe-stem and certainly has not been used as either. It may have been part of the paraphernalia of a medicine-man, for stone tubes larger and stronger are common in the mounds. I took three from a mound near this place.

From the debris was taken a baked clay lump, well rounded except at one place, where it had evidently rested when baking. The groove running around it was likely intended to be used to tie it to a net or line as a sinker.

A curiously shaped piece of flint was found by McLeod, who at once pointed out its resemblance to the "sunfish" of the Red river. Viewed in one way it resembles a fish, and in another a bear. While it has evidently been most carefully chipped into its present form, I do not attach much importance to the resemblance mentioned, as it may be purely accidental.

The question arises, are these the remains of the Mound-builders who constructed the tumuli situated close by, or has this place been the camping and refuse ground of the Crees and Assiniboines, who held possession of the lower Red river country when the French adventurers, under La Verendraye, first made their appearance in it.

Let us examine the evidence collected. The mounds are situated on a clay ridge (which some people possessed of vivid imaginations make out to be a fortified embankment) about 500 yards back from the old camping ground, which is as fine a location for camping as could be desired.

That the builders were in the vicinity for a lengthened space of time is shown by the number of interments in the mounds at different and irregular levels, and the great quantity of calcined bones and charcoal found mixed through the soil. Fish, without doubt, formed to a great extent their food, and here it was to be had in plenty.

The line of "kitchen midden" is plainly traced in the river bank, about two feet below the surface of the surrounding level. It must have taken a very long time to deposit two feet of soil, even if some of it had been washed down from the higher level, for there is a good depth of loam covered with a sod, capping the bank.

The markings on the pottery found in the river bank are identical, in many cases, with those taken from the mounds near by.

The shell beads are facsimilies of the two taken by myself from the very bottom of the McLeod mound.

There is the decayed trunk of a tree (elm, I think), considerably over two feet in diameter, still standing upright at the very

edge of the river bank. I dug well under the large roots of this tree into the solid earth, which was burnt hard, and took out several flints, fragments of pottery and one of the shell beads. This tree has grown over the deposits since they were covered with soil.

Catlin informs us that the Assiniboines cooked their food by placing heated stones in skins filled with water, until the water boiled. If they had ever used pottery it is not likely that they would have gone back to skin kettles, and these are the Indians, with the Crees, who inhabited Manitoba within historic times.

There seems to be every reason for deciding that this was the camp-ground of the Mound builders and theirs, the remains now being washed out from the bank of the Red river.

Perhaps when trained and competent ethnologists explore and carefully examine these mounds and camp-grounds they may arrive at an approximate age for them.

The site is such an excellent one for hunters that most likely Indians have camped there, off and on, since the Mound builders disappeared, and it will be difficult to decide as to which people belonged many of the articles found on or very near the surface of the ground. The carved stone pipe found in a field is an example; the position in which it was found gives no clue to its former ownership.

Especially will it be difficult to distinguish between stone articles, because they are nearly all rude, differing only in the degree of finish, a difference that might be the variation existing between the skill of two individuals of the same tribe working together.

MAN AND LANGUAGE;
OR, THE TRUE BASIS OF ANTHROPOLOGY.

BY HORATIO HALE, M. A., F. R. S. C.

IV.—LANGUAGE THE SCIENTIFIC BASIS OF ANTHROPOLOGY.

And here we return to a question of linguistics, which has been already noticed, but which requires, perhaps, a fuller discussion. When it was first discovered that the languages spoken by many barbarous tribes possessed a singular capacity for expression and a vast variety of forms for nicely discriminating the differences of objects and of ideas, an explanation was proposed which seemed plausible and was at first accepted by many reasoners. These elaborately constructed languages, it was suggested, indicated that the people who spoke them were the descendants of a more civilized race, and had simply retained their ancestral language while losing in other respects their ancestral culture. But further reflection and inquiry showed that this explanation could not be deemed satisfactory. If refinement of language is a product of culture, it was naturally asked, why should it not be lost with other like products? If conjugations and declensions, substantive verbs and abstract terms, are due to civilization, like the smelting of metals, the weaving of cloth, the architectural and pictorial arts, why should these linguistic achievements be retained when all the other gains of high cultivation have been lost? How is it possible to suppose that the hundreds of barbarous tribes in America and Africa, while losing all other arts of an earlier civilization, have preserved solely this beautiful mechanism of highly organized speech?

These considerations led to a change of opinion—a change which resulted in two directly opposite views of the problem and its proper solution. One of these was proposed by an eminent Franco-American scholar, who was the first to study the complex American languages with philosophical acuteness, and to exhibit in a clear light their peculiar characteristics. The other, which will be first considered, has in late years been maintained by many writers, but by none with more force and eloquence than have been displayed by a distinguished English author, whose works in other departments have been justly admired and have delighted thousands of readers. In reference to the subject now under consideration, he states that he had formerly held the view that the rich and artistic structure of the

languages of some barbarous nations implies an intellectual power superior to what we now find in these nations, and that they therefore prove a condition previously exalted. "Further explanation," adds Dr. Farrar, "has entirely removed this belief."* He is now of opinion that "this apparent wealth of synonyms and grammatical forms is chiefly due to the *hopeless poverty of the power of abstraction*, and is the work of minds incapable of all subtle analysis." He adds: "Many of these vaunted languages (e. g., the American and Polynesian)—these languages which have countless forms of conjugation, and separate words for the minutest shades of specific meaning—these holophrastic languages, with their 'jewels fourteen syllables long' to express the commonest and most familiar objects—so far from proving a once elevated condition of the people who speak them, have not even yet arrived at the very simple abstraction required to express the verb 'to be,' which Condillac assumed to be the earliest of invented verbs." We are further told by the same author in another work† that "a savage may have a dozen verbs for 'I am here,' 'I am well,' 'I am tall,' 'I am hungry,' etc., because he has no word for 'am,'—and a dozen words for 'my head,' 'your head,' 'his head,' and almost any conceivable person's head, because he finds a difficulty in realizing the mere conception of any head apart from its owner." And we are assured that while these savages have an endless number of expressions for particular varieties of objects and actions, they have no general terms for a whole class of such objects or acts.

The account which has been given in the foregoing pages of the languages spoken by two races in the lowest stage of savagery will show how widely astray this ingenious and eloquent writer has been in his facts. Both Athapascans and Australians make abundant use of the substantive verb, and exhibit the power of abstraction in its fullest force. The savage Australian has no difficulty in distinguishing a head from its owner, and does it perhaps with more logical correctness of grammar than an Englishman. He employs the possessive pronoun in its genitive case like a possessive noun. *Walan* is head, and *kore* is man, the latter making in the genitive *korekoba*, man's; *emmoemba* is the genitive of the first personal pronoun; so we have *walan korekoba*, man's head (head of man), *walan emmoemba*, my head (head of me). Could the most analytic of "civilized" tongues do better than this?

It is observable that in the objections which are made, all barbarous tribes are confounded together, whereas they differ very widely in their intellectual qualities, and in the languages which manifest these qualities. One of the passages just

*"Chapter on Language," by the Rev. Frederic W. Farrar, D. D., F. R. S., Chap. IV. p. 68, American edit.

†"Families of Speech," Lecture IV, p. 400.

quoted brackets together the American and Polynesian languages, which are at the very opposite poles in their lexical and grammatical characteristics. The Polynesian is among the simplest and least wordy of languages. It has, properly speaking, no inflections, and makes little use of "agglutination." The words are brief, usually of only two or three syllables. Its grammar is carried to almost the last degree of analysis—the mark, as we are assured by some writers, of high civilization and intellectual superiority. All the cases of nouns and all the moods and tenses of verbs are indicated by separate particles. *Fale*, is house; *te fale*, the house; *o te fale*, of the house; *ki te fale*, to the house. The plural is also indicated by a particle—*na fale*, the houses. A Polynesian can not, like an Iroquoian, combine the personal pronoun with the noun; he must say *lau ulu*, my head; *nau ulu*, thy head; *ana ulu*, his head; *te ulu o te tanata*, the head of the man. He has two particles which represent the substantive verb. There is no lack of general terms. Besides a name for each kind of fish and tree, there are generic words for fish (*ika*) and tree (*lakau*). Yet this simplest and most analytic of idioms is really a very poor one, with feeble powers of expression; and the people, when first known to Europeans, were still in a low stratum of barbarism, ignorant even of pottery or the use of the bow.

The truth is that not simplicity but complexity is the evidence alike of progress and of the energies which lead to progress. The simplest forms of animal life are the lowest, and the most complex are the highest. Among inventions, compare the sickle with the reaping machine, the canoe with the steamship. The simplest of governments is the lowest, the patriarchal despotism; the two most complex of all actual governments are probably those of the British Empire and of the North American Federation, which are surely among the highest. The complexity of the American and Australian languages, rightly regarded, is the evidence, not of poverty of the powers of abstraction and analysis, but of the very reverse. I have had occasion to give elsewhere an account of an American people—the Iroquois—who, though possessing no greater natural advantages than the Polynesians, had reached a much higher plane in the arts, as well as in their social and political organization. Their language, in its elaborate structure, corresponds to this superiority, and accounts for it. As an instance of that complexity, which some scholars, like the esteemed author just now quoted, have too hastily condemned in these languages—while they doubtless admire it in the Sanskrit, the Greek and the German—I may venture to quote the analysis of a word which fairly indicates the system and quality of this speech, and the inferences that may reasonably be drawn from it:*

* "The Iroquois Book of Rites," in Brinton's "Library of American Aboriginal Literature," p. 149.

"The word *teskenonhweronne*, which is rendered, 'I come again to greet and thank,' is a good example of the comprehensive force of the Iroquois tongue. Its root is *nonhwe* or *nonwe*, which is found in *kenonhwes*, 'I love, like, am pleased with,'—the initial syllable *ke* being the first personal pronoun. In the 'frequentative form' this verb becomes *kenonhweron*, which has the meaning of 'I salute and thank,' i. e., I manifest by repeated acts my liking or gratification. The *s* prefixed to this word is the sign of the 'reiterative form:' *skenonhweron*, 'again I greet and thank.' The terminal syllable *ne* and the prefixed *te* are respectively the signs of the 'motional' and the 'cislocative' forms 'I come *hither* again to greet and thank.' A word of six syllables, easily pronounced (and in the Onondaga dialect reduced to five), expresses fully and forcibly the meaning for which eight not very euphonious English words are required. The notion that the existence of these comprehensive words in an Indian language, or any other, is an evidence of deficiency in analytic power, is a fallacy which was long ago exposed by the clear and penetrative reasoning of Duponceau, the true father of American philology. As he has well explained, analysis must precede synthesis. In fact, the power of what may be termed analytic synthesis—the mental power which first resolves words and things into their elements, and then puts them together in new forms—is a creative or co-ordinating force, indicative of a higher natural capacity than that of mere analysis. The genius which framed the word *teskenonhweronne* is the same that, working with other elements, produced the steam engine and the telephone."

The name of Duponceau recalls us to the special point of discussion—the true explanation of the origin of this remarkable wealth of forms and these evidences of discriminating power, which are found in many languages spoken by barbarous tribes. This eminent writer, distinguished alike as a scholar and a man of affairs, was (as has been said) the first to make a profound and philosophical study of the American languages and to compare them with other idioms in such a manner as to disclose the true principles of the science of comparative philology. Born in France in 1760, his talents and learning had secured him, at the early age of seventeen, the position of secretary to the well-known Court de Gébelin, author of many important works on philosophy, religion, and language. From this position he passed to that of secretary and aide-de-camp to Baron Steuben, and repaired with him to America, where, after the war of independence, he held an important office under the Federal Government. Admitted to the bar, he became so eminent in his new profession that he was offered the dignity of Chief Justice of Louisiana. In later life he returned ardently to scientific pursuits, became President of the American Philosophical Society of Philadelphia, and devoted himself especially to the study of

the aboriginal languages. His best-known work on this subject is his "Memoir on the Grammatical System of certain Indian Nations of North America," which, written in French, was presented to the French Institute in 1835, and received the "Volney prize" for linguistic science. This memoir, which has been justly styled by an eminent and certainly not partial critic, "a most valuable and brilliant work,"* had been preceded by others less known, and particularly by a translation of Zeisberger's "Grammar of the language of the Lenni Lenape, or Delaware Indians." To this translation, published by the American Philosophical Society in 1827, the translator prefixed a preface of considerable length, in which his view of the scope and principles of comparative philology is set forth, and is illustrated by many examples and much clear and powerful reasoning. Some passages of this essay which refer to our present subject may be cited. After referring to the great variety in the structure of languages, he remarks:

"It has been shown that the American languages are rich in words and regular in their forms, and that they do not yield in those respects to any other idiom. These facts have attracted the attention of the learned in Europe, as well as in this country; but they have not been able entirely to remove the prejudices that have been so long entertained against the languages of savage nations. The pride of civilization is reluctant to admit facts like these in their utmost extent, because they show how little philosophy and science have to do with the formation of language. A vague idea still prevails that the idioms of barbarous tribes must be greatly inferior to those of civilized nations; and reasons are industriously sought for to prove that inferiority, not only in point of cultivation, which would readily be admitted, but also to show that their organization is comparatively imperfect. Thus a learned member of the Berlin Academy of Sciences, in an ingenious and profound dissertation on the forms of languages [Baron William von Humboldt—'On the Origin of Grammatical Forms and their influence on the development of ideas'], while he admits that those of the American Indians are rich, methodical, and artificial in their structure, yet will not allow them to possess what he calls genuine grammatical forms (*echte Formen*), because, he says, their words are not inflected, like those of the Greek, Latin, and Sanskrit, but are formed by a different process, which he calls 'agglutination;' and on that supposition he assigns to them an inferior rank in the scale of languages, considered in the point of view of their capacity to aid the development of ideas. That such prejudices should exist among men who have deservedly acquired an eminent reputation for science is much to be regretted; and it is particularly with a view to remove them from the minds of such men that

* Farrar: "Chapters on Language," Chap. IV, p. 44, footnote.

this grammar is published. The learned baron will, I hope, recognize in the conjugations of the Delaware verbs those inflected forms which he justly admires, and he will find that the process which he is pleased to call agglutinative is not the only one which our Indians employ in the combination of their ideas and the formation of their words."

After citing some striking examples of these modes of word-formation and inflection, the author comes to the point now under discussion. He remarks that in view of the considerable degree of art and method which have presided over the formation of the American languages, the question arises whether we are to suppose (as many had been inclined to believe) that this continent was formerly inhabited by a civilized race, or whether, on the other hand, it is not more reasonable to hold that men are "endowed with a natural logic which leads them, as it were by instinct, to such methods in the formation of their idioms as are best calculated to facilitate their use." He does not hesitate to decide in favor of the latter view, because, as he affirms, "no language has yet been discovered, among either savage or polished nations, which was not governed by rules and principles which nature alone could dictate, and human science never could have imagined." "No language," he adds, "can be called 'barbarous' in the sense which presumption has affixed to that word." Culture stands for something, but for comparatively little. The question of the respective shares to be assigned to nature and to cultivation in the composition of such noble instruments as the languages of men is one well worthy of being thoroughly investigated. "The result, it is true, will be mortifying to our pride; but this pride, which makes us ascribe so much to our own efforts and so little to the silent operations of nature, is the greatest obstacle that we meet in our road to knowledge."

The result, therefore, of our inquiries—a result deduced alike from the evidence of language and that of history—is that a state of barbarism does not imply any inferiority in intellectual power. It simply indicates that the barbarous people have been compelled to live amid surroundings which rendered any advancement in culture impossible. Remove the savage Athapascans to the bountiful pastures and fertile valleys of New Mexico, give them horses, cattle, and sheep to tend, and wheat and fruits and edible roots to cultivate, and presently their torpid faculties rebloom, and they become the quick-witted and inventive Navajoes. Remove the shrewd, industrious, enterprising, improving Dravidians to the barren plains of Australia, and they sink in time to what has been deemed the lowest level of humanity.

This naturally leads us to consider some of the theories which have lately been put forth in regard to the condition and character of primitive man. Strange to say, the modern representa-

tives of this unknown individual have been looked for in places where, by the common consent of all physiologists, he could not possibly have come into being—in Australia, in South Africa, in the Pacific Islands, and in America. Many works have been put forth in which speculations, based entirely on what has been learned of the inhabitants of these regions (but generally in utter disregard of the teachings of linguistic science), have represented the earliest men as sunk in the lowest debasement of mind and morals. In this “primitive horde,” as it has been styled, human beings have been described as herding together like cattle, utterly without family ties, and living in what is euphemistically termed “communal marriage,” or, in other words, in promiscuous intercourse. From this dismal condition, we are assured, they have slowly and gradually emerged, by long and painful struggles, of which the stages and methods have been ingeniously suggested, and the indications pointed out as surviving in various customs and institutions, such as wife-capture, mother-right, father-right, endogamy, exogamy, totemism, the clan-system, and others of like character. There is no doubt that all these customs or social conditions have prevailed among barbarous races, except only that of promiscuous intercourse, which, as Darwin has clearly shown, is contrary to the very nature of man as a “pairing animal,” and never could have existed.* All of them are doubtless well worthy of careful investigation. But if the conclusions drawn from the facts recorded in the previous pages of this essay are correct, all these peculiar usages of barbarous tribes are simply the efforts of men pressed down by hard conditions below their natural stage to keep themselves from sinking lower, and to preserve as far as possible the higher level of intellectual, moral, and social life to which their innate faculties tended to exalt them. They are like the struggles of a bird in a cage to keep its wings in use for flight. A child who should assume that the primitive canary could only flutter for a distance of a few yards would be as wise in its inference as the philosopher who regards the Australians and Fuegians as representatives of primitive man. The physiologist sees at a glance in the structure of the bird’s wings the kind of flight for which it was intended, and the philologist discerns in the Australian and Fuegian languages evidences of the mental endowments which, under other circumstances, would have placed the speakers of those idioms very far above their actual condition.

It may be well to attempt to gather from the evidence in our possession what was the real condition and character of primeval man. We possess in three important works, lately given to the world by three authorities of the first rank, the latest conclusions of

*On this subject the admirable work of Mr. Edward Westermarck, of the University of Finland, “The History of Human Marriage,” (published since this essay was written) should be consulted

science on the question of the probable birthplace of the human species. It is of interest to observe that these eminent authorities differ widely on certain important questions, M. de Quatrefages being a strenuous opponent of the Darwinian theory, of which Dr. Brinton is a no less decided supporter, while Mr. Wallace occupies, at least as regards the mental endowments of man, an intermediate position. Yet their opinions on the question under consideration are in close accord. All agree in holding that the human race is of much greater antiquity than was formerly supposed, going back at least into the early quaternary period. All are of opinion that the varieties, or "sub-species," which make up this race, are of one stock, which had its origin in a single locality, and all find this locality in the temperate zone of the eastern continent. They differ as to the precise position, but the differences are not very wide, and are easily reconciled. Finally all accord in placing the earliest men in a region and climate where their natural powers would have the fullest expansion, and their surroundings would be most favorable for the development of every faculty—where animals apt for domestication and plants suited for cultivation would be ready at hand. M. de Quatrefages would find the cradle of the human race in Asia, not far from the great central pile (*massif*) of the continent, and near the region which gives birth to all the great streams which flow to the north, the east, and the south.* Mr. Wallace, in like manner, finds this birthplace in the "enormous plateaux of the great Euro-Asiatic continent, extending from Persia right across Tibet and Siberia to Manchuria, an area, some part or other of which probably offered suitable conditions, in late Miocene or early Pliocene times, for the development of ancestral man."† Dr. Brinton, for reasons which he sets forth with much force of argument, is inclined to look for the cradle of the species further westward, near the Atlantic in northwestern Africa.‡

These varying opinions may be reconciled in the same manner in which Dr. Schrader has sought, not without success, to conciliate, or rather to combine, the views of those archæologists who hold that the Aryan race had its primal home or place of development in central Asia, near the Oxus, with the opinions of those who find this home in central or eastern Europe, near the Danube. He holds that these localities were secondary centers, formed after the migration of the earlier members of the race eastward and westward, from their primitive home on the middle Volga.§ In like manner it may be suggested that central Asia and Northwestern Africa were secondary centers, to which the earliest population overflowed from its primal seat

* "Introduction à l'Étude des Races Humaines," p. 132 (1867).

† "Evolution," p. 490 (1869).

‡ "Races and Peoples," p. 82 (1880).

§ "Prehistoric Antiquities of the Aryan Peoples Part IV," Chap. 14.

in some intermediate position. This primal home of the species seems to be strongly indicated by historical and linguistic facts. The vast peninsula of Arabia, whose protecting deserts enclose fertile oases, some of them large enough to be the seats of powerful kingdoms, lies midway between the two regions, Egypt and Mesopotamia, in which the human race displayed in the earliest historical times its capacity for the highest culture. Their civilization goes back certainly to a date five thousand years before the Christian era, and probably to a long anterior period. The latest inquiries have led to the opinion that this civilization may have had its beginning in the quaternary or even in the pliocene era.* In fact, it is doubtful whether Egypt was ever occupied by a barbarous people. That its earliest inhabitants used implements of chipped stone, and were unacquainted with the metals, seems to be established. But it should be borne in mind that civilization does not depend upon a knowledge of the metals. It begins as soon as men have acquired a settled habitation, and have learned to tame the useful animals and to cultivate the useful plants. If the earliest men of the existing species possessed, as we have every reason to believe, intellectual faculties equal to those of their descendants, how long would they be in acquiring these first elements of civilization? Imagine the first human beings to be dwellers in a fruitful oasis of northern Arabia, and consider what must necessarily have been their social condition. Being human (to repeat a former remark) they must have spoken to one another in articulate language. And, moreover, we know from the laws of linguistic science that this language must not only have been a completely organized speech, but that it was more complex in its forms than any dialect which has been derived from it. If, for example, it was, as would seem probable from the supposed locality, a language of the Hamito-Semitic stock, it certainly did not belong to the group of Hamitic tongues, which are as much simpler in their forms, and therefore younger, than those of the Semitic group, as are the languages of Polynesia compared with the ancestral Malasian tongues, or as is the English language compared with the German.

If the first human beings had all the natural instincts of their species, they belonged to the class of pairing animals. Their first social organization was that of the family. The first government was neither patriarchal nor matriarchal, but parental. The woman in her own sphere, and in her special prerogatives, was equal to the man. They were mutual helpmates. And in the first development of the arts of civilization, it is probable that the woman took the leading part. This part has been vividly suggested by an ingenious French writer, in a passage

*See Brinton (quoting G. de Lapouge) in "Races and Peoples," p. 129. Wallace, in "Darwinism," p. 400.

which well deserves to be quoted: "It is to woman, I think," writes M. Elie Reclus, "that mankind owes all that has made us men. Burdened with the children and the baggage, she erected a permanent cover to shelter the little family. The nest for her brood was perhaps a hollow, carpeted with moss. By the side of it she set up a pole, with large leaves laid across, and when she thought of fastening three or four of these poles together by their tops the hut was invented—the hut, the first 'home.' She placed there the kindled brand, with which she never parts, and the hut became illuminated; the hut was warmed; the hut sheltered a hearth." "A day comes when by the side of a doe which the man has slain, the woman sees a fawn. It looks at her with pleading eyes. She has compassion on it, and carries it away in her arms. The little creature becomes attached to her, and follows her everywhere. Thus it was that woman reared and tamed animals, and became the mother of pastoral peoples. And that is not all. While the husband devoted himself to the greater game, the woman, engaged with her little ones, collected eggs, insects, seeds, and roots. Of these seeds she made a store in her hut; a few that she let fall germinated close by, ripened, and bore fruit. On seeing this she sowed others, and became the mother of agricultural peoples. In fact, among all uncivilized men cultivation may be traced to the housewife. Notwithstanding the doctrine which holds sway, I maintain that woman was the creator of the primordial elements of civilization."*

These happy suggestions of M. Reclus call for certain qualifications. The author does no more than justice to woman, but he does less than justice to man. He forgets certain primary impulses, as strong in man as in woman, though different. If the nest-making impulse, so to speak, is most powerful in her, the building instinct is strongest in him. As soon as she began to rear a shelter for her brood, the mechanical faculty would be aroused in him. The first cabin, like the first swallow's nest, would be the joint work of the first mated pair. If woman tamed the first gentle animal as a pet, man would discern its usefulness for food and clothing, and become the first herdsman. If woman sowed the first seeds, man fenced the field, and became the first agriculturist. This mutual aid, which is theory as regards the past, is fact at the present day among the Navajos and the Melanesians,† and the fact confirms the theory.

Granting an intelligent people, dwelling in a fruitful region, under a climate genial in summer, but rigorous enough in winter to make shelter and clothing necessary and the storage of food desirable—with useful animals and plants near at hand—how

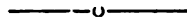
* *Primitive Folk: Studies in Comparative Ethnology*. By Elie Reclus. In *Contemporary Science Series*, p. 56.

† See the excellent work of the Rev. Dr. Codrington, *The Melanesians, their Anthropology and Folk Lore*. He tells us, p. 304, that "the respective shares of men and women in garden work are settled by local custom."

long a period would be needed for the arts essential to civilization to be invented and practiced by them? Among some American nations, according to their traditions, less than five centuries seems to have sufficed, even with a scanty stock of such animals and plants. In five centuries the offspring of a single pair on an Arabian oasis, doubling in number only four times in a century, would have grown to a people of five hundred thousand souls, numerous enough to send out emigrations to the nearest inviting lands—to the valleys of the Nile and the Euphrates. But these would have been bands of civilized men and women, familiar with agriculture, the rearing of domestic animals, housebuilding, weaving, and other arts of settled and regular life. We cannot imagine among them the barbarous usages and laws of wife-capture, exogamy, slavery, caste, and other like institutions, which have grown up in later ages among their debased descendants, who have wandered or been thrust into wilder regions, and have had to struggle with harder conditions. These luckless communities should be styled, not "primitive peoples," but "degenerate peoples." Yet in their languages, and indeed in the purposes underlying many of the very customs which are cited as proofs of their original and innate savagery, may be discerned, when rightly analyzed, evidences of the survival of those intellectual endowments which were displayed by their forefathers in the primeval civilizations of Arabia, North Africa, and Central Asia.

We return to the thesis with which our essay commenced. Unless it can be clearly shown that man is separated from other animals by a line as distinct as that which separates a tree from a stone or a stone from a star, there can be no proper science of anthropology. Geologists will readily admit that a stone is composed of star-dust, but they will say that it is star-dust which has assumed a form totally distinct from its original elementary condition. A treatise composed of facts and speculations showing how the matter of the earth was probably derived from star-dust would doubtless be very interesting to geologists, but it would not be deemed by them a treatise on geology. Geology commences where star-dust ends and the stone begins. A treatise which should undertake to show how inanimate matter became a plant or an animal would, of course, possess great interest for biologists; but it would not be accepted by them as a treatise on biology. That science begins when life appears. A work showing the chemical constituents of every species of plant would certainly be a valuable work; but it would be a work of chemistry, and not of botany. In like manner, a work displaying the anatomy of man in comparison with that of other animals cannot but be of great value; and a treatise showing how the human frame was developed from that of a lower animal must be of extreme interest; but these would be works, not of anthropology, but of physiology or biology. Anthropology

begins where mere brute life gives way to something widely different and indefinitely higher. It begins with that endowment which characterizes man, and distinguishes him from all other creatures. The real basis of the science is found in articulate speech, with all that this indicates and embodies. Solely by their languages can the tribes of men be scientifically classified, their affiliations discovered, and their mental qualities discerned. These premises compel us to the logical conclusion that linguistic anthropology is the only true "science of man."



PICTOGRAPHS AND ROCK-PAINTINGS OF THE SOUTHWEST.

By LEWIS W. GUNCKEL.

The innumerable cañons, plateaux and desolate gorges of Southern California and Utah, together with the mesas, deep, weird valleys, and sandy wastes of Arizona and New Mexico, constitute a region of unusual interest to the student of geology and archæology. Comprising, as it does, so large a territory, the essential features are necessarily many and varied; yet, as a rule, the different localities have many of the peculiarities in common. Notwithstanding the unusual interest which the strange-looking ruins, found throughout the whole region, excite in the minds of the observer, there are also other proofs of man's handiwork which are not less interesting. These are the strange, and to the casual observer, mysterious-looking characters and symbols chipped in the rock or painted in the caves or on the high cliffs.

These curious rock inscriptions and pictographs are worthy of especial notice. They are usually cut into the rock about a quarter of an inch deep, on the under side where it is not exposed to the weather; or painted on, in colors which still to a great extent, retain their original brilliancy, yet at the same time showing undoubted traces of age. Many of these signs are rude figures of human beings and animals, while many others are of a character which evidently had some significant meaning. Of this there can be but little doubt, and, while their meaning would not have that mysterious portent which most travelers attribute to the uncouth attempts at writing of departed and ancient races, yet it is not drawing too much upon the imagination to ascribe to the pictographs, some meaning or significance which must have occurred to the aboriginal mind at the time of their execution. Great care, however, must be taken not to mistake the modern pictographs for the ancient ones.

Oftentimes this is a perplexing task to perform, for we must

judge by the evident appearance of the rock sculptures or paintings themselves; by the close proximity to known ancient ruins; and by the separate or conjoined characters which occur in the inscription. For instance, a figure of a horse or gun would immediately prove it to be a modern work. It may be, however, that these representations, curious as they appear to be, were sometimes the outcome or result of the aboriginal painter's or sculptor's imagination or caprice. Sometimes they are found at inaccessible heights and necessarily must have involved considerable toil. We have found them high above us, on the roofs of caverns and caves; high up on precipitous cliffs and slanting ledges, so far up that it was impossible to get near them. How they were able to reach such unapproachable places is still a mystery.

They are found more or less commonly throughout the whole region—on the rocks of Arizona and New Mexico, on the cliffs of Southern Colorado, and in the caverns and on the rocks of Southern Utah, and on all the tributaries of the San Juan and the Colorado rivers. They occur on the face, or more often on the sheltered slanting surfaces of rocks or boulders, or on the cliffs and in the cave and cliff dwellings. In some localities they occur at short intervals and one can count as many as thirty groups of them in a good day's travel, while in other localities they are seldom met with, and are found only at great distances apart. The most important locations which have been noted by travelers and explorers are as follows: Those of the Sierra-Waco, thirty miles from El Paso; on the banks of the Rio Mancos, on the erratic blocks of the Gila, on the banks of the San Juan, on the McElmo creek, the Hovenweep, in the Chaco Canon, on the banks of the Puerco and Zuni rivers, along Butler's Wash, Utah, along the Rio de Chelley, and other localities where they occur less frequently.

It is a noticeable fact that while picture writings and rock inscriptions are very common in some localities, they are rare in others. Mr. W. R. Birdsall* calls attention to the almost total absence of them, or of figures decorative or otherwise, on the buildings or rocks in the Mesa Verde. Rude characters, inscriptions and pictures are also rare in the neighboring canons. A line cut in a spiral was the only object which came under his observation.

Last spring, having unlimited facilities for pursuing the study of these interesting rock-paintings and inscriptions, I found that the work spent upon the subject yielded results far beyond my greatest expectations, especially in the large number of interesting groups discovered. Particular care was taken to make

*"Cliff Dwellings of the Mesa Verde," by W. R. Birdsall, M. D., in *AMERICAN ANTIQUARIAN*, Vol. XIV, No. 3, page 138.

correct sketches, always affixing a scale thereto, which ranged on the average of one-sixteenth of the full size. The character of the rock was noted, and the fact that the pictograph had been etched into the face of the rock, pecked, outlined or painted upon the surface. If it was painted, care was taken to note each color in its correct place, also memorandum of signs of erosion, evidences of age, and general appearance. After a time one can distinguish at a glance the modern pictographs from the ancient ones, even when equally eroded or worn indistinct. Oftentimes the ancient, semi-ancient and modern figures were found on the same rock, evidently land marks, geographical directions, personal marks or, perhaps, childish fancies. Photographs, as a rule, turned out to be failures, notwithstanding the great care taken, for it was difficult to reach the under, shelving surfaces of the rocks or ledges. "Squeezes" were impracticable on account of the peculiar characteristics of the region, and the fact that water was very scarce and unavailable. Several hundred sketches were obtained, accompanied by the scale of size, notes as to age, erosion, color (if any) or depth of chipping and memorandum as to the exact location, altitude, points of compass, topography of the region, and the names of any contiguous stream, ruin, hill, cliff or canon, and the geological appearance of the location. This necessitated, as a result, considerable time and trouble, yet in glancing over the mass of material obtained during the four months in the field, I feel amply repaid.

The peculiar weathering which occurs at the end of what is called a "box canon" (i. e. a canon which comes to a sudden end, with the two sides closing in), forms generally a large cave greatly resembling an amphitheater, and, when of sufficient size, like those of Monarch's Cave, Giant's Cave and Casa del Echo in Utah, the echo is deafening. The buildings in these caves are similar to those found on the ledges in the cliffs, and are generally protected by an outlying wall from one side of the cave to the other, from four to six feet high, pierced with many loop-holes and peep-holes. The walls of the caves are, in most cases, covered with paintings or chiseled pictographs. We have found red, yellow, brown, green and white paintings of the figures of animals, human beings, symbols greatly resembling rude hieroglyphic signs, and many figures of the human hand. This is one of the most perplexing symbols found in this region. We find it in almost every cave, and in many cliff dwellings, painted or slapped on by hand (dipped into the paint previously), in red, yellow, brown, green and white colors. In some of the caves, almost a hundred of these symbols may be seen, in others only one or two. What peculiar significance does this symbol have? Surely a mere caprice or childish impulse would not be so widely spread over the whole region. One day when returning to camp from one of the side canons in Butler's Wash, Utah, tired and

thirsty, for water was peculiarly scarce, we noticed at one place on the bare stone wall of a canon, about eight feet from the ground, a painting of the human hand in green. We went over to examine it more closely, and found, much to our surprise and delight, directly under it, a small spring of clear, cool water, which bubbled out from the sandstone ledge, ran a few feet over ground and then disappeared again, the dry soil soaking it entirely up. Was this peculiar symbol put there to mark the the spring? Or was it the silent offering of thanks to some unknown deity for the long wished-for water, so scarce in this region? Whatever it was, it was always accepted as a good omen to our party after that incident, and we almost held it in reverence.

The symbols of the hand seem to be the most frequent of all the pictographs found in this region. It appears also to be distributed over a far wider region than this, however. George Smith* mentions them in his "Assyrian Discoveries;" Le Plongeon† finds them in his explorations among the Mayas and Quiches; Stevens‡ met them often in his travels in Yucatan, and says of them: "On the walls of this desolate edifice were prints of the 'mano colorado,' or red hand. Often as I have seen this print it never failed to interest me. It was the stamp of the living hand. * * * These prints were larger than any I had seen. The Indians said it was the hand of the *master of the building*." * * * The symbol is also a common one on the hieroglyphic tablets of Copan and Palenque. Further north it also occurs quite commonly. Mr. Schoolcraft§ says of it: "The figure of the human hand is used by the North American Indians to denote supplication to the Deity, or Great Spirit, and it stands in the system of picture writing as the symbol for strength or mastery, thus derived." Mr. Warren K. Moorehead, in a masterly article|| on this subject, concludes as follows: "The hand occurring in groups of pictographs has no special significance, and is to be read as part of the picture series. The hand upon pottery, shell, or stone, may be ceremonial, ornamental, or the totem of the tribes to which the possessor of the object belongs. * * * Primitive man could not have chosen a better symbol. He knew that his hand was the most useful portion of his body, yet he was unable to understand its delicate mechanism, or appreciate its wonderful adaptability to a thousand varied uses. Yet he employs it to represent the power, authority and rights of man." This curious symbol occurs quite often in the Mississippian Valley on pottery, shell, and stone, and is also mentioned by such emi-

*"Assyrian Discoveries," by George Smith (New York, 1875), page 429.

†"Sacred Mysteries of the Mayas and Quiches," by Augustus Le Plongeon (New York, 1896), page 40.

‡"Incidents of travel in Yucatan," by John L. Stephens, Vol. II, pages 46-7.

§In the appendix to Vol. II.

||"Symbol of the Hand," by W. K. Moorehead, in *Illustrated American*, Vol. 3, page 610.

nent authorities as Messrs. Squier and Davis,* Mr. W. H. Holmes,† Rev. S. D. Peet‡ and General G. P. Thurston.§

Symbols of frequent occurrence among the groups of pictographs in this region are as follows: The dragon fly, the rainbow, the sun—objects of reverence to the living Pueblos; the human hand, the elk, the goat, the antelope, the bear, the red deer, the coyote, the snake, the lizard, the turkey, the turtle, the bull-frog, the centipede, a figure resembling the track of a crow's foot, the figure eight, the human form, generally with arms up-lifted, a figure like the letter S, figures shaped like dumb-bells, circles, targets, imitation of imprints of bare feet, but much smaller, rows of dots and lines, crosses and cross lines often resembling the ancient Runic inscriptions, although of more uncouth workmanship; concentric circles, spirals, parallel lines, arrows, fowls and animals of unrecognizable species and occasionally with one or more superfluous legs, together with hundreds of undescribable, unrecognizable, and perhaps unmeaning figures.

Judging these figures as works of art, they rarely excel the rudest and most uncouth drawings of childish imagination, but in some cases more intricate and more elaborate scenes were undertaken. These may be found on the Upper McElmo, in the Canon de Chelly, along the San Juan in many places near its mouth, and in Butler's Wash, which empties into the San Juan. Mr. Bickford describes a curious group which he found in the Canon de Chelly, which is a characteristic specimen. He says: "The most remarkable I studied for an hour with the glass, seated three hundred feet below, but could make but little of its meaning. Its was probably a battle scene, but it might have been a dance or sacrifice. A row of thirteen black forms were pictured as marching elbow to elbow, and below them was a group of seven similar but headless forms. Two forms in yellow, the larger leading the smaller by the hand, were represented as running away from the advancing rows, while a gigantic figure in black standing upon the head of a yellow bull-frog was shown in the act of hurling javelins at the approaching army."§ The most important location which I have personally visited was at the mouth of the Hovenweep, where it empties into the McElmo. At this point we found several elaborate assemblages of pictographs, and also large numbers of smaller groups. One of these was described by Mr. Jackson, who visited that location sixteen years before, but none of the others were ever mentioned or described. This group is situated about one mile east of the junction of the two creeks, and is found in a large rock shelter,

* "Ancient Monuments of the Mississippi Valley," by Squier and Davis, page 224.

† "Art in Shell of the American Indians," by W. H. Holmes.

‡ AMERICAN ANTIQUARIAN, Vol. VI, No. 2, pages 119-22.

§ "Antiquities of Tennessee," by General G. P. Thurston (Cin., 1890), pages 126 and 25.

"Prehistoric Cave Dwellings," by F. J. Bickford, in *Century Magazine*, October, 1900, pp. 90-911.

with the remains of a tower on the top of the boulder. One side of the rock was literally covered with picture writings and signs, of which we obtained an excellent photograph.* The human form, deer, goats, lizards, snakes, bears, turkeys, and many other birds and animals are distinguishable, while intermingled with the figures are numerous symbols and signs, which appear to be hieroglyphic in character.

Another important group—the most significant on account of some of the peculiar symbols found in it—is situated about one hundred yards west of the McElmo and one mile east of the junction of the two creeks before mentioned. In this assemblage, the most striking figure is that of the swastika cross, measuring seven inches in height and six inches in breadth, and very ancient in appearance, being on an under surface entirely protected from erosion and weathering. Around it are many curiously shaped figures, some in the shape of figure 8's, circles, dots and lines, dumb-bell shaped figures, human forms and hands, and many others, the shape and appearance of which belie description.

In this vicinity there are large numbers of interesting rock shelters which are worthy of the attention of archæologists. Although they occur quite commonly at short intervals along the canon, it is just beyond the junction of the two creeks that we find hundreds of huge boulders and blocks of sandstone that have fallen from the scarf of the promontories near by, having been previously undermined by the washing away of the softer strata forming the talus. It is under these huge blocks that we find hundreds of rock shelters, all showing indisputable evidences of human occupation. Many are blackened by smoke and fires, many have rudely constructed walls across the entrance and rear, and in under the rocks, unexposed to the weather in almost every case, I have found rude pictographs—the smooth surface of the sandstone rock offering tempting tablets to the aboriginal artist. These inscriptions, if I may call them such, were of especial interest, and in this one locality we sketched over fifty groups. That they were made by the dwellers of these rock shelters is indisputable, and in fact whenever we found a pictograph in this immediate locality, and in among these huge rocks, it was only necessary to look under the rock or a few feet away to find the rock shelter. By "rock shelter" I mean a cavity, cave or shelter formed by two or more of these rocks leaning against each other, and in which are found indisputable evidences of human habitation. Oftentimes they are formed by only one large boulder, being weathered out in the manner peculiar to this region, thus leaving a good shelter underneath.

The question now arises as to whether the pictographs of the

* "Ruins and Picture Writings in the Canon of the McElmo and Hovenweep," by Lewis W. Gunkel, in *Illustrated American*, Vol. XI, No. 121, p. 325.

region, taken as a whole, were made by the so-called "cliff-dwellers" and ancient pueblo tribes. Of this there can not be the slightest doubt if we make an exception of the modern looking pictographs and inscriptions which, even to this day, are scratched or painted on the rocks by the wandering and vagrant tribes of Utes or Navajos. These Indians are supremely superstitious, and will not (until semi-civilized by intercourse with the whites) enter a cliff house or ruin for love or money. This we have often tried. Yet in Utah pictographs invariably are found either inside or in close proximity to ruins, either on the cliffs or mesas. Moreover, the ones found in these ruins are invariably similar to each other, in appearance, in style of workmanship and in the symbols and figures used, even though when found at great distances apart. This in itself would not tend to prove the fact absolutely, were it not for the following facts: Along the San Juan and in Butler's Wash ruins were often observed in the high and inaccessible cliffs and ledges, far beyond the reach of the longest ladder. It was impossible to reach them from above or below, on account of the erosion of the ancient foot-holds and steps cut into the rock. These had, without doubt, never been entered by any one, either white or Indian, since they were deserted by the owners. We had come prepared for such emergencies, however, having brought an immense quantity of strong rope. Five of the men were usually sent up to the top of the cliff carrying the rope, and upon reaching the point over the ruin lowered it until it was caught by one of the party below. One man was stationed where he could be seen by both parties, and he signified to the men far above when to pull up or let down the rope. In this way we entered the most inaccessible ruins on the ledges under over-hanging cliffs. Where the cliff was slanting and not over-hanging, we were lowered into it from above, instead of being pulled up from below.

In every case where we entered these high ruins, pictographs were found exactly coinciding with those in the other lower cliff houses and caves, and could have been made by no one but the original inhabitants. The ruins themselves were in exactly the same condition as they were when deserted, only more aged and half filled with the crumbling debris of the weathered sandstone rocks and ledges which formed their outer and inner walls. In this age of rapid advancement and deep learning, it is difficult to conceive and realize what significance these rude and uncouth attempts at writing could have had to those who first designed and executed them, during their hard struggle for existence, among the high cliffs or on the desolate sandy wastes.

ETHNOGRAPHIC RELIGIONS AND ANCESTOR
WORSHIP.

BY STEPHEN D. PEET.

The review of aboriginal religions which we have been giving has convinced us that there is a large amount of symbolism which belongs to prehistoric times, and that there was a geography of religion, as well as a history. This position is confirmed by the study of the map, for we find that most of the symbols were confined to certain limited districts, and were very uncommon outside of those districts, thus making certain grand divisions which are suggestive of a previous development. The boundaries which limit these districts are, perhaps, not quite as definite as those which now separate grand political provinces, but they are more closely conformed to the physical peculiarities of the continent, and more distinctly marked by material barriers, such as mountain ranges, forest belts, climatic zones, altitude, and soil, all of which seem to have had an effect upon the condition of society, and so upon the form of religion.

This is a very important point, for it reveals to us the wonderful and mysterious law which prevailed in native society, and which unconsciously molded all institutions and customs. It shows that there was a religious sentiment in the native mind, which could not be hindered by any amount of social privation, and which was not helped by educational privilege, but was greatly influenced by natural surroundings. This sentiment was constantly pressing upon the native mind, and was calculated to bring it out from the lower grades and the darker superstitions into a higher life and light. We do not know its source, but imagine that the spirit of the Almighty through it is affecting human creatures with the spiritual life which is in Him, as in a great reservoir, this having a constant tendency to bring up human thought to a higher level, and to reveal through nature His own attributes and being. This does not do away with the doctrine that there was a revelation, but, on the other hand, shows that there was a necessity for it; and yet it furnishes a key to the problem and enables us better to enter into the study of comparative religions. The review of geography will therefore be appropriate at this time. We are to study the subject of ethnographic religions, but shall take ancestor worship as one of the series.

Let us take up the map of the continent and study out the localities in which each form of religion has had its chief development, notice the boundaries within which the symbols have been discovered, and ask why it was that within such boundaries

the particular cult should have had its history. That there was an evolution of one form of worship out of another, is one of the first lessons taught us by the map. If we begin with the localities where society was at its lowest stage, and where human nature was in its most degraded condition, we shall find each form of religion corresponding to the physical surroundings as well as to the social status. The process of development, however, appears as we go out from one district into another, for we may see that in those localities where society reached a higher stage, and where the surroundings were more favorable to human growth, there religion partook of the social status, and itself reached a higher grade. We find, then, that we are taking steps upward, are following an ascending series, coming out of the darkness into the light, out of the uncertain and indefinite into the positive and well defined, each geographical district furnishing not only a new phase of religion, but also one that was more highly developed and more complete in its outline. The results in which the different systems have been identified are very instructive, for they show that there was a law of correlation everywhere prevalent, and a conservation of influence everywhere at work.

The different religious systems may generally be arranged according to the belts of latitude, and the order of succession may be traced from the north to the south, each zone having its own particular form of worship as well as its social status, mode of thought, and stage of development. The figure of a pyramid may be drawn on the case of aboriginal religions as well as in the case of architectural structures, for these stretch across the continent in broad zones, but arise in successive steps, then advance in a regular way with the advance of society. We note that the more intense the worship was in the lower stages, was a dim and vague sentiment, or spirit and demon worship, comes out at last the worship of a divinity whose attributes are entirely personal. Man himself does not seem to have been reached, yet there was an approach to it, for the personality of the divinities became more and more prominent, and the influence of the personality here is at last almost supreme. Personality does not limit ancestor worship alone, for it appears in every locality, the ancestral spirit having been ascribed to the rocks and the trees, to animals and nondescript creatures, to the various nature forces, to storm and lightning, wind, to the heavenly bodies, the sun and moon—as well as to the culture heroes and ancestors. The lowest stage was found among the Eskimos of the north, the lowest of the commons, and the highest among the Mayas of the south, among whom the personal divinity was symbolized.

The arrangement of the different systems of religion according to the belts of latitude is very suggestive; it shows that the

climate had an effect upon them as well as the soil; the influence, perhaps, being first felt by the employment and the mode of life; the social status, the religious beliefs and the customs being correlated to these. We may take each zone and follow it, arranging the tribes or races according to their languages and location, but will find that there are certain centers in which the mythology, the symbols and the customs show a certain divinity as supreme. The following are the systems which have been recognized in the symbols preserved in prehistoric times and confirmed by the myths, and are now laid down on the map as an approximate geography of the aboriginal religions on the continent. There were two or three lines of development, one which followed the east coast, another the west coast and another passed down through the central axis. Local tribes had their particular forms of worship, but the steps or grades will be recognized in the parallels which correspond to the belts of latitude. The following is the order:

1. Shamanism. This was the religion of the fishermen of the Arctic regions. It may be regarded as the lowest form, though it varied in its character according to the locality and tribe. It was a system which prevailed through the entire Arctic regions, including Greenland on the east, and Point Barrow on the west, and extending down to the Tinneh tribes on the Hudson's Bay, and the Aleuts in Alaska. Among the Tinnehs and Aleuts it was in the extreme of degradation, the myths being full of vulgarity, the customs senseless, and the superstitions numerous. Here the shaman was a sort of religious juggler or magician, who exercised absolute control over the people by means of his arts and pretensions. The people themselves were divided into castes, which were said to have originated when all fowls, animals and fish were people. The fish were the Chitsah, the birds were Taingees-ah-tsah, and the animals Nat-singh.* These were the ancestors of the different tribes, as well as their divinities. The shaman had great power over these animals. The evil spirits were under his control and demons were exorcised by his magic. He seemed to dwell in the midst of the supernatural and to have power over all the elements, and yet there was always a spirit which was beyond his control, which the people recognized as the great ancestor of all. This spirit assumed different shapes in different localities and had different names given it by different tribes. Some have called it the Great Spirit, recognizing monotheism here among these darkened and degraded people as they do among the hunter tribes and more advanced races of the south. The term Great Spirit has been objected to as conveying the wrong idea, but it is nevertheless suggestive in this connection, for the Great Spirit is always identical with the great ancestor, though the

*See "Notes on the Tinneh Indians of British America," page 315.





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form. The image was found in a mound near Newark, Ohio. It represents a human form clad in bear's skin, the head being brought over the crown and serving as a sort of head-dress after the fashion of the lion's skin of Hercules and Alexander. The entire head of the bear is on the top of the head of the man, while the arms of the man appear inserted within the skin of the fore legs of the bear. One arm is drawn around the front of the body,



Fig. 2.—Bear Idol from the Mounds—Front View.

the other is at the side of the face. The feet of the image resemble those of the bear, though the knees are those of a man. The sun symbol is found in the four dotted circles, or disks, which are between the knees and the elbows. It is a most remarkable image, there is nothing like it on the continent. It reminds us of the old world traditions, and in this respect resembles the image with the serpent, the tree and human face combined, which was also found in the same region, on the Ohio river.

We class this image along with the idols which were described in the chapter on idolatry. It reminds us of the so-called "Exeter" vase. This vase or altar has on three sides the face of an animal, but on the fourth a human face, showing the same

conception, but in a different way. The bear idol resembles in some respects the images found in Nicaragua and described by E. G. Squier. In these idols the human figure is covered by a monstrous head, either of an alligator, wolf, or bear.*

3. The third stage was sun worship. This prevailed among the agricultural tribes of the central and southern states. It was the cult of that ancient people called the Mound-builders. It also prevailed among the Indian tribes which lived in the same region at the time of the discovery. There is evidence that ancestor worship prevailed among the sun worshipers, as its symbols are mingled with the sun symbols, which are so numerous. Certain customs which represent it were practiced by the living tribes, especially by the Natchez and the Muskogeans. These rites and ceremonies illustrate the point which we have in mind. The sun was personified and was worshiped as a person. The attributes of the sun divinity were symbolized under the semblance of human images or idols, as well as under the form of the sun itself.

The early explorers have described human images as very common in the Gulf States. These images were generally found in the dead houses or ossuary temples, and were supposed to represent the ancestral divinities of the people. The images were placed inside of the doors, and not only guarded the bodies of the dead, but the treasures of the living, for the dead houses were often the places where the treasures and sacred things of the people were deposited.

We furnish a cut to illustrate this point, though the image was found on the West India islands. See Fig. 3. It has been described by Prof. O. T. Mason.† The carving represents two individuals seated on a canopied chair. The chair has a high back, ornamented with scrolls and concentric rings. Both individuals have embroidered skull caps, resembling the close-fitting embroidered caps of the Indians. The legs have bands of embroidered cotton just above the calves, which resemble those bands which were common among the Caribs, at the time of the discovery. They may have been portraits, for the description given of the natives is as follows: Their eyes were encircled with paint so as to give them a hideous expression, and bands of cotton were bound firmly above and below the muscular parts of the arms and legs, so as to cause them to swell to disproportionate size.‡ This image was 31 inches in height.

Another figure, carved from a single log of wood, represents a human image resting upon arms as well as legs. There are on it earrings, or ornaments, and bands around the arms similar to those on the seated images. The length of this is 43 inches.

*See "Bancroft's Native Races," Vol. IV, page 51. "Nicaragua," Vol. II, page 39.

†See Smithsonian Report 1864, page 831.

‡Washington Irving. History of Columbus.

The discovery of these images in the West Indies suggests a connection between the island and the continent in prehistoric times, or at least conveys the idea that a similar custom of making idols which should represent ancestors, prevailed in both regions. The



Fig. 5 — Carved Images from the West Indies.

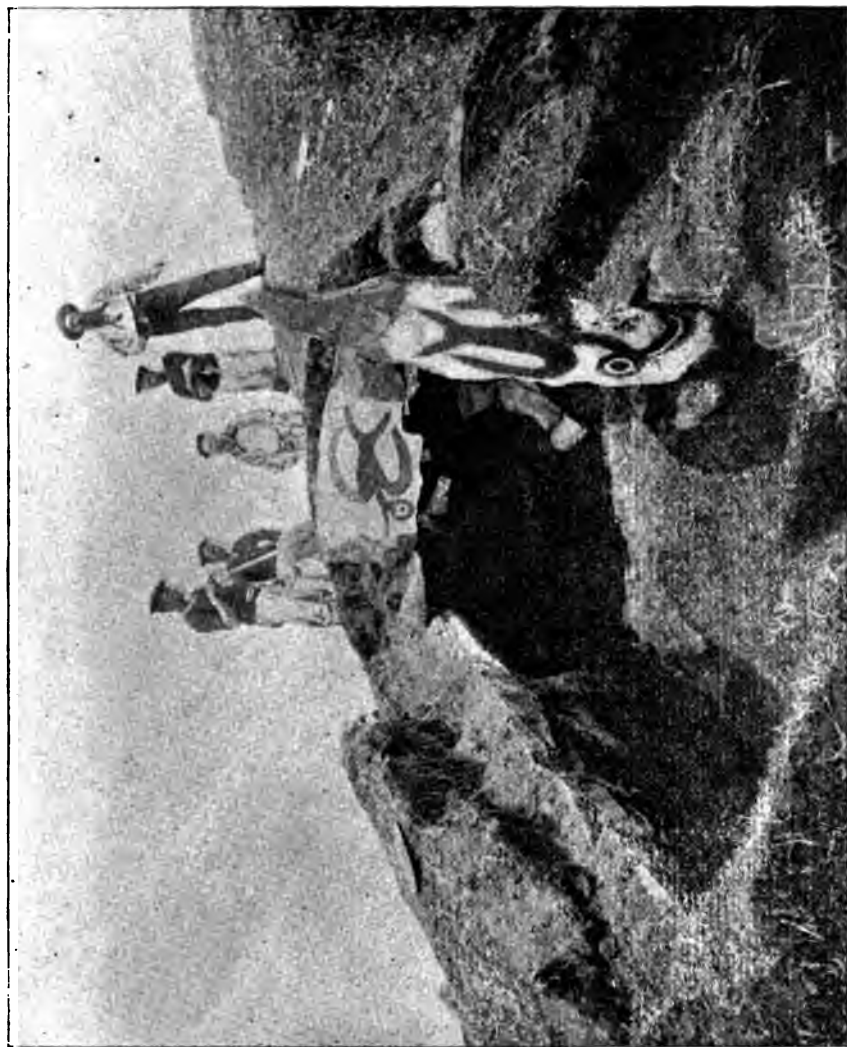
distinction of sex among the nature divinities is often shown by the idols. The sun and moon were regarded as male and female, and all the nature powers were arranged according to sex. The mythologies of sun-worshippers were full of stories with regard to the pairing of divinities and with regard to miraculous births. These myths were sometimes embodied in the idols.

We notice that such images were common, especially at the south, suggesting that the southern races were all idolaters, but animal figures or totems were more common at the north, suggesting that the northern races were animal worshippers, the difference between the two arising from ethnic causes as well as from the influence of environment. Still there is nothing unreasonable in the theory that both systems were prevalent in all parts of the continent, even if they originated in separate centers and found their full development in particular districts, for the spread of symbolism from one district to another was very natural. If we take the different religious cults of the Mississippi Valley, we shall find that some of them were purely local and never went beyond the bounds of their first habitat. Others were widespread and became almost universal.

4. Sabeanism, or sky worship, is the fourth form of aboriginal religion which we are to consider. This was also a local cult. It found its chief development among the Pueblos of the interior. It consisted in the personifying of the nature powers and in making them divinities. There was perhaps not as much of the element of ancestor worship in this cult as in those which we have just considered, yet when we analyze the system and study the symbols we shall find that it was not entirely lacking. The chief peculiarity of sky worship was, that the sky was a house, or rather made up of a number of houses; the four quarters, and the upper heavens or the zenith and the lower earth or the nadir, each of them constituting a house or habitation for the divinity. The houses all had different colors; that in the north was yellow, in the east white, in the south red, in the west blue, the upper sky spotted, the lower black.* The houses were guarded by animals, each of which had a color corresponding with that of the house. The central divinity was in the shape of a human being, thus conveying the idea that ancestor worship or image worship was as prevalent here as elsewhere.

The divinities of the Pueblos were varied. Some of them were represented by rude images in the shape of animals which were called fetiches, others by human images, which were really idols, but at the same time reminded the people of their ancestors. The symbols of nature worship are peculiar. They represent all the nature powers personified, but personified under the semblance of animals, birds, serpents and nondescript creat-

*These are the colors of the houses among the Zunis. The fetiches or idols of the Zunis were, yellow limestone mountain lions for the north, coyotes for the west, red wild cats for the south, white wolves for the east, eagles for the upper regions and moles for the lower. The human-headed divinity was the tutelary god of several of the societies, and was the hero of hundreds of folk-lore tales. His dress consisted of the terraced cap representing a dwelling place among the clouds. His weapons are the rainbow, the lightning, and the flint knife. His warriors are the mountain lion of the North and of the upper regions. The shield had the image of a white bear, eagle and two serpents upon it, all of them beings of the skies. The shields had different colors—red, blue, green, yellow, white, black. Different symbols were used by other tribes, and the colors differed, but there was the same conception of personal gods ruling the sky. See Third Annual Report of Bureau of Ethnology.



TOTEMIC DOOR POSTS OF THE STONE HOUSES, OCONGO, EASTER ISLANDS.

Figs. 4 and 5. The description of this idol is as follows: On the head was a turban with banded edge; on the front of the turban an arrangement of plumes secured by a double knot; ear-rings, gorgets and mask were suspended from a necklace; braided folds as of cloth fell from the turban behind the ears, and a medallion shaped ear-ring in front of it; from the upper margin arose a crest, which curved over toward the front and ended in a tassel.



Fig. 4.—Idol from Guatemala.

The head of the old man in one of them had deep lines on brow and cheek; nearly the whole of the ear was taken up with cylindrical ornaments. The head-dress was composed of the body of a bird with outstretched wings. In the other head the eyes were represented as hanging from their sockets; the long ears were adorned with heavy ornaments; on the top was a small cap, jauntily placed to one side. There is upon these images a variety of symbolism which is suggestive of sun worship and nature worship, but there is a prominence to the human face which convinces us that human art has worked free from the symbols of nature worship into the realm of portraiture.

We do not know their history, but there is one peculiarity about these portraits which is very suggestive, conveying the idea that ancestor worship was mingled with the hero worship. There is the appearance of great age in some of the idols. This may be owing to the fact that a venerable appearance would heighten the spirit of devotion and so the idols would be held in greater reverence. But it shows that ancestor worship was a



Fig. 1.—Idol from Guatemala.

more elevating influence than either animal or nature worship, and that it had even a more sacred character. We call attention to the contrast between these figures or idols from Guatemala and those which were images of the nature gods in Mexico. In the latter the images are covered with the most horrid objects in nature, crotalus jaws, serpents' fangs, serpents' tails and rattles, the claws of beasts, grinning skulls, horrid looking eyes, mutilated hands, the ensigns of royalty placed upon them as if in mockery, the whole figure the shape of a cross, making a travesty of the most sacred symbol of religion. These idols of Guatemala are far more serene and kindly, and show the mild form

of religion which prevailed. The medallion ear ornaments of these figures may have been symbols of the sun, though the head-dress has the body of a bird in the front, the outstretched wings of the bird making the ornament, the head and tail being arranged in front and behind, the whole resembling the vulture head-dress of one of the Egyptian goddesses. These resemblances between the old world and the new world symbols and ornaments are very remarkable, and deserve more study than we can give them at present.



Fig. 6.—Curved Stone.

6. Ancestor worship was a sixth form of religion. We find its chief development on the northwest coast of the continent. Why this was it is difficult to determine, though there may have been unknown causes which produced the development of the system in this region. In some respects ancestor worship here was of a new type, contrasting strangely with the shamanism which prevailed so near to it. Is it not singular that two systems so unlike one another should have been developed so near together. How do we account for it? Shall we say that it was owing to an ethnic difference, the Esquimos upon one side having inherited shamanism, the Haidahs, the Thlinkeets, and the Columbian Indians having inherited the ancestor worship, or shall we ascribe it to the influence of an intruded cult, namely, the ancestor worship which prevailed on the northeast coast of Asia, in China and Japan.

Dr. Franz Boaz thinks that the custom of erecting these ancestor posts springs from the ancient habit of carving smaller objects and preserving them as mementos of ancestors, the acquaintance with iron tools making it easy for them to carve the same symbols upon the larger posts. He maintains that the ancestor posts are mainly modern in their origin. This does not, however, account for the mystical philosophy and strange superstition which make every part of an ancestor post expressive of the line of descent, as well as of the family history. The mythologic traditions which so personify the various animals and make ancestors of them are here embodied, but they are made to magnify the family history. See Fig. 6.

(1.) Let us then here study the art motives and consider the symbols which were hidden beneath them. Various writers

have recognized the resemblance between the ancestral posts of the northwest coast and the carved figures found in New Zealand, but have refused to ascribe them to the same source, or to acknowledge that there was any contact between the natives of the continent and those of the islands, notwithstanding the fact that the oceanic currents could easily bring the New Zealanders into contact with the tribes of the Pacific ocean.



Fig. 7.—Slave Pipe.

There were several art centers along the Pacific coast, one among the Esquimaux of Alaska, another among the Thlinkets of Oregon, a third among the rude California tribes, a fourth among the ancient Aztecs of Mexico, a fifth among the ancient Mayas of Honduras, Nicaragua and Guatemala, a sixth in the northern provinces of South America, a seventh among the ancient inhabitants of Peru; but all along the line we recognize an extra limital influence which gives to the art found upon the Pacific coast an entirely different character from that which is found on the Atlantic coast, and which also distinguishes it from the art of the deep interior. The mythologies of this region do not show as much of the influence as do the art forms and symbols, yet the myths of the northwest coast are as different from those of the eastern wild tribes as they can well be.



Figs. 8 and 9.—Slave Pipes—Whale Kuler.

20 The contrast between the myths and symbols of the northwest coast and those of the eastern tribes will be suggestive. We find that the tents of the Dakotas were frequently covered with the totems of the clans, and that the record of the family and clan could be learned from the paintings. There were few human figures, for the reason that the animal names were given to ancestors, and these names would be recognized in the figures. The totems of the eastern tribes were arbitrary and conventional,

figures which could not be changed. A chief might, to be sure, decorate his person according to his own taste. He could also carry about his dress the emblems of his own personal exploits. In fact, he could carry the record of his own life in his dress and equipments. Every chief had his own paraphernalia. There was scarcely anything in this which was not significant. The horns on his head, the plumes which he wore, the decorations of his spear and the emblems upon his shield, the paint or tattoo upon his face, the ornaments upon his belt, were suggestive of his history.

Among the Haidah Indians the history of the family could be recognized in the animal figures and human faces, for the portraits of the ancestors were embodied in them. The carved columns have an individuality about them. There is generally a thunder bird carved somewhere on the column, to signify the natural divinity, but its position is not uniform. There are in the modern posts, heads and hats resembling those of white men; these surmount the thunder bird. The greatest liberty was taken by the owner of an ancestral post. He was held by no law of the tribe or of the clan. He could arrange his personal totems along with his ancestral portraits to suit himself. He could leave wide spaces vacant, or could fill them with mythologic figures. The carving was more or less elaborate, according to the means of the individual, and the entire post became a representative of the wealth of the owner, as well as of his ancestry. There was the same individuality in its carving that the chief had in his dress, and the art motives were the same in both. There was a vanity about the householders as there was about the chief, but it embodied itself in the carving, which became permanent rather than in the dress, which was so easily destroyed. The contrast between the totem figures and the ancestral posts may be carried out still farther. The chief took off his feather helmet and hung it over his own cabin. He would place his armor, including his shield, knife, bow and arrows, moccasins near his bed, but his family would be included with others in the clan's history. The communistic system required that he should have just such a position in the circle. In the ancestral worship there was no such arbitrary rule. The clan system became flexible and lost its hold. The family was the unit rather than the clan. There was no communistic system under its rule.

There was a great difference between the two regions. What was there in the organic faculty of man on the Pacific coast which should have led to the construction of the elaborate columns which was not possessed by those in the interior or on the Atlantic coast? They are found in the different zones, though the southern zones exhibit a higher stage of development than the northern. Why do not these symbols appear on the eastern coast as well as the western? The symbolic, artistic and

religious parallels would require this process, but it does not exist. How should we account for the difference? We maintain that the system must have been transmitted from the Asiatic continent either by way of Polynesia and the eastern islands, or by way of Mongolia and the Aleutian Islands.

There was a form of ancestor worship in Mongolia which seems to have been transmitted through the wild Algonquins tribes and which cropped out in the carved posts which surrounded the dance circle among the Powhattans in Virginia. But no such elaborate mythologic creations appear anywhere except on the Pacific coast and in the islands of Oceanica.

(3.) The resemblance between the totem posts of the northwest coast and the carved idols in New Zealand, however, is worthy of study. There are carved posts at the caves and ridge poles of the houses, and carved figures on either side of the door and covering the entire front, in both localities. The Haidah houses are much ruder in their construction, the pillars are not elaborate, but there is the same general arrangement. They are built in stories one above the other; the faces always looking out toward the sea, very much as the idol pillars of the Easter Islands look out. It is singular that the Pacific coast should be marked by these columns which we call portrait pillars, and that the Atlantic should be entirely destitute of them.

THE PALESTINE EXPLORATION FUND.

BY THEODORE F. WRIGHT.

In the belief that its work is of universal importance the Fund has been induced to make a full exhibit at the Columbian Exposition. At first a place was assigned to it in the Ethnology building, but, as that building was greatly delayed, the exhibit of the Fund was transferred by means of the kindness of all concerned to the Liberal Arts building, where it will be found in the southwest gallery, in the British section. In setting up the exhibit President Loughridge, of the Young Men's Society for Biblical Research, and Dr. Waterman, local secretary, have been very helpful.

The exhibit includes all the publications of the Fund from the beginning in 1885, the large and now very rare volumes of the Palestine survey; the single volumes dealing with local work and discoveries, and the full series of quarterly statements. Besides these there is a very full assortment of photographs. Casts of certain inscriptions and objects are also to be seen.

The department of maps is also full, and no such opportunity has ever been given to see the greater and smaller maps which represent, in the fullest degree, the surveys and identifications made during twenty-five years. Especially will the interest of visitors be attracted to the raised map on which Mr. George Armstrong has labored so long and skillfully. He made great efforts to finish it in time and only succeeded by the greatest exertions. A fuller description of this map will be given at another time.

To these productions of the Fund a collection of excavated objects in silver, bronze, iron, glass and pottery has been added by the undersigned to the number of about one hundred. No general collection has been made for this purpose, but rather the aim has been to show the actual fruits of excavation. Some of these objects are flint knife from Lachish mound; mirror, bracelets and idolatrous images in bronze; sepulchral throne of metal; mosaics and tear-bottle in glass; Iron keys, spike, horse-shoes, etc.; fossils and quarry-stone; lamps, images and vases of pottery; coins in silver and copper of all periods. The collection also includes weapons and tools made of iron, wood, or of both, leather bags and bottles, a trumpet of ram's horn, specimens of soil, and other objects which seem to connect themselves with this work. It is hoped that all who are interested in this exploration work will freely inspect the exhibit and so make themselves familiar with what is going on. Mr. Walter Besant, honorary secretary, will be in attendance a part of the time. The writer expects to be in attendance nearly all the time, and will be happy to converse with any who may visit him.

Editorial.

THE OLD AND THE NEW AT THE WORLD'S FAIR.

The Columbian Exposition, with its startling display of architectural beauties and with its wonderful exhibit of the products of the world, is occupying the attention of all classes. The papers and periodicals are full of descriptions of it. Many books have been written about it, and more will be. There is one department, however, which has not been described, or, at any rate, has not been brought prominently before the public. We refer to the department of archæology and ethnology. We propose, therefore, to devote one or two numbers of *THE AMERICAN ANTIQUARIAN* to the subject, and expect to publish articles which may be furnished by various persons connected with the exhibit. For the present we shall only give the impressions received from our first visit. The impression is that a wonderful opportunity has been offered to make this department exceedingly interesting and prominent, everything has been favorable to this. Located on the shores of the great lake, whose wide expanse of blue water reminds one of the great ocean which was traversed four hundred years ago, the contour of the grounds as well as the number of lagoons within them, not unfitly represents the great continent which was discovered and the chain of the Great Lakes which was ultimately traversed. The arrangement of the buildings on the grounds might easily, with a few changes and additions, beautifully illustrate the progress of history, from the discovery up to the present time, and made the entire exhibit an interesting object lesson. We notice that at the south end is the Forestry building, the Anthropological building and the structure filled with models of the Cliff-dwellers' houses, while between them are arranged the various huts and houses occupied by the representatives of aboriginal tribes, while a little to the north is the convent La Rabida on one side and the East India building on the other side, thus making a fair picture of pre-Columbian America, and introducing history as conceived of by the great discoverer. Following this is the view of the old battle ships and the other vessels which represent the earliest periods of history. Still farther north the Agricultural building, the Horticultural and the Transportation, each of them filled with reminders of the old and the new, while crowded into the north end of the great enclosure were the many state buildings, each building embodying in itself the history of the state, and in

the midst of all the Art building and the Liberal Arts, making these the crowning work and representatives of the present time. It would seem as if with this arrangement it would have been easy to have brought all the departments together, so that a splendid scenic representation would have been presented and a unity of design have been made apparent to all. We realize that much effort has been put forth to make the department a success; explorations have been conducted among the Mound-builders of Central America and elsewhere; representatives of native tribes have been brought from great distances—from the north and south and east and west, and placed in their model houses, near the lagoon, in which their varied crafts are left to float. An assembly of Indians has been gathered here, and many have been permitted to look upon the representatives of pre-Columbian America for the first time. A splendid collection of historic and prehistoric relics has also been gathered from all parts of the world, including articles illustrative of the ethnological customs, the folk-lore, the primitive religions and primitive arts of the entire globe. We understand that this collection is already awakening much interest among specialists. Much popular interest has been shown in the Cliff-dwellers' concession, where a very large collection of Cliff-dwellers' relics have been gathered. We are sure that still greater interest will be taken in the exhibit now that it has been opened to the public.

There are, to be sure, collections in the Illinois building and in the government building, but these are near the north end of the grounds, and the collections are hidden away among other exhibits, so that they are not specially noticed by the people. The archæologists, who are accustomed to explore and know how to find relics, have discovered them and have been interested. In the state building belonging to New Mexico they have perhaps found a few Cliff-dweller or Pueblo idols, and possibly have been able to discover other ancient relics scattered about and hidden among new things, but they have not been very prominent, for many of the states have not appreciated the very things for which they are especially distinguished, and have left out from their exhibit the tokens of the prehistoric age. Iowa with its far-famed Davenport collection, Missouri with its two notable collections at St. Louis, namely, in the Academy of Science and that under the Historical Society, and Kentucky with its Nashville collection, and Ohio with its Cleveland and Cincinnati collections, and Wisconsin with its Madison and Milwaukee collections, have all failed to furnish an exhibit. Not even a mound has been erected upon the grounds, nor an effigy moulded out of earth, so as to give an idea of the work of the Mound-builders. Visitors from foreign countries and citizens of this country could form no idea of the antiquities of the country except for the special building.

The early history of the continent is much better represented. We go back to the Lagoon and the Forestry building: Here is the convent La Rabida, filled with the documents and letters, some of which bear the handwriting of Columbus himself, filled also with different portraits upon the walls and doors of the old fort or house in which Columbus lived, with weather-beaten boards. It had been interesting to notice the young men and women from schools and colleges, with note books in hand, passing quietly and respectfully from room to room and studying the maps and the time-worn documents and letters, admiring the portraits and looking upon the treasured remains of the great navigator. It has seemed as if the new was feeling the force of the old. This love for the great discoverer is admirable, especially as there has been so much adverse criticism in the histories which have been recently written. The advent of the caravels has brought this sentiment out. The three vessels built in imitation of those in which Columbus sailed, one of them, the Santa Maria, a copy of the original even in its furniture and equipment, all of them old fashioned and clumsy, approached the city, after a long voyage across the ocean and up the chain of the Great Lakes, the convent imitated in the "White City," imitative of the convent in Spain, being the end of the voyage. The modern city stretches with its suburbs nearly fifty miles along the lake shore. The great city sends out its welcome in a fleet which was composed of every kind of craft, all of them modern. Everything in the city is new, not a vestige of the old. The contrast is great; it was, literally, a new world giving welcome to the old. The multitude bestows honor upon the few who are long since dead. The hopeful aspiring give honor to the once desponding hero; the boundless opportunities of the present throws out its hands to the privations of the past. It was a thrilling sight: the "White City" below the fleecy clouds giving recognition to the unseen heroes who have gone to the White City above. The event was one which would naturally inspire the present generation with an admiration for the past.

Enthusiastic also has been the reception given to the Viking vessel, which was built from the model of the boat which was exhumed from the mound on the shores of Norway, designed to imitate the vessels of the sea kings: a little open boat with shields on either side, dragon head in front and with a single mast. In such a vessel the Norsemen visited Iceland and undoubtedly reached the eastern coast of North America. The sight of the boat brings to mind the pre-Columbian age, and furnishes a connecting link between the ancient and the modern history, rather the aboriginal and the post-Columbian history of America. These vessels may properly be anchored alongside of the old war vessels and near the aboriginal houses, according to the fitness of things.

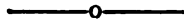
The Fourth of July also brought up contrast between the old

and the new. The little old flag which was shot away from the mast head of the Bon Homme Richard and was rescued from the water by the lieutenant, has been in the hands of his family ever since. A little old fashioned woman brings this flag onto the platform in front of the assembled multitude, 250,000; it is unfurled and swings out from the head of the flag staff. It is faded. There are only twelve stars on the blue field; Georgia had not yet come into the union of states. Washington's coat of arms is represented by the stripes. Paul Jones adopted these as the emblem for his vessel. The sword of Washington is displayed in connection with the flag; the Revolutionary war is brought to mind by the scene. The Declaration of Independence in its pristine state has been photographed; it is placed in the Government building. The groups gather around the glass case and look with reverence at the document. The old "Liberty Bell" in the Pennsylvania building, cracked and weather-beaten as it is, has been noticed by the American people, who are always patriotic, more than any other object on the ground. The little old bell from Kaskaskia is also displayed in the Illinois building; those who have read the early history of the state and a few who have read the recent novels about Kaskaskia have looked upon this as a token from the past. If the model of the griffin and the picture of the fort Creve Coeur could only have been added, so as to represent the exploits of La Salle as a connecting link to early history, the thing would have been complete. The tokens of the Black Hawk war are also lacking, and so there is a gap between the old and the new and yet imagination easily fills it up.

The Transportation building is also suggestive. Here we find the engine, 999, that flies at the rate of 112 miles an hour, and just outside we find the Dewitt Clinton and the John Bull, the earliest engines used in this country. Fulton and Fitch's steamboats are, however, not to be seen. The multitudes of American citizens look for these things. There is an under-current of thought flowing through the grounds from day to day that will not be satisfied until all such things are seen. Pioneers will be honored. The survivors of the Black Hawk war recount the scenes of Fort Kellog in an old settlers' gathering at Freeport.

The spectacular exhibit called America, attracts thousands every night; the people have the history of the country before them. The art gallery is even visited by some with the hope that the great historical pictures may be seen. At the Centennial there were many such pictures; battle scenes, Catlin's paintings, Columbus in prison, the history of the art also in Mosaics and in the early gilt, on through the different periods. Here, however, the art display is mainly modern, not even the pristine of American scenery, some of which is so wonderful, are to be seen. Specimens are from all over the globe, but all

modern. Was the line drawn here? The old in the new would be interesting to those who visit the Art building. Still the architectural design of the buildings and their arrangements on the grounds are such as to command unbounded admiration; every student of classic Greece is impressed with the strange resemblance between these buildings, surrounded by their lagoons and courts filled with statuary and pillars, and the pictures of ancient Greece and Rome which have been stamped upon the mind; there the old and the new are combined in dream-like beauty and with a vividness unequalled before; no one has looked upon a scene more inspiring; few ever expect to see the like again; with all that may be lacking, this scene atones for all. The little hunter's hut on the Wooded Island, and the magnificent structures which seem like visions from the clouds, embrace the whole of history. The past and the present are brought near together. We who are so modern are akin to the ancients.



ETHNOLOGICAL NOTES.

The Popular Science Monthly for June has an unusual number of articles on ethnological subjects, as the following titles will show: "The Ceremonial Use of Tobacco," "Ethnology of the Yuruks," "The Revival of Witchcraft," "East-Central African Customs." The article on "Ceremonial Use of Tobacco" is especially interesting. It shows the different kinds of pipes and the different uses of tobacco, and brings out a great many new facts.

Pygmies.—An article on pygmies appears in *Popular Science Monthly*. The writer speaks of the different localities in which pygmies have been discovered in Africa, and gives a history of the various discoveries. He thinks the whole interior of the continent may have been inhabited by this singular race, but does not undertake to explain how they came into existence. Stanley was by no means the first one who discovered pygmies, though his adventures with them brought them up afresh. The fact that pygmies are mentioned by the earliest writers, such as Herodotus, and again by the latest explorers, shows to us how tenacious of life the wild tribes of Africa were. It may be that the wild tribes of America were equally tenacious of life, so that we may be compelled to go back to great antiquity to discover their origin.

ESTIMATES OF GEOLOGICAL TIME.—In *The Geologist* for June Warren Upham calculates the geological time as follows: Post glacial or recent, 5,000 years; the glacial, 15,000 to 25,000 years; the Cenozoic period, 3,000,000; the Mesozoic, 9,000,000, and the Paleozoic, 36,000,000.

Mr. Leverett enumerates the following stages of the glacial period, which we give in the reverse order. The last stage was the Champlain submergence. 6. Moraines with an altitude similar to that of to-day. 5. Shallow indented moraines, vigorous drainage, highest altitude. 4. Frontal moraine, the drift concealed. 3. Silt deposits, altitude several hundred feet.

lower than now. 2. Deglaciation and old soil, oxidation, low altitude. 1. Ice sheet, extending farther south, with feeble drainage. There was a prominent wave of elevation from south to north as the ice sheet departed which first raised the loess afterward and the areas of the glacial lakes, Agassiz, Warren, Iroquois, and lastly Champlain Lake, St. Lawrence, Hudson's Bay, etc.

PORTUGAL.—Prof. J. L. Vasconcellos divides the religions of Portugal into prehistoric, protohistoric, Eusso-Roman. The last he considers to be a mixture of the gods of the second period with those of the Roman. Prehistoric religions in Portugal are very imperfectly known.

SEA VOYAGES.—The Hindoos are all stirred up on the question whether sea voyages are permitted by their religion, and the old sacred books are studied with this point in view.

The Indian Antiquary for March and April have some interesting articles on folk-tales by Bernard Houghton, C. S., and some unpublished inscriptions in Sanscrit, datlng with the year 1331 and 933, by F. Kielhorn. This journal is devoted more to historic antiquities than to prehistoric.

FLUTE STORIES are very common in the east. They remind us of the story of Orpheus and his lyre. Have we any such flute stories in America? The transformation of men into animals is common, but is this transformation ever the result of music?

THE AGE OF THE HUMAN RACE.—An article on this subject by Rev. J. A. Zahm in *The Catholic Quarterly Review* for April mentions the Zodiacs of Denderah, and Esneh, 4600 B. C., refers to Chinese eclipses, classical books, Chinese classics, 2357 B. C.; Manetho's lists, 2691, B. C., to 2000 B. C.; the Turin papyrus, library of Assur, Barnipal, the Tablet of Nabonidos, 3800 B. C., etc., etc. The writer acknowledges that these prove a greater antiquity for man than Biblical scholars have been wont to concede.

ALASKA.—*The American Geologist* for May has an article on Alaska by John Muir, in which some of the Indian villages are mentioned.

PORTRAITS OF COLUMBUS.—The Bulletin of the American Geographical Society for March, 1893, has an interesting article on the "Portraits of Columbus," by Judge Charles P. Daly, accompanied by some fourteen or fifteen wood cuts. Several of these portraits are owned in America at present.

UNIVERSITY OF PENNSYLVANIA DISPLAY.—Signatures of the ancient Babylonian Kings, preserved to wondering nineteenth century civilization, in tablets and bricks and unglazed pottery, form part of a unique exhibit by the University of Pennsylvania in the liberal arts section of the Manufactures Building. These old Babylonian cuneiform texts are a part of the harvest gathered by the expedition sent out in the summer of 1888 under the auspices of that institution for the exploration of Babylonia, with the Rev. Dr. John Peters as director. The fragments which are shown in the Manufactures Building have been carefully chosen from the 8,000 clay tablets and the several thousand of vases and other inscribed objects in stone, which are in the possession of the university, and are considered the best and most representative articles unearthed by the expedition. Vases,

clay sockets, stone tablets, votive axes, bricks, stamped clay cylinders are among these things, in every one of which Assyriologists, to whom a cuneiform text is a sort of superior puzzle, with infinite possibilities of entertainment, will delight.

Even to scholarly people the exhibit yields much that is interesting, much that serves to establish a sense of kinship between modern times and the forgotten civilization of Assyria.

Of greatest value in establishing the names of the ancient Kings is the synoptical series of contract tablets and engraved bricks from Babylon and other neighboring cities shown in the collection. The tablets are of three distinct shapes—round, oblong, and square—and side by side with them is shown a stylus of copper with its pointed end with which the inscriptions were made on the soft stone. Besides furnishing valuable data the contract tablets throw considerable light on the customs.

Possibly the most remarkable of all these curious and interesting objects is a clay socket in diorite, the period of which is fixed as that of Sargon I., 2335 B. C. This was found beneath the ruins of the temple Ekur in Nippur on the southeast side of the Ziggurat. It is a great brownish stone, in the middle of which a slight depression is noticeable. On the side is a cuneiform inscription which is the largest of Sargon thus far known. It is written in the oldest Semitic dialect of Babelonia and the characters are archaic and beautiful. The message which it carries from antiquity to modern people is ominous in its portent. It reads as follows: "Shargam-shar-di (real name of the king) son of Itti Bel, the mighty King of Agade and of the Dominion of Bel, builder of Ekur, temple of Bel, in Nippur. Whosoever removes this inscribed stone, his foundation may the gods Bel and Shamash and Nanna tear up and exterminate his seed."

ACQUAILED MOUND IN MISSOURI.—Mr. A. S. Logan has described a chambered mound situated on the Missouri river, six miles below Jefferson City. The earth was removed from the top to the depth of four feet, and the wall was exposed. Excavation brought to light well-preserved human bones, another layer of clay, and another layer of bones which had been exposed to heat. At the bottom of the vault were other layers of bones which had been burned, charcoal and ashes, with small, flat stones, and earth between them from two to four inches thick. In the bottom layers were found about fifty tools made from the same kind of rock as the vault, and a sand stone pipe. The tools were made after no pattern, but selected for their cutting qualities, as they all had a more or less keen edge. They were found in a pile at one corner of the vault, the stone pipe on top of the pile.

RETIOS UNearthED FROM A MOUND IN KENTUCKY. One of a group of seven mounds, about half a mile above Taggart Creek, Kentucky, has just been opened for the first time. The event was one of much interest to archaeologists. The first find was a large block of mica cut in the shape of a triangle. This was only one foot under the surface, and directly under it were two finely-finished broken bowls. These evidently contained food, as there were several small bones and shells mixed in them. Nine inches beneath the bowls, in a deep bed of charcoal, was found the first skeleton. Its position was north and south. Near the hip was a copper badge covered with tooth and made of bark, which the salts of the copper had preserved.

Near the left shoulder was a fine lance, nearly six inches long, and a little to the left was a finely-finished spear. Another skeleton was also found a little farther to the south, but no relics were found with this one, it being a female skeleton.

Twelve feet of earth was removed below these burials before the last skeleton was uncovered. From the number of relics and the way the body had been buried it was apparent that it was that of a chief of great importance. The body had been laid with the head in a northeast direction, upon a deep bed of ashes and charcoal, and had been enclosed in a box made of broken limbs and branches of trees. The impression of these could still be seen in the soil where they had decayed. Under each knee had been dug a hole, each of which would hold a gallon.

They were filled with red ashes and burned bones. Around the neck was one string of sixty-seven fine pearl beads and another string of four hundred fine ivory beads. Around the left arm was a thin copper bracelet and on the right arm were three large copper bracelets. Under the hands were several small pieces of copper that had evidently been beads. The finest piece of all lay upon the front of the skull. It was a hammered piece of copper in the shape of a swan. This had rotted in the center but was easily put together. The copper was hammered out of the raw metal and showed great age. Around the hips were nearly 1,400 very small bone beads, which were greatly decayed. The whole body had evidently been covered with a mantle made of a grass of some kind, as several small pieces had been preserved and lay upon the copper.

The bones as they laid measured a little over six feet four inches. In life the dead must have been a very large man. From the condition of the teeth and part of the skull he was probably 40 years old at the time of death. The original mound had been but eight feet high, for at that height was a dark streak throughout the mound of decayed grass and roots, and a decayed stump of an oak tree extended from here up that had been over four feet through the center. This shows that the upper six feet and second burial must have been placed there at least thirty years later than the first burial. All of the bones were very black and showed great age.

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BOOK REVIEWS.

Abraham Lincoln. By John T. Morse, Jr. Boston and New York: Houghton, Mifflin & Co.

This life of President Lincoln is, taking all in all, the best which has appeared. It is not as gossipy and as sensational as the one by Herndon, nor is it as stately and fulsome as the one by Arnold, but is distinguished for truthfulness as well as dignity. There was so much variety to the life of this truly great man, so much difference between the external circumstances and internal character, between the early and late manifestations of character, that all biographies will necessarily differ, according to the view which the author may take. The author of this sketch has endeavored to take more than one view, and so has given to us the two sides of nearly every event, and is eminently just in his comments. We see the virtues of the young man, and the vices are hinted at but not dwelt upon. We see also the

personal victories and know that there were personal defeats. We see the personal strength and great wisdom, and know that there was occasionally a lack of wisdom. We see the events growing more important and momentous, but the man rising above the events, until he appears as the hero that he was—a modern Hercules in real life. There is nothing fabulous about the story. It is all true. Lincoln was a man like other men, but the more we see of him the more we realize that he was superior to other men. The book is a good history of the war, and will take the place of many other histories. It is convenient in its form. It is not too long nor too minute, yet it gives the chief events and describes the issues which were at stake. It is like going back to the very period and living the events over again, for we come in contact with the very spirit of the age. It is published in two volumes—the first devoted to the early life, the personal character, the events up to the breaking out of the war and the McClellan campaign; the second to the second events, closing with the martyrdom. It is a good division for the subject. We are glad to commend the volume to our readers.

The Geological and Natural History Survey of Minnesota. Twentieth Annual Report. For the year 1891. N. H. Winchell, State Geologist, Minneapolis, 1893.

An interesting article in this report by Andrew C. Lawson describes the new lake of the post-glacial period called Lake Warren. This lake covered twice the combined areas of Lakes Superior, Michigan and Huron. The outlets of this lake were at Ft. Wayne, St. Croix River and other places, all toward the present Mississippi River. The ancient shore lines of Lake Agassiz and Lake Iroquois are described in the same article.

Atlas der Völkerkunde. Fünfzehn Kolorierte Karten in Kupferstich, mit 49 Darstellungen bearbeitet. Von Dr. Georg Gerland. Gotha: Justus Perthes. 1892.

This is a very valuable work. It contains fifteen double-page charts in colors. The most of them are modern, and indicate the languages, religions and races at present on the globe. Under the head of religions are given: Evangelical Christians, Catholics, Greeks, Abyssinians and Mohamedans. One map is given to epidemic diseases, another to winds. Under the head of races we find, Indo-German, Arabo-African, Mongolian, American, Dravidic and Oceanica. Under the head of Mongolian, we have Ural-Altaic, Tibeto-Chinese, Kamschatkan, Ainos and Caucasian. Under the head of Indo-German we have the Romans, Greek, Celtic, German, Slavic, Asiatic, such as the Armenian, Kurdish, Persian. The Ural-Altaic is divided into four branches. These are all indicated by colors, but include Europe only. There is one map of Asia which gives the Chinese, Japanese, Tartar, Malay, Hindostan, Semitic languages and races of Eastern Asia, and another map of Southeast Asia which gives the races of Hindostan, Siam and the Islands of Java and Borneo. The map of Oceanica embraces Australia, Melanesia, Polynesia, Micronesia, Malaysia, Formosa, Chinese. There are two or three maps for Africa, one for Spanish, Portuguese, English, Holland, French, etc. Another with the Nubian, Coptic, Soudan, Hottentot, Bantou and other African races marked in colors. For America we have several maps as follows: One of South America with the Peruvians, Caribs, Patagonians, Chiquitos and others in colors. For North America, the Innuits, the Aleuts, the Tinnehs, the Thlinkets, Columbia, California, Algonquins,

Dakota, Iroquois, Muskogee, are marked in colors. This is purely historic. In addition we have the small maps of California and Central America subdivided into tribes, such as the Mexican, divided into four tribes, the Maya divided into four. The Tzentel group. The last map but one is a plain sphere with sixteen colors. Australia, Oceanic, American, Dravidic, Thibetan, Chinese, Ural-Altaic, Kamschatkan, Caucasian, African, Indo-German, etc. The map is indispensable for an ethnologist. It is gotten up at great expense. While published in German, yet it will be plain to most persons, for the colors and names correspond.

Old Kaskaskia. By Mary Hartwell Catherwood. Boston and New York: Houghton, Mifflin & Co. 1893.

Novels which have for their basis the pioneer life and scenes among the Indians are becoming quite common. This one on "Old Kaskaskia" is a strange, outre sort of love story, with the scene laid in the time of Governor Edwards. The reader will get perhaps a few ideas in reference to the place and times, or at least will get the names which were familiar in the region. He will need, however, to read something else if he is to become informed on the local history. The book begins with a description of the fort and the place and ends with a description of the freshet, called the flood. After the flood the Kaskaskia of history is to appear, but the first Kaskaskia is said to be obliterated. This is a historical fact, as the recent removal of 3,000 bodies from the old cemetery will indicate. The flood makes a good background for a singular tragedy, which is a part of the love story. It is to be hoped that greater interest will be taken in the locality as a result of reading the story.

Through Colonial Doorways. By Anne Hollingsworth Wharton. Philadelphia: J. B. Lippincott & Co. 1893.

The revival of interest in colonial and through revolutionary times has become a marked feature of the life of to-day. Sounding the heavy brass knocker and inviting the reader into colonial homes is the object of this book. It is not a novel nor a connected history, but resembles a gallery of pictures, is in fact a series of pen pictures. The prominent individuals of the times, such as Washington, Franklin, Major Andre, General Lee, Mrs. Washington and Mrs. Adams, the Misses Livingston, Mrs. Alexander Hamilton, the Wistar family, Baron Humbolt, Dr. Benjamin Rush, Chief Justice Tilghman, John Sargeant, are brought before us as they appeared in private life and in society. There is a great deal made of the balls, receptions, parties and dancing assemblies, for four out of the seven chapters are devoted to these. One chapter is devoted to the American Philosophical Society. In this we get a view of the founders of the society. Dr. Benjamin Franklin, Hon. C. Coalden Thomas Hopkinson, Dr. Rittenhouse, Thomas Jefferson, Rev. Dr. James Abercrombie, Mr. Charles Goodyear, Mr. Franklin Peale, Dr. Benjamin Rush, Dr. Barton, Charles W. Peale, the artist, and many others. This chapter contains a description of Humbolt's visit and Lafayette's visit. Jefferson was a scientist. While abroad he disputed the arguments of the learned Count de Buffon on the degeneracy of American animals, and finally made his position secure by sending the astonished Frenchman the bones, skin and horns of an enormous New Hampshire moose. Equally convincing was this, and more agreeable than the manner in which Dr. Franklin answered a similar argument on the degeneracy of American men by making all the Ameri-

cans at table and all the Frenchmen stand up. As those of his compatriots present happened to be fine specimens physically, towering above the little Gauls, the good doctor had the argument all his own way.

How to Know the Wild Flowers. By Mrs. William Starr Dana. Illustrated by Marion Satterlee. New York: Charles Scribner's Sons. 1893.

This is a valuable hand book for the amateur botanist and for the lover of flowers who is not an amateur. It is full of engravings which present to the eye information which the letter press fails to convey. There are few persons who have technical information enough to analyze all the flowers which they see, and yet all want to know the names of flowers. This book will be a great aid to this, and will undoubtedly be sought for by all classes.

The Youth of Frederick the Great. By Ernest Lavisse. Translated from the French by Mary Bushnell Coleman.

This is a tragedy in real life. A despotic father, a son who tried to be obedient, a divided household, scenes of cruelty, all under the garb of strictest religion, ended at last in the character of Frederick the Great, who was just the opposite in later life to everything that he was or saw in his early days. If Calvinism was fitly represented by Frederick William, there is no wonder that it is hated by many. But his course was only a travesty. No one is justified in crushing the life and liberty of another, even if he be a father and a king, and much less is he justified in doing so in the name of religion. The details of this process are given in the book. It reads like a novel, but it is painful reading nevertheless. Royalty will not be envied if it is attended by so much wretchedness. There is, however, one lesson taught by it. Greatness is not reached either by private individuals, or the royal heirs, except by more or less suffering, personal hardship, stern duty, and strict application. The training of Frederick the Great was severe, but resulted in greatness, whether it did in goodness or not. The reader of this book will wait impatiently for the second part, to see how the lesson is drawn out, and how the character of the young man as a son, developed when he became king. The book is almost startling in its statement of facts and will be read with avidity.

Books and their Use. By Joseph Henry Thayer, D. D. Litt. D. Boston and New York: Houghton, Mifflin & Co. 1893.

This is an address before Harvard Divinity School to which is appended a list of books for students of the New Testament, "given from a professional point of view." It is probable that nearly all who read this book will realize the force of the last clause, which is quoted from the preface, that it is from a professional point of view. There are certainly very few pastors who would cut so close to a line as to exclude so many of the popular books and select so exclusively those which are scholarly. Owning books is a passion with some. When this is the case it is well to be on one's guard, but the majority of clergymen would certainly go beyond the list which is appended here. If the object had been to furnish a conservative list of books on Old Testament and New Testament exegesis, on the formation of tradition, and on the versions it would have been understood, though even then a modern Bible student would want a list of books which have been written on higher criticism. There are many books on the geography of Palestine, on the antiquities of Egypt, discoveries in Assyria, on the science of comparative religion, which are not even mentioned. The list of books

on the life of Christ is valuable but short, but the books on Biblical ethnography are old, dating from 1875 to 1886. Those on Biblical chronology are extremely old, dating from 1843 to 1865. The Biblical natural history is better. Biblical maps very good, Biblical philology the best of all. The hints on reading aloud and reading for religious culture are also valuable but we would like to ask Professor Thayer how in the world students who confine themselves to this list are going to answer the specious objections which come from scientific men, or how they are to become informed even on scientific subjects. There is a whole realm of Biblical archaeology which has not been entered upon, and books without number which are not even hinted at.

The Colonies, 1492-1776. By Reuben Gold Thwaites, Secretary of State Historical Society of Wisconsin. 4th Edition. New York and London: Longman, Green & Co. 1893.

This little volume is handy for a vacation or will do for more careful reading at home—perhaps for both, as it stays by one and takes considerably more than one reading to finish. The author begins with the native races of the Atlantic coast, passes on to the pre-Columbian discoveries, then reviews the attempts to colonize and reaches the first actual colony in the fourth chapter. The interest here flags a little, but comes up again, so that one feels like persevering to the end. For a summary of our colonial history, it is remarkably comprehensive—*multum in parvo*, and is quite correct in its dates and statements of facts and events. It must have required a vast amount of reading and shows great diligence on the part of the author.

Journal of American Ethnology. J. Walter Fewkes, Editor. Volume III. Boston and New York: Houghton, Mifflin & Co.

This is a volume of 141 pages. It contains two articles, one by Mr. A. D. F. Bandelier, on the "Documentary History of the Zuni Tribe," and the other by Dr. Herman F. C. Fer Kate, on "Somatological Observations on the Indians of the Southwest." Mr. Bandelier's article shows that the Zunis were surrounded by the wild tribes, such as the Apaches and Navajoes, 400 years ago, and that the Moquis were then, as they are now, an isolated tribe, but akin to the Zunis. The Navajoes seem to have become assimilated to the Zunis since that time, and now have many of the myths and customs which at that time were theirs in the flesh. Mr. Fewkes, the editor, deserves great praise for his indefatigable painstaking in reference to the Zunis and other races now called Pueblos and Cliff-dwellers.

Picturesque Chicago and Guide to the World's Fair. Issued by the *Religious Herald*. A souvenir of fifty years' publication of the paper. Hartford: D. S. Mosely, 1893.

This is a finely illustrated description of Chicago and the World's Fair, and is a splendid keepsake, as it commemorates the fiftieth anniversary of the paper, and the four hundredth anniversary of the discovery of the continent. What will Chicago be fifty years from now? The book is not "looking backward", therefore we shall have to leave the question unanswered.



Martha J. Lamb

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COMMEMORATIVE COLUMNS AND ANCESTOR
WORSHIP.

By STEPHEN D. PEET.

The custom of erecting columns which were commemorative of the departed is as old as history and widespread as the human family. It, in fact, began in prehistoric times with the earliest race, but has continued into historic times and still survives as the custom among all nations. The pattern or style of monument varies with different nations, but perhaps the earliest style is that which developed into the standing stones of Great Britain, Northern Europe, Western Asia and India, and which still survives in the gravestones and monuments which are found in our cemeteries everywhere. There were other styles which appeared at a very early date, perhaps as early as the standing stones, and which spread over the different continents from a common center. It becomes, then, an interesting task to study the different types, and to follow out the lines along which they were transmitted. The starting point of these monuments may not be very easy to find, yet we may begin at almost any point and trace them from race to race and from continent to continent, and make them objects of study. When we do this we find problems arising which are the most perplexing and difficult, problems concerning the origin of man, the spread of the human race, the progress of art and the development of symbolism, and many others equally as important. These must be heeded as we start in upon the broad field, and must be borne in mind as we advance, for we may find clues to their solution as we study the different monuments.

I. Let us consider the general custom. 1. The main question which arises here is the one which relates to the history of commemorative art and its spread among the different races. We

find this illustrated in the monuments of Europe. This habit of erecting a column as commemorative was introduced at an early date and has largely prevailed. Mr. Anderson, in his "Scotland in Pagan Times," has given some very interesting facts in this connection. He says: "The typical form of the stone age burial custom was the chambered cairn, but we find these occasionally encircled by stone settings or circles of standing stones, but when the circle is associated with a cisted cairn the circle always appears as the principal member while the stone setting originally rose as an adjunct of the chambered cairns of the stone age. It acquired its dignity and importance in the subsequent age, by the degradation of the stone structure, and came at last to stand alone as the most distinguishing and characteristic mark of the bronze age burial. The burial ground is fenced off from the surrounding area by a circle of stones, sometimes mere natural boulders, rolled into their places, at other times tall slabs, set erect on their ends, and at still other times surrounded by a trench and embankment of earth. Occasionally the stone circle is doubled, the inner circle being formed of smaller slabs. From the frequency with which these burial circles are found to contain a plurality of interments, it is obvious they are not the monuments of single individuals, but family or tribal burial grounds. The stone setting then is the external sign by which the burial ground is distinguished from the surrounding area. Like the cairn, it is the visible mark of the spot of earth to which the remains of the dead have been consigned. The colossal size of their pillar stones, the magnitude of the area enclosed, the care and labor expended in trenching and fencing are features which give to these singular constructions a peculiarly impressive character. This impressiveness is especially characteristic of such a circle as that of Stennis in Orkney. It stands within a trench enclosing an area of two and one-half acres. The diameter of the area is 300 feet, the trench 20 feet, the stones 17 feet apart, the highest 14 feet, 23 in all. We are unable to define the limits of the area in which stone circles are found, but they are not confined to either Scotland or Britain, or even Europe." The best specimen of stone setting in circular form is that contained in the memorable works at Avebury, England, which we have several times described, but without giving an explanation of its use. See Fig. 1. Another class of monumental stone settings, much more rarely met with than the circular groups, consist in the group of upright stones or alignments.

Mr. Anderson also speaks of the standing stones which are found arranged in alignments* rather than in circular groups, and classes them under the same head of commemorative columns. He says: "There is a relationship of type between

*See Scotland in Pagan Times, by Joseph Anderson, page 111.

these monumental stone settings, for the cairn is associated with both classes, those arranged in alignments and those in circles." He speaks of the alignments found in Scotland, though there is a relationship of type. The cairn is associated with settings of standing stones when they are arranged in alignments. These are, like the circles, adjuncts to a sepulchral cairn. On the hill side of "many stanes," in Caithness,* is a group that consists of twenty-two rows of standing stones, one hundred and fifty feet in length, the number exceeding four hundred. Looking at the magnitude of the work, and the immensity of the masses of individual stones, we discern indications of confidence of power to overcome the forces of nature, of organization, and co-operation which are the necessary concomitants of civilization. This is an explanation of the standing stones in Scotland and Great Britain, but it may be applied to the standing stones and alignments of the north of France, especially those at Carnac,† in Brittany.



Fig. 1.—Circle of Standing Stones at Avebury.

These consist of eleven rows of unhewn stones, the largest being 22 feet above the ground. The avenues originally extended for several miles, but at present are 3378 feet in length, 328 feet in breadth and tapering to 200 feet at the tail. It has at its head a cromlech of 62 menhirs—thus confirming Mr. Anderson's position. The province of Brittany has 23 alignments, one half of those in all France. They are generally associated with either dolmens or cromlechs and may have marked the burial places of the common people, or battle fields, but this is only conjectural. They are the monuments of the bronze age, and are associated with the dolmens which were burial places through that age. The relation of the standing stones to the summer solstice has been studied by Mr. A. Lewis and others, and it is held that the northeast opening of the circles was designed to admit the rays of the rising sun at the time.

Miss A. W. Buckland has spoken of the proximity of these

* See *Scotland and Pagan Times*, by Joseph Anderson, page 121.
 † See *Antiquities of Western Europe*, *American Antiquarian*, Vol. X, No. 1, page 14.
 ‡ See 1377 menhirs, 457 cromlechs, 59 alignments, 6 alignments represent 3000

alignments, circles and dolmens to the sea coast, and says that they are not found in central Europe, thus furnishing a hint as to their origin. The theory once prevailed that they were introduced along with the other tokens of the bronze age by Phœnician voyagers, but this like the theory of their having been erected by the Druids, is now rejected by many. Sir John Lubbock says megalithic monuments resembling these are found all over Europe. There are stone avenues in Moab. Standing stones were erected in memorial of some particular event. Arctic travelers mention stone circles and stone rows among the Esquimaux. Even in Australia, stone circles are said to occur. Lafitau figures a circle of upright stones in Virginia, carved at the top to rude representations of human faces.

2. Another question is, were they ethnographic lines which were followed, or shall we recognize a process of development which had no regard to the races. In answering this question we shall avoid all theory and shall only study monuments which have appeared among the different races, and especially those which are known to have been commemorative. We shall begin with the far east and shall follow the lines which have been marked by the great races in their various migrations, making it a point to study the different types of art which were adopted by each, and especially the symbolism which was peculiar to each. We think by doing this we shall certainly ascertain the line of transmissions which ultimately reached this continent and introduced the art into America.

(1.) There were three different lines of transmission: one by the Aryan, the second the Semitic, and the third by the Turanian race. We can hardly tell which was the earliest, though the simplest type is seen to the northwest part of Europe, where we find the standing stones and the other commemorative monuments of the widespread Aryan or Indo-European race. We trace the same custom in its transmission through the Semitic art, which spread into Egypt and Phœnicia and many parts of western Asia, and still resulting in the various monuments, commemorative columns, obelisks and sculptured stones of the Mediterranean coast.

(2.) We can see the Semitic line illustrated by the burial customs of Egypt. In early historic times the mastaba of this race contained the body, which was placed in a sarcophagus and buried in the depths of the tomb. This mastaba was undoubtedly the same as the stone cist, and was an outgrowth of the same custom of burial. Whether the obelisk was placed outside of the mastaba is uncertain. A little later the mastaba changed to the pyramid and the body of the distinguished dead was buried in its depths. This, however, obscured the memory of the deceased. While the portrait of the deceased was painted on the case or coffin which contained the mummy, and the deeds were recorded in

the hieroglyphics upon the cell inside of the pyramid, there was nothing to remind the living of the exploits of the dead. The obelisk was then a necessity, and soon became conspicuous as a commemorative column. It was covered with hieroglyphics and contained the record of the dynasty. The portrait of the king was carved into the statues, and often proved as commemorative as the obelisk; but these were monuments for the living, while the obelisk was designed as a mortuary record. The same custom was observed by the Phœnicians, but in a different form. There are many monuments in Phœnicia. There are sculptured figures near Kana which resemble portraits. These are placed along the foot of the mountains, or in the side of the valleys, or on the rocky terraces, and are in lonely and wild places, near large natural caves. The history of these is unknown. They all look toward the rising sun, and are hewn out of the rock.* Other tablets have been found in Phœnicia which contain animal figures, some of them standing erect and contending with one another. These may have been totems, or possibly they represented the divinities. We do not class them with the mortuary records. The obelisk was common also in Assyria. The one from Nimroud, now in the British museum, is an ancient specimen. The rock-cut tomb in Lycia has two columns in front of the door, but they are in the Ionic style and are modern. The monuments of Amrith are much older. They are called spindle columns, but are truly majestic. They are cylinders which arise from a square platform and terminate in a cone. The propylon of Xerxes at Persepolis is another specimen which, though modern, contains the column. At the gate of the lions at Mycenæ is a column which is supposed to have been symbolic as well as commemorative. Many other specimens might be cited, but enough has been said to show that the custom was prevalent among the entire Semitic race, and that it influenced also the Hellenic race.

3. Another line will be found in the Turanian race, who were ancestors of the great Mongolian race, and perhaps also ancestors of the Malay race, though there is some uncertainty as to the identity of these two. The Turanians have been regarded, however, as the so-called ground race. The custom of erecting mortuary columns was the basis of the art of all these races, and it may be that we shall yet trace the line of transmission back to a common center, making the Phœnician and Hittite monuments the outgrowth of the same custom prevalent among Egyptians, Assyrians, Chaldeans, Chinese, Malays, and the wide spread Indo-European races, thus proving not only the unity, but also indicating a connection between the races of the west with those of the east in prehistoric times.

* The work is very rude, but such as it is, it has been defaced.

II. The custom of erecting commemorative columns prevailed in America. How do we account for this? Was it introduced from some other continent, or did it originate here? It is a singular fact that there are few commemorative columns in the eastern part of this continent. A few standing stones have been discovered situated in the Mississippi Valley. We do not know that they were commemorative. There are many specimens of ancestor posts, however, on the northwest coast, which give rise to the thought that the custom must have been introduced from some other continent. If we place these along with the so-called portrait pillars found in the southwest provinces, we shall have a confirmation of the thought. We shall it for granted that the Turanian stock is to be located in the northeast and southeast coast of the continent of Asia, and that it formed the underlying stratum of the entire Polynesian race, though the lines of migration have not been followed up. The commemorative columns of the entire region will come before us for our study. These connect closely with the totem posts or ancestor posts of the northwest coast. This race seems to have migrated eastward and may be divided into two great branches—one located in Mongolia, the other in Polynesia and perhaps upon the American continent. The religion of the Turanians was largely ancestor worship and abounded in commemorative columns. We do not find totemism as developed in this as among some other races, nor do we find sun worship as prevalent. Ancestor worship and hero worship predominated. This accounts for the difference between the cults which prevailed in the Atlantic and the Pacific. The Atlantic furnishes but little evidence of an ancestor worship, but in the Pacific it prevailed extensively. There seems to have been a transmission, not only of the system itself, but also of the custom of erecting ancestor posts, over the entire region occupied by the Turanian race.

Erman, in "Travels in Siberia," says the Ostyaks and Samoyedes were in the habit of erecting images in honor of deceased parents. These images were set up in their "yurts," and received divine honors for a greater or less time, according as the priest directed. The body was buried with a *narz* and reindeer for use in the next life, also a tinder-box and pipe and tobacco; but the image in the tent represented the deceased husband, and at every meal an offering of food was placed before it. The image of Ortik, one of their deities or deified heroes, was also often seen. This was only a bust, without legs, the face made of plated metal, the body a sack stuffed with hair and skins, the whole figure dressed in a linen frock. This suggests the idea that the transmission of the custom of erecting ancestor posts may have been from Siberia to the coast of America, for the use of the copper plates upon the totem posts of the Haidahs was very common in connection with their ancestor posts. Still the evidence is much

stronger in favor of the transmission from New Zealand to this coast, for the resemblance between the New Zealanders and the Haidas is very striking. We here quote from Ensign Albert P. Niblack, United States navy, who has made a study of the Haida totem posts and has furnished the most valuable information in reference to them.

Drawing a parallel between the Haidas and the New Zealanders, he says: "In point of physical resemblance both are of the Mongoloid type and both live on groups of islands whose climates are remarkably similar. Poole says of the climate of the Queen Charlotte Islands that the most graphic comparison he could draw was with that of the northern islands of New Zealand. Their political organization of the tribe, their ownership of land, and their laws of blood revenge are similar. The men tattoo with designs intended to identify them with their sub-tribe or household, and they ornament their canvas, paddles, house fronts, etc., in somewhat the same manner as on the northwest coast." Dixon (1787) is quoted as saying that the cloaks of the Haida and Tlingit were the same as those worn by the New Zealanders. A Haida fortified house on an island of the Queen Charlotte group was built exactly on the plan of those of the savages of New Zealand. The adzes made of jasper, the cloaks of shredded bark, and the paddles from the Queen Charlotte Islands and those from New Zealand are so much alike that it takes a close inspection to distinguish them."

We quote a description given by Featherman,* for it may be taken verbatim and applied to the same process on the northwest coast. "The frame was constructed of posts painted red, carved into an ancestral image. The sloping rafters were supported by a ridge pole which was supported in the middle by a post, carved at the base to represent a human figure, who was represented as the founder of the family. In front of the ancestral image was the fire place, which was a shallow excavation marked by four slabs of stone sunk in the ground. A narrow opening, only large enough to admit a man on bended knees, was used as an entrance. The roof was lofty, and projected at the front gable end so as to form a kind of awning, generally occupied by the head of the family. The house was surmounted at the end of the ridge pole by a carved human figure. The sleeping places were partitioned off on both sides of the room by low slabs of wood. There was no chimney; the smoke could only escape through the door or window. The burial place was almost always within the enclosure, near the family dwelling." The description of the war canoes of the New Zealanders will answer for that of the Haidas. They were the property of the whole tribe, and measured from 60 to 80 feet in length, 5 or 6

*See *The Haidas and Tlingits*, by Featherman, p. 17.

feet in width, 4 feet deep, and capable of carrying about 80 persons; the bow jugged out in the form of a spur and rose to the height of about 4 feet; the stern was from 12 to 15 feet high, 2 feet wide; both were ornamented with grotesque devices executed in bas relief. At burial the body was placed in a canoe shaped coffin and was interred in some secluded spot in the forest and surrounded by a palisade. The body of a chief was placed in a tomb which was surrounded by carved figures, representing

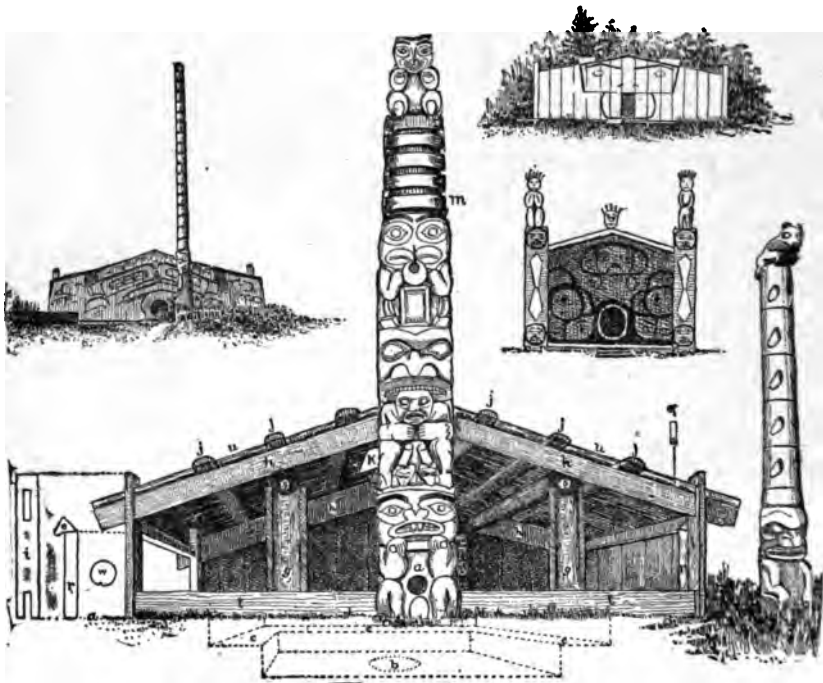


Fig. 2.—Haida Houses and Totem Posts.

the illustrious dead, with their tongues projecting from their mouths. The funeral ceremonies were concluded by immolating some of the wives and slaves of the dead chief. The corpse was buried. The clothes of the dead chief were preserved in a carved chest, which was considered an heir-loom in the family and a sacred relic. All their gods were known by specific names and were recognized either as hero-divinities—men who in ancient times had distinguished themselves—or were simply impersonations of the elements.

— This description should be compared with the one given by Ensigh Niblack. He says: "The carved columns are in front

of the houses, generally in contact with the front, the doorway or entrance being through a hole in the column about three feet from the ground.* The villages are situated along the shore with the houses in a single row, a few feet above high water. The houses are not very far apart. The beach in front of them serves as a street and as a place for hauling up canoes. At the end of the village is the grave-yard with its variety of sepulchers and mortuary columns of ancient and modern form. Scattered through the village in front and at the corners of the houses are the commemorative columns. Each village practically constitutes a tribe. The canoes have projecting prows, high spear-sterns and flaring gunwales, and a gracefully rounding cross-section. The war canoes are said to have formed a distinct class in themselves. The evidence is that the Haidas borrowed their style from the New Zealanders. In confirmation we quote

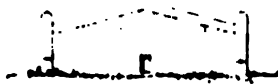


Fig. 3.—Haida House.

further: The Haidas have been the center of impulse on the northwest coast, and in their development they may have influenced the adjacent tribes to a great degree, but the weight of evidence is that, with no great originality in themselves, they yet present the curious and puzzling circumstance that they extensively borrowed their ideas from the other stocks, but developed what they have borrowed with marvelous skill and independence. They seem in themselves to have typified or intensified the representative characteristics of the Indian stocks of the northwest coast. Whether they have originated or borrowed their ideas can not be made apparent with the data at hand, but it may be well to here state briefly the peculiarities of the Haida as they have struck the writer in their relation to the other Indians of the region.

The details of the method of house-building among the Haidas will be understood from the study of the cuts. See Figs. 2 and 3. The living room was excavated below the surface, as seen in the dotted line. The fire-place was in the middle of the room. The totemic figures will be seen in the column in front. The

* The sketch of a house in Plate A. Entrance, A, the fire, B, burns on the bare hearth. The dotted line shows the excavated interior, the upper ledge is at the level of the ground. C, the fire-place.

entrance to the house was through the column. The ornamented front of the house above represents the wolf totem. The ornamented front with corner posts represents an ancient style of house-building. The house to the left has an ornamented front to represent the eagle totem. The column to the right represents the bear totem, with the frog at the bottom. The three houses given in Fig. 3, one shows the eagle totem, with the entrance through the whale; another represents the method of roofing and the details of the smoke-hole; the third represents the Thlinkit style of house front.

III. The explanation of the commemorative columns found upon the northwest coast will be in place. We shall find that these contain the same general art forms as those found in New Zealand, but at the same time embody a mythology and a totem system, which was peculiar to the region.

1. Let us consider this totem system. Mr. Frazer says that



Fig. 4.—Silver Bracelet.

while totemism as a religion tends to pass into the worship first of animal gods, and, next, of anthropomorphic gods with animal attributes, the peculiarity of totemism in nearly all parts of the United States was that it introduced a relationship, which cut across the kinship of blood and introduced one of religion, and was entirely arbitrary. It was the source of a new lineage which was to be recognized wherever the totem was seen. The crest of one clan was enough to bring the members of all the clans which bore the same totem into a new and novel brotherhood. This relation was generally shown by the animal figure, which constituted a crest or coat-of-arms, though there were tribes—such as the Navajoes and the Apaches of Arizona—which had no animal names, but instead took topographical names, such as red rock, salt springs, black water, grassy hill, coyote pass, cottonwood jungle. Others took the names of plants—walnut, juniper, cottonwood, rush, willow, tree-in-water, arrow reed.*

The system among the savages consisted in the identification of the individual with his totem under a specific name. Adair says: "When his lineage is known to the people his relations, if

*See Journal of American Folklore, "Gentile Organization of the Apaches," Vol. III, p. 111, by Washington Matthews.

he has any, these greet him in a familiar way, invite him home and treat him as a kinsman." The clan totem is a material object, which a native regards with superstitious respect, believing that there exists between him and every person who bears the same totem a special relation which is equivalent to a blood kinship. They all believe themselves the descendants of a common ancestor, and bound together by common obligations and a common faith in the totem. This is seen in the customs formerly prevalent among the tribes in the Gulf States. The same custom now exists among the tribes on the northwest coast. Here an Indian, on arriving at a strange village, would look for a house indicated by its carved post as belonging to his totem, and make for it. The master of the house comes out, and perhaps makes a dance in honor of his visitor, and protects him from all injury. A captive is brought into the village, but it behooves those of his totem to present themselves to the captors and sing a sacred



Fig. 5.—Silver Bracelet.

song, and offer to redeem the captive. Here, then, we have the same system which prevailed among the savages of the interior, but modified, for in this case the father adopts the captive or the stranger, instead of the mother. The person becomes a member of the family rather than of the clan. This constitutes the main difference, a difference which has been brought about by the influence of ancestor worship beyond the sea. The mother rule has changed to the father rule. The clan has changed to the family as the unit of society, and we now have patriarchy with nearly all the features which distinguished that system in oriental countries. It was a change, however, which appeared mainly in the Haidas, for the Thlinkits still retain matriarchy.

It was very rare that human figures were used to represent totems, though they were sometimes used to show the mythologies which prevailed. Wherever the human figure is seen, we may conclude that a higher type of totemism has been introduced. Generally it is a type which has been influenced by sun worship or by ancestor worship, reverence for the animals having been transferred to the heavenly bodies. Among the Pueblos the sky was the habitation of the ancestors and the nature powers were deified, but the clans all retained the animal names, the clans of the Zuni being named the crane, eagle, bear, coyote; those of

the Jemez coyote, corn, pine, evergreen, oak, sun, eagle, water, antelope, and badger. There were no commemorative columns among any of these tribes of the interior; but the *tetiches* and the diminutive idols, which were adorned with the symbols of the nature powers, were to the Pueblos reminders of their divinities, just as the carved specimens, tablets, inscriptions and shell gorgets with human figures, served as reminders to the people farther east, such as the Indians and the Mound-builders.

2. The ancestral columns are totemic, but they contain figures which illustrate the traditions, folklore and mythology of this singular people. The carved column in front of the model of the Haida house is an illustration. The surmounting figure represents *Hoots*, the brown bear, which is the totem of the head of the household. At the bottom is *Tsing*, the beaver, the totem



Fig. 6.—Silver Bracelets.

of the wife and children. Above it is the figure of the bear and hunter, which perpetuates the legend of the *laison* of the wife with a hunter, and is a warning to wives to be faithful to their husbands. It shows a belief in the possibility of human connection with animals. Above the bear and hunter is *Tetl*, the great raven, having in its beak the new moon, in its claws the dish containing fresh water. According to the legend of the creation, the raven stole the dish from the daughter of *Kanuk*, and flew with it out of the smoke-hole. He also stole from his uncle the new moon, which he imprisoned in a box. Above the raven are four disks, which serve as an index of the rank of the owner. Each disk commemorates some meritorious act.

Another illustration is found at Fort Wrangel. Here there are two posts, one to show the descent on the female side, the other on the male side. The genealogical column of the mother's side has at the top the eagle, the great totem or crest of the family; below that is the image of a child; below that the beaver, the frog, the eagle, the frog, all showing the generation and sub-families of the female side. The male totem has at the top the

portrait of a chief wearing a conical hat; below that is the family crest, the crow; next below a child, then three frogs, and at the base the eagle, the great totem of the builder's mother. In front of another chief's house a very natural-looking bear is couched on top of a pole, gazing down at his black foot-tracks, which are carved on the sides of the column.* See Fig. 2.

Another illustration is found in the plate which represents the columns found on Prince of Wales Islands, Alaska, as compared with the so-called "Tiki," which stands, together with several others, near the tomb of the daughter of the king of New Zealand. Two of the columns from Alaska are evidently modern, for they contain the image of a priest with folded hands, and of an eagle resembling the American eagle. The angel above the priest and the figure of a man with hand pointing upward, signifying that in heaven the god of the white man dwells. The only native totem on this column is the eagle at the top, which is the crest of the chief Skowl, who is said to have erected the column in derision of the missionaries.† The other figure, to the left, represents the head of a European—white face and black whiskers; two figures of children, one on either side. This perpetuates the story of the disobedient children, who wandered away and were kidnapped by the trader. Below this is the crane, with an instrument like a draw shave in its hands. The crane was an expert with tools, but they were stolen, and the crane now utters the cry, "I want my tools!" The next below is Hoorts, the bear, holding in its paws the butterfly. It perpetuates the story of creation. When the raven, the great Tetl, created the world, the butterfly hovered over its head, and pointed to the place where the bear lived. Below this was the giant spider, sucking the blood of a man. The story is that the spider was an enemy to man, but it was taken by Teskanahl, the divinity, and thrown into the fire. Instead of burning, the spider shriveled up and turned into a mosquito and so escaped, carrying a small coal of fire in its claws. The mosquito does not kill a man, but sucks his blood and leaves a coal of fire in the bite. The lowest figure is Koone, the totem of the owner. The New Zealand post represents, in the lower figure, the divinity Mani, who, according to the Maori tradition, fished up the islands from the bottom of the sea. The protruding tongue of the upper figure shows that it is one of the numerous defiant statues which abound on the islands. We notice an approximation to the horrid ornamentation of the Mexican pillars, which represent their gods, but we find the four ornaments which remind us of the sacred number of the wild tribes.

3. We notice in all of these totem posts certain features which are common. First, the tall hat, which resembles that of the

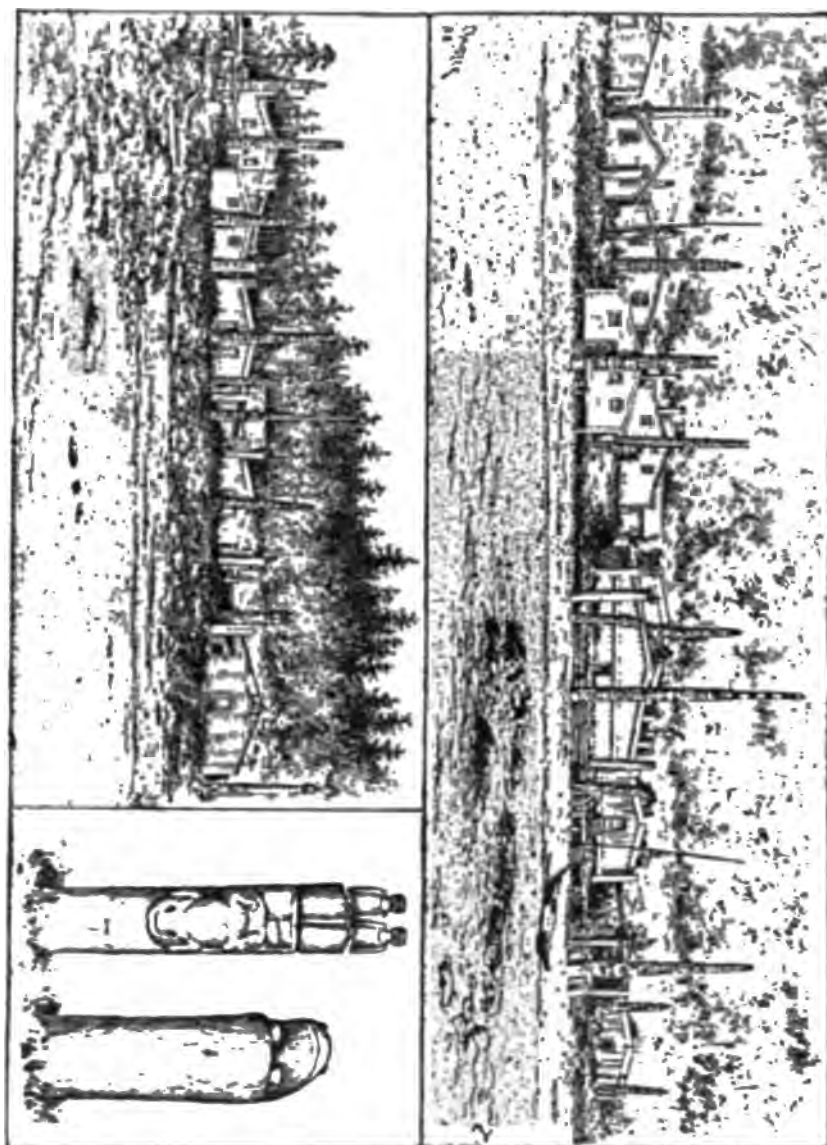
* A. C. G. "The Skowl Archipelago," by E. K. S. Moore, p. 57.

† "Illustrating this will be found in Smithsonian Report for 1884, p. 327.

Chinese, is over the heads of many. Second, the frog is carved upon the post, but is seldom used as a crest. Third, the eagle, the bear, the wolf and the crane, are generally the totems. Fourth, the raven is the great divinity, who was the creator and ruler of all. Fifth, the Orka, or whale-killer, a species of porpoise, the beaver, the dragon fly, sea lions and other figures are used to perpetuate certain legends. These are frequently combined together in a grotesque way, the tongue, generally, protruding from the mouth so as to make a connecting link between the figures, and the large eye being carved upon the different parts of each figure. Sixth, the totem posts are carved so that the figures rise one above the other, making a genealogical tree, but the pipes, dishes, rattles, paddles, mortuary boxes, paint brushes, and other tools, are carved pell-mell on the different sides. Seventh, the nature powers, wind spirit, clouds, man in the moon, thunder bird, are personified and carved in the shape of animals or human beings.

The creator of all things and the benefactor of man was the great raven called by the Thlinkets Yetl, Yeshl, or Yeatl, and by the Haidas, Ne-kil-stlus. He was not exactly an ordinary bird, but, like all old Indian mythical characters, had many human attributes, and the power of transforming himself into anything in the world. His coat of feathers could be put on or taken off at will like a garment, and he could assume any character whatever. He existed before his birth, never grows old, will never die. Numerous are the stories of his adventures in peopling the world and giving to man the earth, fire, fresh water, life, fish, game, etc.

This story of creation as well as belief in the cause of the changes of the weather, and a thousand other superstitions are noticeable. The imagery is entirely that which is peculiar to the northwest, and contains the figures of whales, animals of the sea; bears, wolves and animals of the forest; eagles, cranes, ravens, creatures of the air, as well as many fabulous creatures, all of them peculiar to this region. Some have imagined that they recognized the monkey, but the grotesque figures with a human form and animal head, such as the wolf, beaver, etc., might be easily taken for a monkey. It is not likely that the monkey was ever seen, or portrayed, by the natives here. The conventional figure of the orka or whale killer, the bear, the sea lion, of the crab, crow, whale and other animals were often carved upon the boxes, tattooed upon the person, woven in the ceremonial blankets, and twined in the basket hats in such a way as to be recognized only by those who were familiar with the figures. Strips of silver, seen in figures A and B, made into bracelets, representing the bear and raven, the custom of placing their totems upon their personal ornaments. The same custom is seen in the woven garments which cover the bed of the chief



VILLAGE AND CEMETERY ON PRINCE OF WALES ISLAND.

Shaks and in the Chilkat blankets which hang on the wall above his head. In this we have the bear totem repeated several times—the stuffed bear at the side, the woven bear on his garments, another bear on the wall, a bear's head on the table.*

The ornaments are modern, but they contain the same symbolism as the ancient heir-looms. The same may be said of the carved pipes and other specimens. One of these pictured in Fig. 3 resembles a totem post. It represents at the top the figure of the eagle; next below, the orka, or whale-killer; next, the raven, known by its beak; lowest down, known by its tongue.† The figure of the bear-mother is a slate carving, finished in the round. It perpetuates a legend.‡ The daughter of a chief spoke in terms of ridicule of the bears. The bears descended and took



Fig. 7.—Orka or Whale-Killer.

her captive and made her the wife of the chief of the bears. She became the progenitor of all the Indians bearing the bear totem. The carving represents the agony of the mother in suckling her child, which was half bear and half human. The slate disk, (see Fig. 7) represents the orka or whale-killer. This is known by the fins, the nose and the eyes. We see from these specimens that the carvings are designed to perpetuate the legends, but that there was a different style of carving among the different tribes. Mr. Niblack says: "Every carving and pictograph is pregnant with meaning, but the task of tracing out the legends and comparing them with those of adjacent regions is difficult. No idea of the ethnological affinities can be found without comparison of

* See Fig. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

the mythology." Mr James Deans, who is familiar with the different tribes, and has made a study of the totem posts, says that each tribe has its own way of carving and its own set of myths, so that one is not sure that he is giving the right interpretation unless he knows the tribe to which the carving belongs.

The study of the ornaments and figures on the mortuary boxes aids us greatly in interpreting the symbols found on the totem posts. These boxes were commemorative, but the figures are largely mythologic. To illustrate: The cedar box (Fig. 8) was



FIG. 8. Cedar Box.

used by the Thlinkits as a depository for the ashes of the dead, contains on its front the figure of the bear, with eyes, ears, paws, mouth, breast, all portrayed in an allegorical way. The slate box (Fig. 9), also, which was an heirloom, contains on the lid two figures of fish. The upper one, with rows of teeth and protruding tongue, represents the salmon. The figures in the upper corners represent two salmon, each an eye in each. The lower figure on the lid contains the fins and flippers of the salmon. The head of the salmon can be seen in the handle on each side of the box. The two corners of the bear, having in its mouth the hunter, represent the two bear are in the lower corners. In the Haida boxes, an eye is placed in the breast, ear, paw, tail and other parts of the body, with the belief that each part has the power of coming out for itself. There are certain conventional signs which indicate to the natives what animals are meant. With the

brown bear, it is the protruding tongue; with the beaver and wolf, the character of the teeth; with the orka, the fin; with the raven, the sharp beak; with the eagle, the curved beak. Certain groupings are generally recognized as portraying certain well-known legends, such as the bear and hunter, the raven and moon. In the Chilkat blankets, the colors are interwoven to form a totemic pattern. These blankets are very common, and have become so conventional in their style that they are recognized. The figure of Hoorts, the bear, is common on them. The same is true of the ceremonial shirts, though sometimes the figure of the wolf is seen upon them, instead of the bear. It will be noticed that all parts of the body of the bear, such as the ears, paws, breast and legs, have eyes looking out. This illustrates the personifying tendency and at the same time shows



FIG. 1.—Slate Belt.

the superstition which the people had. They imagined a spirit to be in every part of the body. This spirit was able to rule and direct the part even as the totem spirit did the whole body.

IV. The question of the origin of the ancestor posts here comes up. On this there will undoubtedly be a difference of opinion, for one class will hold that these originated on this continent independently, as the result of the system of development here, while another class will hold that they prove a contact between the races and are the result altogether of a transmitted cultus. Our position, as already indicated, is that the resemblances between the Polynesian and the Haida symbolism is too strong to resist the conviction that much of it was borrowed. While there was an American system which consisted in the widespread totemism or animal worship, yet there was a Polynesian or Asiatic ancestor worship mingled with it, which gave a new tinge to and which ultimately resulted in that very unique system which is now our object of study. We maintain further that there was in Polynesia a very extensive esoteric system, which embodied in itself many of the religious conceptions which prevailed in the far east, and that the very conceptions were by this

means transmitted and adopted by the natives and became embodied in these ancestor posts, the difference between the symbols of the two wide areas being owing to the underlying ground work, but the resemblances being owing to the transmitted elements. We recognize the resemblances both in the customs and in the symbols, and shall therefore call attention to these and afterward point out the differences.

The resemblances are very numerous. The following have been noticed as common in New Zealand: 1. Cremation of the bodies and the preservation of the ashes. 2. The keeping of the head in a box or carrying it about the person. 3. The cremation of the husband and immolation of the widows and slaves. 4. The burying of the bodies in canoes. 5. Erecting the statues with protruding tongues in the midst of cemeteries. 6. The preservation of garments and making them "taboo." 7. The glorifying the memories of heroes and ancestors by the carved figures. 8. Naming the divinities, and calling them ancestors,



Fig. 20. End of the Box.

and offering sacrifices to them in the cemeteries. We can compare these with Ensign Niblack's description of the mortuary customs among the Haidas: 1. On the death of a chief the body, after lying in state for a year, is finally burned on a funeral pyre and the ashes and burned bones are deposited in a mortuary box or house. 2. Formerly the head was preserved separately in a box. 3. Certain slaves were selected to be sacrificed at the funeral of their master, and their bodies were cremated with his, that their spirits might accompany his to the next world. 4. In some cases pillars were erected, and the mortuary boxes were placed on them, while at the base of the pillar was the canoe, but in other cases the canoe itself became the burial place. 5. Carved columns and boxes and ornaments on which a protruding tongue connects the various figures are common. 6. The ceremonial apparel of a deceased chief was always placed with his personal property in boxes and preserved for many years. 7. The height and elaborateness of the carved columns were generally signs of the wealth of the individual. 8. The carving on the boxes, sculpturing on

the rocks, and the drawings, paintings and tatoored patterns were "totemic pictographs" which perpetuated legends concerning the various divinities, which were either animals, birds or creatures of the sea, or in some cases wind spirits and nature powers, each represented by an eye in a wing, or limb, or claw, the very symbols illustrating how pregnant with meaning every carving and pictograph was, and how difficult a task it is to trace them out and compare them with those of adjacent regions, and how important a knowledge of the legends is to the proper interpretation of the figures. No idea of the ethnical affinities of the various stocks can be formed without comparative mythologic and ethnologic study. "In the ceremonial institutions, in the elaborate dance paraphernalia, in the carved heraldic columns, in the varied mortuary customs, in all the practices of highly imaginative and inventive tribes of Indians, we have similarities and differences so bewildering, that it is difficult to trace the mutual influence of the different ethnic groups. Here, then, we have eight points of resemblance in the customs of the two regions to prove a contact between them.

Other resemblances, however, are as significant, for they show a transmission of religious conceptions. These consist in the position of the hands, the abdominal protuberance, the protruding tongue, the arrangement of faces and figures in stories, the attitude and location of the images, as well as in the appearance of the phallic symbol. In New Zealand, the abdominal protuberance, the hands usually resting on the hip, represents the immortality of the soul and the longevity of the gods. Here, too, the tongue was significant, as it was a symbol of life, the protruding tongue signifying the departed life. It appears that in the act of death, the voice or spirit was drawn out by the god. The word *unu* means, in the New Zealand language, to pull out. The *unus* are sacred pieces of carved wood, with which the cemeteries were decorated. The *Tiki* in New Zealand was a protecting genius, a kind of household god or ancestral spirit. The image over the grave of the shaman, on the northwest coast, was supposed to be a spirit which guarded the shaman. The phallic symbol is also significant in both regions. Ellis speaks of certain carved figures or batons on which the divinity is represented by the phallic symbol. The same symbol is used on the northwest coast and signifies life as a gift of the divinity. Here, however, the arrangement of the figures in stories is more significant, for they betoken ancestry and a long line of descent, the number of stories proving the superiority of the family.

TOTEM POSTS AT THE WORLD'S FAIR.

BY JAMES DEANS.

According to promise, I send you a short description of the carved columns or totem posts in front of the Haida house at the end of the south pond in the Columbian Exposition grounds. Properly considered, there are only four Haida columns in Jackson Park, for the other four, although used very much for the same purpose as the columns, are of a different style and were used by a widely different people. While giving a description of the carved ones, I shall begin at the one on the north of the house, and go south. For the information of your readers, a correct reading of not only this totem pole, but of the others also, I will send you as near as I am able a definite interpretation of each figure. The inscription alongside of this column reads thus: *Totem pole or heraldic column of the Tsiw Indians.* The figures represent, counting from below upward, as follows: first, the raven; second, dogfish; third, man; fourth, wolf; fifth, the killer whale, and, sixth, eagle. On the above mentioned column, reading from below, the first is the carving of an Indian with his head encircled by feathers. This represents the party to whom belonged the house in front of which this column stood. The second figure is the raven, called by these people Caugh. This, the raven, is the phratry or principal crest, along with the eagle phratry, of all these people. The next is the dogfish, which along with the raven phratry, was the crest of the man who had this house built for himself. The third figure is a man, perhaps designed to represent the man whose portrait this was, and to show that he belonged to the tribe amongst whom the house was built. By saying this I take a Haida standpoint; with the Sinesheans it may be different, although I hardly think so. The next or fourth figure above is a wolf. This is the crest of the wolf gens or crest. How it came to be placed there I can hardly say. Thus much I know: it showed a connection with that crest, or, in other words, a connection between the party who built this house and the clan bearing the wolf crest. The fifth figure is a woman with head-dress, and is evidently a figure of the housewife. Above her is the figure of a killer or fin-back whale, with two young ones, one on each side of its mouth. The sixth figure is the crest of the wife. The young ones show her to have had a family, which, like herself, would have the whale crest. The next or seventh figure is that of a woman, showing that the wife was connected by birth with the tribe in which she

lived. The upper or last figure is the eagle, and designates the phratry to which she belonged. This column was part of a house which stood in an Indian town on Naas River, British Columbia. It was sent by a Mrs. Morrison, an exceedingly intelligent half caste, her mother being a native Sineshean.

The second column, the one at the middle of the Haida house, is, of course, different, as it is a Haida column. This house formerly stood in the middle of the Haida Indian village of Skidegat's Town, so called from its chief always taking the title of Skidegat. His house belongs to a man whose name formerly was Choscah, or raven. After the death of an uncle, his mother's brother, he inherited the uncle's property, and consequently took the uncle's name, which was Clads-an-Coond. This house was first house in village belonging to the Cathlins Coan hadry (point of the waves people), who came and settled in the town of Illth-cah-gutla (hut between streams) called Skidegat's Town, as above mentioned. These people were driven from their home by tidal waves and by ravages of war. When they came to Skidegat they lived all together by building their houses in a row; their descendants live all together in same style to-day. The figures on the post are: lowest, the bear with man's head downward; second is the spout-fish (down); on each side of it is the Chemouse of the Sinesheans, which is a symbolization of a river snag, a floating snag or oftener a tree. To an Indian sailing down the rapid streams of the Pacific slope these snags are dangerous, and a superstitious dread has painted them as monsters of the worst kind; so, in order to be safe, they adopted them as a crest. The Haida tribes borrowed this crest from these Sinesheans. The next figure is a head with large eyes. It is shown as holding on with its mouth to the tail of the loon. This is the head of a bear as is shown by the *tan gac* (bear's ears) placed on each side of the head. From this head upward is a large dogfish. It is shown as having a woman on its back. Above the woman's head is another bear's head, with *tan gac*. Above all is the tail of the dogfish, shown between two little images. The following I consider to be a correct reading of the carvings on this post. First, the bear with a man's head downward, amongst the natives of southern Alaska symbolized a strange custom. When any one built a house a slave was killed and his blood sprinkled on the post, his body generally being buried beneath it, the bear on the post being the crest of the man who built the house, and the man being the slave who was killed. I have been unable to find that such a thing as killing a slave for such a purpose was ever done amongst the Haida. In this case I speak knowingly, as I helped to dig up the post, and I found that no slave had ever been buried there. In fact the man who built the house says he killed no slave.

There are two stories told by these Haida people with regard

to a man's head being upside down on the post. The first I shall give is the one told by the builder of the house: The bear was the crest of the man Chaouk, by whom the house was built. His intention being not to follow the old usage of his people by having the doorway in the post, he had the man's head put on in order to have no blank space, as well as to exemplify an old story, which runs thus: Long ago, a little boy wandered away and got lost in the bush. A hungry bear found him and ate him up. The second story is founded on a usage common among these people: If a man owed just debts to another, he was politely asked three times to pay it, and if then he refused, no more was said of the debt by the party to whom the money was owing, but he quietly waited until he had money enough to build a house, when, among other carvings, he had the image of the debtor put on in the shape of a man with his head down, and his crest above him, in order that the people might know who it was. A debtor seldom waited until the third time, well knowing the consequences.

The next figure is the lown or spout fish. It was put on to show the crest of Choouto's first wife, who was a daughter of Crosaw, chief of Hieller, on these islands. The Chemouse on each side were put on for ornament more than anything else, although no doubt there was a connection between it and the wife. The two bears' heads above show a double relationship between this chief and the bears, which came about as follows: He inherited his uncle's crest, which was a bear, as well as the bear crest of the village Cathlins Coan (Point of the Waves), in which he was born. Together with these heads is a woman's head and a dogfish. This represents an old legend among these people, the legend of Hathingzo (Bright Sunshine). She was a woman who, long ago, went to the open country in order to dig roots for food. After she had plenty, she went to the seaside to wash them. While there a dogfish came along and turned her into a sort of mermaid—half woman and half dogfish. This is said to symbolize the storm clouds, which, in that land of mountains, often quickly turn the bright sunshine to a storm. This story may also symbolize the Cathlins Coan hadry or people, when they left their own country and settled at Skidegat. The dogfish being the crest of the town of Illth-cah-gutla, or, as it is generally called nowadays, Skidegat's Town, from the chief, who takes the name of Skidegat, so by becoming that town's people, they became entitled to the dogfish crest. The two wooden men with the tail of the fish between them, with Taden Skeel on top, may signify this man and his uncle Clads-an-Coond, and it may not. Probably they meant that he was a chief at two times or places. The three circles, black and white, are three degrees of aristocracy. They also show that he was allowed to have three dances, and to wear circles around his neck while

dancing. This carved column is forty-two feet in length and is, like all the others, made of red cedar.

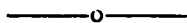
The third post is an Alaskan one from Tongass, on the southern boundary of that country. This one is also about forty-two feet in height. The carvings on it are: 1. The lowest, a bear holding a raven, although it looks more like a fur seal, which I should certainly say it was if the post was a Haida one. 2. Next above is bear, a frog with a bear's tongue in its mouth, and a hat with eight rings. As for the signification of the carvings on this post, I may say that the bear at the bottom was the crest of the people whose house this was. The bear holding the crow or raven, as is shown here, would show that the bear and the raven were foes and that the bear had the best of him, though according to the Haida tribes it would show an old legend about the bear and the fur seals. 3. Next above was the phratry of the man who owned this house. He also was one of the Cauhadagens. 4. Next above is the frog with the bear's tongue in its mouth, which showed the bear and the frog to have been friends. This frog I believe is the bear's wife's crest. The highest figure—the head and hat with eight degrees—must have been the husband, because the hat is on a bear's head. This post is badly finished. A Haidah carver would never put such a post out of his hands, and if he did he would be laughed at by the rest of the people.

The next column, fourth in order, is a Haida post. It is of far better finish, and is worthy of a Haida. This post has for its figures, first and lowest, a scamsun or sparrow-hawk, the doorway to the house being in the belly of the bird. The next is a frog; the next a being with a bear's head and a human body, holding on to the dragon fly; the next a crane; on the top is the Taden Skeel of three men, showing the chief's successors. This one, as well as No. 3, is exhibited by Mr. E. D. Ayer, of Chicago, Ill, to whom, I believe, it belongs. The description given of this post is rather imperfect, and a stranger could glean but little information from it. The large bird on the bottom can hardly be called the sparrow-hawk. It should be called the mosquito-hawk. The Haida legend of its origin is as follows: Long ago the land was mostly covered with water, and when the water left it was very swampy. Then the sun was very hot, far hotter than it is nowadays. This swampy ground bred mosquitos of an enormous size; they were as large as bats. These bats are well known to most people from their habit of flying about by night. These insects were so large, and their bite so deadly, that many people died from them. The country was slowly being depopulated from this cause. The people complained until the god Ne-kilst-luss heard their cry, and sent the butterfly to investigate. On its return, it gave a woful account of the people's condition. Hearing this, Ne-kilst-luss sent the

mosquito-hawk to live on them and drive them away, which it did. Now that the sun is less hot, and scamsums plentiful, the people can live. One legend is that the scamsum was an enormous bird, which still lives in the mountains, from which it flies over the sea, in order to destroy the killer-whales, or, as the Haidas call them, the scannah. Its body is the thunder-bird, the clapping of its wings the noise, the lightning a fiery dart sent out of its mouth, in order to kill these whales. The next figure is evidently a frog, showing that the party who had this house was allied to that crest or gens, or, what is not unlikely, they might have been connected with Skidegat's family. The next is rather difficult to decipher, owing to the head, which is evidently a bear's, being upside down. It has the *tan gue* (bear's ears) on it plain enough, showing it was highly connected with the bears. From its mouth to the mouth of the figure above is a band, which is held by the under figure. This shows a connection between the two. In the third post it shows friendship existed between the two figures—that is, the bear and the frog. In this case the animals shown are different. The lower figure I consider to be a bear, and the upper I believe to be either a butterfly or a mosquito, and doubtless symbolizes the old story of the butterfly sent out by the ancient god Ne-kilst-lass. The figure above seems to be intended for the dragon fly, which also is an enemy to these pests; although I consider this portion of the carvings to be neither more nor less than a rendering of the above legend. A number of years ago I saw in the old village Yakh, Queen Charlotte's Islands, a rendering on a very old totem post of the same myth. The figure with the long beak is a crane or heron, and doubtless was the crest of the wife of the man who built this house. The three figures on top belong to the family of Skidegat. The first chief of that name adopted it in order to put on top of his column. It is a mythological tale of the west coast, and is as follows: Long ago the god, Ne-kilst-lass, for a frolic, turned himself into a beautiful woman, and three men fell in love with her and, some say, married her, although this totem post shows it belonged to one of Skidegat family. This ends the totem posts from northern British Columbia.

The next is a house of a different sort and belonged to the Quackhils of Vancouver Island. Instead of a totem post these people generally paint their crests on the front of their houses. The paintings on this one represent the sun on each side of the doorway, with the thunder bird above the door. This is the style of this bird, as is shown by these people. This house, the notice on the side of the wall says, belonged to the Nu enshu clan of the Quackhils, on Vancouver Island, British Columbia. The next carving is a doorway from a house at Billa Coola, in the interior of British Columbia. It is a bear, and was the crest of the peo-

ple who lived in the house. The next carving also was the doorway of a house, at Billa Billa.* The paintings are as follows: Upper part, the raven; next, the spirit of the sea. This forms the doorway. The last two figures were part of a house of the Nannimoach tribe on Vancouver Island. They stood inside of the house and supported the roof beam. One of these post figures is represented as holding a goose in its hand. One or both of them represent the *Or*, a spirit of the sea, called by these people *swic-o-quit*.



THE NAME SUSQUEHANNA: ITS ORIGIN AND SIGNIFICATION.

BY WILLIAM WALLACE TOOKER.

In the endeavor to ascertain the etymology of the Algonquian names of places that are scattered over the eastern portion of the United States, it is absolutely necessary that we should have at hand the earliest forms of spelling, with all their variations, whether in the English, German or Dutch notation, together with the records connected with the same. If we have these records and these forms, we may discover by careful analysis, and by the aid of cognate vocabularies, the significations that are hidden therein. This has been the fact with many of the Indian names of places on Long Island and the islands adjacent, on whose study I have been engaged for some years in MSS. with few exceptions. By the aid of the information gleaned from early deeds, wills and other documents, written by those who, at the time, invariably employed an interpreter in their transactions with and purchases from the Indians, I have been able to study out the undoubted meaning of hundreds of prominent Indian place names, on which I would have failed, as many have done before me, simply for the want of these early records.

Let us glance into the first recorded bestowal of the now familiar name "Susquehanna," and learn its bearing, historical, etymological and anthropological, on the points mentioned. We find that nearly three centuries of time, rich in history and the development of the new world, have elapsed since Captain John Smith with his companions, numbering altogether thirteen, set sail on the 24th day of July, in the year 1608, from Jamestown on his second voyage of discovery to the head of the Chesapeake Bay.¹

*The name Billa Billa is the name of the house of the first of the Nannimoach tribe, who lived in the house, at Billa Billa. The name Billa Billa is the name of the house of the first of the Nannimoach tribe, who lived in the house, at Billa Billa.

This undertaking, in its daring and results, fully equaled that of Henry Hudson in discovering the river that bears his name. In a small barge of hardly two tons, inadequately armed and provisioned; living most of the time on oat-meal and water, and not enough of that; venturing into a primeval wilderness, sparsely inhabited by the savage, and staying twelve weeks, was in many respects a tool-hardy enterprise. But Captain Smith was a man inured to war, to privation, of great courage and immense resources. He infused the same spirit into the men under his charge, and made the voyage a successful one. After a survey of the various shores and coves of the bay, encountering savages, storms and sickness, they arrived at what they called the river of Tockwogh, now known as Sassafras River, situated on the eastern shore of Maryland. Here they were environed by the red men in their canoes, armed and ready in their primitive fashion to resist the weak band of explorers. But it so happened that one savage could speak the dialect of the Powhatan Indians, with which the adventurers were familiar, and through his influence Smith was able to induce the tribe to a friendly intercourse. Afterwards the party were conducted to their town, which they found well palisaded and covered with the bark of trees, with scaffolds like mounts, breasted with barks very formally. This tribe, who were called Tockwoghs, from a root of a plant which they used for food, could muster one hundred able men. Smith found them in the possession of many *hatchets, knives, pieces of iron and brass*, which they said they had purchased from the *Sasquesahanocks*, a mighty people, and mortal enemies of the Massawomecks, "those that come and go by water, *i. e.*, by boat or canoe," as the name denotes. These were the Iroquois (Ho-de-no-sau-nee), "people of the long-house," as they designated themselves, according to Morgan.* Also the "Yrequois and Antouhonorons (of Champlain) who made war together against the other nations except the neutral nation."[†] Smith was told that the *Sasquesahanocks* lived upon the chief spring of the largest river that flowed into the bay at its head, now known as the Susquehanna. He was unable to sail or to row his barge up this stream on account of rocks and rapids, a condition that still exists. Consequently he prevailed upon the *Tockwogh* interpreter, who understood Powhatan, to take another *Tockwogh* with him, who understood the *Sasquesahanoughs*, in order to persuade the latter to come down and visit them, for their languages were different. After waiting several days, as Smith informs us, "sixty of these people came down with *skins, bows, arrows, targets, beads, swords, tobacco, pipes*, etc., for presents. Such great and well-proportioned men are seldom seen, for they seemed like giants to the English, yea, and to their neighbors, yet seemed of an honest and simple dis-

* *Smith's Voyages*, N. Y. Library, Vol. IV, p. 32.
 † *Smith's Voyages*, N. Y. Library, Vol. III, p. 23.

position. Those are the most strange people of all those countries, both in language and their attire; for their language, it may well beseeme their proportion, sounding from them as it were a great voice in a vault or a cave as an echo. These people are scarce known to Powhatan, or he to them. They can make near 600 able and mighty men, and are palisadoed in their towns to defend them from the Massawomecks, their mortal enemies." From this description, and the strong guttural sound of their speech, we infer that they were of the same linguistic stock as the Iroquois, and were those people called by Champlain the *Carantouandis*, whom, he says, "is a nation to the south of the *Antouhonorons* in a very beautiful and rich country, where they are strongly lodged, and are friends with all the other nations except the *Antouhonorons*, from whom they are only three days distant."

The name *Sasquesahanough*, *Sasqusahanough*, *Sasquesahanougs*, *Sesquesahanock* or *Sasquesahanock*, as Smith variously wrote it—the first three appearing on his map of Virginia and the others in his works—was not a name bestowed by themselves or taken from their language, but was the appellation given them by the Tockwoghs, who were of Algonquian affinity. The statement by Smith that he found in their hands many *hatchets, knives, pieces of iron and brass*, which they had obtained from the Sasquesahanoughs, all go to prove the fact, and is corroborative evidence as to my hypothesis, that all these articles of trade, and also most of those brought down as presents were booty or plunder, looted in war by the so-called Sasquesahanoughs from their foes, the Massawomecks, who got them originally in traffic for beaver-skins from the French traders, who were then located on the St. Lawrence. For when Smith parted with the Sasquesahanoughs, he says: "We left them at Tockwogh sorrowing for our departure; yet we promised the next yeare again to visit them. Many descriptions and discoveries they made us of Atquimachuck, Massawomeck and other people, signifying they inhabit upon a great water beyond the mountains, which we understood to be some great lake or the river of Canada; and from the French to have their hatchets and other commodities." Bozman, in his notes,⁴ was in doubt as to this passage, which my translation of the name clears up. He says: "From the structure of the above sentence some conjectures whether their hatchets and commodities by trade were procured immediately from the French by the Susquehannocks themselves or through the immediate traffic of the Massawomecks, or some other northern Indian tribe, with the French. The circumstances of a war then existing between the Susquehannocks and the Massawomecks seem to preclude a

⁴ *Smith's Works*, vol. i., p. 102.

supposition of the latter case; but it is possible that even in case of the war, a few articles of that kind might have been obtained from the Massawomecks either by capture or some other means without supposing a traffic carried on by the Susquehanocks with the French in Canada."

Therefore, with all these historical and corroborative proofs before me, I would translate *Sasquesahanough*, or *-anock*, either with or without its anglicised plural form, as "*the people of booty or spoil obtained in war*." The forms of spelling on Smith's map, while they are not found in his printed pages, differ simply from the others in giving their true grammatical structure, that is, the generic formative--*-anough* or *-anock*—is evidently the same as the Narragansett plural, *anicuck*, *ninnuog*, or *nanuog*, which Roger Williams gives as one of the "general names belonging to all nations," and signifying "men," was occasionally used by Eliot in the plural, and, with an attributive prefix, in the singular for "man;" but the Indian restricted its denotation to men like themselves, of the common or native type, of the speaker's kind, though not necessarily of his tribe or nation.* For "man" in the Powhatan, Smith has *nemarough* in both editions of his work, which Trumbull suggests is a misprint for *nematough*. Why not for *nemanough*? which change does not alter its meaning as given by Smith, the "r" being interchangeable with "n" in the Powhatan, as well as in many Algonquian languages. Allowing this, we can more readily observe its identity with the Delaware pl. *lennozok*, Quinipiac *renwezok*, Massachusetts *ininnuog*, Narragansett *anicuck*, Miami *ahlanuah*, Blackfoot *nenow*, "man;" and without its demonstrative prefix *nem*, it becomes *-anough*, of *Sasquesah-anough*, and is found in the tribal names *Toppahanock*, or *-anagh*, *Monahas-anugh*, and *Monisakap-anough*, of Smith's map.

As to the parallel of the verbal prefix *Sesquesah*, in other kindred dialects, which must be substantiated in order to prove my deductions to be well founded. It is found that most of the Algonquian vocabularies do not give an equivalent for the English booty or spoil; and where one is given, it is generally derived from radicals having a primary signification of either "to catch," "to remove," or "to rob," none of which apply in this case. It is found, however, in two of the most prominent dialects of the family, and both are identical in their synthesis, as their analysis proves. Therefore, I would suggest that *Sesquesah*, or *Sasquesah*, is the Powhatan equivalent of the Massachusetts *Enot Sequetah*, (Num. 31, 32), *Sohquetah*, (Ez. 36, 35), *Sequetash*, (Is. 10, 6), *Sequettah*, (Num. 31, 9, 11, 12, 53), all given with varied grammatical terminations for "booty" or "spoil," primarily, "to cut or to break into small pieces." From *Sohqui*, "it is in small pieces," broken fine; *ctah*, a radical from *Tum-*

•. אברהם שנהר (1880).

etah-am, "to cut off." Also the cognate of the Delaware *Schiquitchasid* (Zeisberger), "booty or spoil obtained in war." This word is also used as a noun in the plural, *Schiquitchasik*, "chips;" *Schiqu*, "it is in small pieces;" *itch*, radical from *tem-itch-eman*, "to cut off;" *asid* being a conditional verbal, having the terms of the third person singular of the present passive, "that which ye have cut to pieces." While the Powhatan, as far as its limited vocabulary shows, is from the same roots, *Sesqu-es*, "it is in small pieces," *ah* --radical from *tem-ah-ack's* (Smith)—"axes," literally "that which cuts off," the word being used by metonymy in the three dialects for booty, from the fact that it was customary to break to pieces or to destroy all articles left behind by a fleeing and vanquished foe. Allowing for the dialectic variation by substituting "s" for the "t," we make the Massachusetts counterpart *Schiquesah-anneg*. Consonantal substitutions occur in all dialects, and, as Prot. A. F. Chamberlain has observed:* "The exact reproduction of the actual pronunciation of many of the American Indians is a matter of considerable difficulty. Even where the vowel and consonantal sounds are comparatively simple, a variation in the utterance of the same word by the same individual on different occasions has been frequently noted, and certain letters fail to be clearly distinguished from certain others." In addition, it proves what Dr. J. Hammond Trumbull has shown, that the language of the Virginia Indians was nearly the same as the tribes of southern New England and that the Powhatan and Massachusetts did not differ more from each other than either differed from the Delaware.

A stumbling-block in its interpretation has been its modern form of *Susquehanna*. The termination *hanna* resembles the Delaware *hanne*, the Massachusetts *hannat*, "a rapid flowing stream," which would seem to make it a "river of booty." But this form is a variation due to continuous use by the English without regard for its meaning. The name did not originally, as I have proven, and as is the case with nearly all the other names of rivers on Smith's map, belong to the stream. The late Rev. John Heckewelder thought differently, and suggested that it was a corruption of the Delaware *Quachish-ick-gel-hanne*, "the long reach river." The fact that Heckewelder failed on this, as well as on the most of his place name etymologies, is nothing strange. The Delawares, among whom he lived, had probably forgotten, or else they never knew its meaning, or why it was bestowed, belonging as it did to another dialect. Moreover, nearly two hundred years had passed away when Heckewelder began his inquiries. The passage of these eventful centuries had covered all traditions, had made many changes in the language, and had obliterated all knowledge of the circumstances that had given it birth, and it would have

*Language: I. I. Mo. stages 1. 2. 3. 4.

remained undiscovered and buried in the mists of the past but for the information that the heroic Captain John Smith and the labors of the Rev. John Eliot have given us. I might also include the life work of that eminent Algonquian scholar, J. Hammond Trumbull, L.L. D. Again, it may be affirmed as a fact mentioned by many patient investigators, that an Indian, rather than show his ignorance, if he does not know the meaning of a word, will give one, and the next inquiry will develop another of an entirely different nature, until the searcher after facts will be inclined to give it up in despair. The Indian, however, did not generalize. Their names were invariably descriptive, and what was more natural than that a primitive people should apply this name to another that brought them articles obtained by plundering an enemy. Booty, such as they had never seen before, and that was far superior to anything they manufactured, fixed the fact in their minds to the exclusion of everything else. The name, years afterwards, was applied to a large extent of territory, and the "Susquehanna Country" became widely known, and was the subject of disputes and treaties for many years. With that story we have nothing to do, as it has no bearing whatever on our subject. It must be remembered, at the time the name first appears, Wm. Penn had not seen the light of day, his parents had not been born, Hudson had not seen the river that bears his name, the Dutch settlement on the Island of Manhattan did not begin until eight years later, the Plymouth colony had not been dreamed of, Champlain at the north was exploring the country contemporaneously with Smith, and the two accounts of the northern tribes agree with each other wonderfully. Smith's map of Virginia was the means of perpetuating the local names through the various cartographers that followed him. Hence as the settlement of the country began to spread, Smith's names, as he heard them uttered by the savage, more or less imperfectly, were retained for all future time.

NOTES ON THE KOOTENAY INDIANS.

BY DR. A. F. CHAMBERLAIN.

I. THE NAME.

The Kootenay Indians inhabit, in British Columbia, "the country included between the Rockies and the Selkirks, stretching from the forty-ninth to the fifty-second parallel of north latitude, and watered by the Upper Kootenay and Upper Columbia Rivers, with their tributaries," and also portions of northern Idaho and northwestern Montana.

The orthography of the name by which this American aboriginal stock—for the Kootenays possess a language distinct from all the rest—is called is uncertain, the etymology is unknown. The Bureau of Ethnology has accepted the form *Kitunaha* (for the family, *Kitunahan*), used by Horatio Hale in 1846, and adopted by Gallatin (1848), Berghaus (1851), Latham (1862), Muller (1882), etc. The most common English equivalent is *Kootenay*, found already in the United States Report on Indian Affairs for 1869, and adopted by Morgan (1871), Dr. F. Boas (1889), the present writer and others. Dr. G. M. Dawson, in his Geological Reports to the Government of the Dominion of Canada, prefers *Kootanie*, which form appears on the various maps published by him. In their "Vocabularies of the Indian Tribes of British Columbia," Drs. Tolmie and Dawson designate the language *Kootenuha*, suggesting *Kittoonuha* as probably more correct. On the map accompanying the volume of Mackenzie's "Voyages," (1801) the name *Cattanahowes* appears in the region in question. Ross Cox (1831) uses the forms *Cootonais*, *Cootonay*; Parker (1840) has *Cootanie*. The Prince of Neu-Wied (Lloyd's Translation, 1843) uses *Kutona*, *Kutana*, *Kutneha*; in Horatio Hale (1846) we find *Kitunacha*, *Kituntha* or *Contanies*, or *Flatbows*; Latham (1862) *Kitunaha*, *Kotani*, *Contanie*. Father de Smet, the old missionary to these Indians, heads his Lord's Prayer "Our Father in Flatbow and Kootenay Language" (1847), and his vocabulary of 1853 is entitled, "A Vocabulary of the Salish or Kootenay Tribe." Mayne (1862) has *Kootanais*. Dr. Gatschet (1871), followed by Bancroft, used *Kootenai*. Herzog (1878) adopts *Kutan* or *Flat-bow*. Other variants are *Kitunaha*, *Contania*, in Schoolcraft (1853).*

The French writers use *Cootonais*, *Cootenais*, *Coutonais*.

* See also *Journal of the American Ethnological Society*, vol. 1, p. 100, where the name is given as *Kitunah*.

Father Coccoło, of the mission of St. Eugène, in a letter to the writer under date of December 14th, 1891, employs, however, Kootenais, and a manuscript vocabulary in the possession of M. Alph. Pinart, San Francisco, has "Counarrha on Skalza." The phonetic transcription is Kitunacha, Kutonaq, K'ona²a, according to Mr. Hale (1846), Dr. Boas (1889), and the present writer (1891). Three names then have been applied to these Indians—Kootenay, Flatbow, Skalzi. The term Flatbows, in French *Arcs-Plats*, in German, *Flachbogen*, explains itself; it is not a name given to their own tribe by the Kootenays. As a tribe, they call themselves Kutonaq. In 1843 we read in the "Travels of the Prince of New Wied (Lloyd's Transl., p. 569): "It is said they call themselves Kutonachas; the French know them by the name of Coutonais; and the Blackfeet call them Kutona."

The etymology of this name is difficult to determine. The present writer questioned many members of the tribe, but could get no satisfactory answer. One Indian attempted to connect the word with kutonaqine ("I am lean", the root of which is toaq, but this is probably a folk-etymology. DeSmet, and other writers as well, hints that the name Skalzi is not of Kootenay origin, but has been applied to these Indians by some of the neighboring tribes. The word is perhaps derived from some of the surrounding Salishan dialects. It is to be noted, however, that in one place* DeSmet speaks of these Indians as "known in their country under the name of Skalzi."

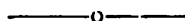
As men, Indians, individuals, these aborigines call themselves aqkts'makinik, of which the writer has heard the following variants: aqkts'makinik, aqkts'makinik. The term ts n aqkts'makinik, where ts n is some sort of a demonstrative or article signifies, "an Indian, Indian." The etymology of this term is not quite certain. In his report to the British Association (1892) the present writer explained it as aqk-ts'mak-i-nik, "the people originating from the ground," in reference to the mythic origin of the Kootenays from a "hole in the ground" east of the Rocky Mountains. In this case aqk, a prefix of uncertain meaning (perhaps an article), i, a connective letter, -nik, a common suffix in this language, signifying "people, originating from, dwelling at," and mak, "earth, ground," would be the chief constituents of the word, the meaning of the ts- being unknown. It, however, the suffix -nik can have the extended meaning of "dwellers, people," another, perhaps a better, etymology suggests itself. Then the word might signify "the strong dwellers," "the people *par excellence*," the radical being ts mak-, ts'mak, seen in the word for "strong," ts mak/k'a. Thus the name would be brought into line with many other appellations of primitive peoples who have called themselves "the men, men *par excellence*."

*N. Y. Jour. Sci., 1891. New York, 1892, p. 16.

The names Skalzi, Kitōnāqā can not be connected with the word for "man" in Kootenay, which is titkat or ditiakat, nor, as is evident, do they bear any relation to the word just discussed.

The name Kootenay, Kootenai, enters into the nomenclature of the region inhabited by these Indians. A large tributary of the Columbia, two lakes in its course (Upper and Lower), two districts in the Province of British Columbia (East and West), two passes in the Rocky Mountains (one on the boundary line between the United States and Canada), are called Kootanie on the maps, sometimes Kootenay, while a town and county in northern Idaho bear the name Kootenai.

In the earlier writers the Kootanie or Kootenay River is termed: "McGillivray's River" (Parker, 1840); "the large river, called indifferently the Koetenay, the McGilvray, and the Flatbow River" (DeSmet, 1863); "the Kootanais River" (Mayne, 1862). This would show, even if the existence of the name Kitōnāqā, as above noted, were unknown, that the river took its name from the Indians, and not *vice versa*. Indeed the Upper Kootenays term the Kootenay River simply aqkinmauk, *i. e.*, "river." The Lower Kootenay (perhaps the whole river) is sometimes called aqkoktlaqat, the meaning of which is uncertain.



TWO REMARKABLE IDOLS.

There are in the Exposition at Chicago two remarkable images which illustrate the distribution of symbols throughout the entire western coast of America and on the various islands of Polynesia. One of these is from the Marquesas Islands, which may be found in the collection of Pennsylvania, in the Liberal Arts building. It represents the god Tikakan, and has the same attitude and position of hands that the Tiki from New Zealand have. The peculiarity of the idol is that there are symbols on either side of the wide open mouth, which are exactly the same as the rain symbols or sky symbols of the Zuni and Moquis. The hands also are apparently made to represent the phallic symbols—the four fingers making arches and the middle finger a single line. The other image is to be found in Emmons' collection in the Government building. It is labeled a shaman's guard-spirit to protect the grave of a shaman. It is a full-length image, and resembles the idol from the Marquesas in the shape of the body and position of the arms and hands, but the expression of the face is more like that of an Indian. The peculiarity of it is that there are on the shoulders and breasts and the hollow of the thigh, carved heads of animals, the two animals' lower heads being near the pelvis, reminding us of the serpent heads which are seen projecting from the thighs of the gold figures of the Chiriquis, depicted by Mr. W. H. Holmes.

FORT MOUNTAIN.

BY ROBERT SHACKLETON, JR.

What Anthony Wayne is to the imagination of Ohio, De Soto is to that of Georgia. In Ohio, if a section of old corduroy road is discovered, it is likely to be at once ascribed to Wayne, even though he may never have been within a hundred miles of the spot. If an aboriginal fortification is found, that, too, must have been built by Mad Anthony. So important were his services to the state, by his march northward from the Ohio, and his overwhelming defeat of the Indians at the battle of Fallen Timbers, that the popular imagination has made his personality omnipresent.

So it is in Georgia with De Soto. No one knows where he marched; where he fought; where he met savage ambassadors. But he went somewhere through Georgia, and so there are fields and caves and valleys and mountains connected by legend or fancy with his name. Small wonder then that Fort Mountain, which bears upon its summit a curiously remarkable prehistoric stone fortification, should be deemed one of the places where he paused on his way to the Mississippi.

The earliest settlers found the fort there and asked the Indians to tell them by whom it was made. But the Indians could not. The traditions of their tribes said nothing of its origin. Their picturesque fancy had failed to frame a tale wild enough to fit the fort and its awe-inspiring location. They looked up at the rocky heights. They shook their heads. It was all a mystery. And perchance, as they gazed, some dark cloud flung its heavy folds about the jagged precipices, and the savages, gravely solemn, turned away, for their Manito would be angered should they question into what he so evidently intended to be hid.

From the top of the mountain there is a magnificent view. Other mountains stretch off into the distance, while below are tree-covered slopes and rocky precipices, and mile after mile of forests and fields and farms. The eye never wearies of the glorious sight, and as one glances over the magnificent expanse he tries to imagine what were the thoughts of the mysterious people who centuries since dwelt on this height.

For here their simple homes once stood. Here their household fires burned. Here wives welcomed returning husbands, and mothers watched tenderly over their little ones, and young people lived and loved, and children happily played. And here, to guard against the assaults of enemies, a stone wall was built across the broad top of the mountain.

The wall has been sadly shattered and broken. It has been flattened out. Many of its stones have been scattered. But it still marks plainly the original line, as made, centuries ago, by the Mound-builders who constructed it.

Fort Mountain is in Murray County, in northern Georgia, and the point from which it may best be reached is the town of Dalton. From the low hills overlooking that pleasantly situated town there is a wide spreading scene. To the westward are the steep heights of Rocky Face Ridge, which Johnston so successfully fortified and which Sherman tried in vain to pierce, while to the eastward the eye sweeps over fourteen miles of level country to the beautiful Cohutta Mountains, with Fort Mountain standing out from among them impressively distinct and grand.

To reach the mountain one may obtain a conveyance in Dalton, or go by mail stage from Dalton to Spring Place and there make arrangements for the further trip, a distance of several miles. The entire distance, by road, from Dalton to the foot of the mountain, is about seventeen miles.

Nestled picturesquely near the foot of the height is the little village of Fort Mountain, where there are a few little houses, most of them of log, a couple of little stores, two blacksmith shops and two grist mills. The village is a center for many homes perched isolatedly upon the mountain sides or hidden among the valleys of the region, and therefore the number of places of business is more than would be expected from the actual population of the little place, there being within it somewhat less than one hundred souls.

It was a winter day that we ascended the height. The snow lay in great patches on the fields round about, and clung in long lines and sweeps against the abrupt sides of the mountain, the long white streaks alternating with the darker portions where the sun had melted the snow away.

A guide is needed, at least in winter, for without him hours would be lost in attempts to discover a practicable way to the summit. Yet a guide it was very difficult to obtain. The men of the village were loth to go. They said it was too dangerous; that there was too much snow; that there were stretches of slippery ice. Fortunately, however, there happened to arrive a tall, finely-formed mountaineer, athletic and active, an enthusiastic hunter, and one who, as he said, "knewed every foot o' the mounting." He was quite willing to make the ascent with us, and we started at once. Over the lower slopes and by way of the lower valleys, we wound gradually upwards, passing here and there lonely log cabins, whose occupants exchanged cordial greetings with us and eyed us curiously. The great outside chimneys of stone; the broad fire places, capaciously deep; the blazing logs, the myriad sparks; the drowsily-whirling spinning-wheels; the stately swing of the great looms—

united to form a succession of peculiar and attractive scenes. We passed little fields, where advanced methods of agriculture are unknown and undreamt of, but where corn and vegetables are grown, and in some sheltered nooks, where soil has washed down from steep surrounding slopes, the ground is extremely fertile. In a pleasant, but isolated valley, we found the home of a widow, who lives there with her little children. "But is it not a lonely place to live?" No. Our guide does not think so. The chivalry of the mountains teaches protection of womankind, and the widow is safe there. She has a little farm; she has a good orchard. The men of the neighborhood cut plenty of firewood for her and carry it to her door. That she is a woman, and in need of protection, is enough to constitute every mountaineer her protector. Passing onward, the heights begin to grow steeper. Long sweeps must be made, up ravines and across steep inclines. We wade through snow in the hollows. We climb with precarious foothold over slippery ice. On the lower slopes are pine forests, sombre and dark, but higher up the pines are much less plentiful and the sturdy oak takes their place. Laurel bushes, too, grow on the high slopes, and wild grape vines clamber up rocky precipices or fling themselves from the tops of trees. What is locally known as the "ivy bush" is frequently seen, and our guide remarks: "The deer eats hit" "Hit," for "it," is almost universal in the mountains. "They likes hit, and hit is good for them; but for cattle or sheep or pigs hit is poison. No mammal what has a gaid can eat hit, and we 'bout you pours grease down their throats at wads."

Now and then we notice deer tracks in the snow, or those of catamount and squirrel, wildcat and rabbit. There are but few rabbits on the mountains, however, for the "cats" catch them. Both rabbits and "cats" feed at night, while squirrels, feeding in daylight, are safer from such attacks. Crows call to us from the tree tops, or "fajun hens" (woodcock) fly swiftly off. At length, after wearisome climbing, the top is reached, but the necessary following of zigzag sweeps has carried us same distance from the end of the mountain where the fort is, and we walk along the undulating ridge till it is reached. The mountain is a detached ridge, several miles in length, forming part of the Columbia Range, and it towers in bold majesty, two thousand feet above the level land which stretches off to the westward. The fort is at the northern end of the ridge. The soil on the summit is rocky in the extreme, and myriads of stones, of all sizes and shapes, cover the ground. The northern end of the mountain breaks off in abrupt and wildly rugged precipices of rock, where only the most expert climbers can by possibility, in the most favorable weather, make their way, and where a disaster would be fatal. The views in different directions are magnificently grand, but when we asked our guide to tell us from what point could be seen the most wide and varied he was

puzzled. The question has never occurred to him before, and, after a reflective pause, he answered, with cautious conservatism: "That thar's a fine view that-a-way, and (with a graceful sweep of his arm) this hyar's a fine view this-a-way." And, indeed, it is difficult to make comparisons, for everything is vast and magnificent. The forests of dark green pine, far, far below, alternate picturesquely with cleared fields and open spaces, while the little cabins and homes seem insignificantly small. The sun shines brightly, making the other mountain heights, snow-capped and white, shimmer and glisten with resplendent glory. The wind rushes over the mountain-top with wild and invigorating strength. The northern end of the summit is separated from the rest of the mountain by the stone wall which constitutes the fort. The enclosed space is some eight acres in extent, about one-half being almost level, and the remainder in easy slopes. The northern edge of this space needs no defensive wall, for there the cliffs descend in rocky inaccessibility. Rounding, too, on the eastern and western sides, the cliffs are wild and steep, and, although not so sheer and abrupt as at the northern end, are yet so abrupt as to make it impossible for an attacking party to scale them in the face of even the slightest opposition. Toward the south, however, there is no natural protection, and there it is that the wall is built, stretching from side to side of the ridge. And the construction of the wall is remarkable in the extreme, considering that it was undoubtedly the work of an aboriginal race. It is not straight. It is not curved. Instead, it is built in zigzag lines, and quite evidently with the intention of making it impossible for any assaulting force to advance without being taken in flank, unless they should charge right against the outer point of one of the angles.

The wall, while of zigzag shape, is yet not built with regularity. The angles vary greatly in degree and the zigzags are of different lengths. One salient angle, which projects a rounding outward, measures, on one side, fifty feet to the beginning of the curve of the point. On the other side it measures sixty-four feet. The diameter of the curve of the point is twenty-four feet. The height of the wall is now not more than from two and a half to three feet, but the stones lie scattered in a width of from fifteen to twenty feet, and the universal testimony of all who know anything of what it was in former days is that it was narrower and higher. One very old lady in particular remembers that her father, who, about the beginning of the century, climbed to the top of the mountain with one of the first Moravian missionaries that entered this section of the state, used to speak of the wall as having been, when he first saw it, quite carefully made and of a good height. But in the years that have passed since then the wall has been sadly shattered. Picnic parties have at times ascended the height; barbecues and camp meetings have been held there; and it seems to have been con-

sidered the duty and privilege of very many of those who made the ascent to indemnify themselves for the exertion by tearing down the wall. More than this, too, treasure-hunters have been at work. A fortified camp, occupied, as they believe, by De Soto, would, so it has seemed to them, be a place of deposit for much of mineral wealth, and so they have torn and dug, vainly seeking for what they can not find.

The wall is from a fifth to a sixth of a mile in total length. The stones were heaped up—not regularly and evenly piled, and in this respect the wall resembles that of Fort Hill, in southern Ohio. In the Fort Hill wall, however, there is a considerable admixture of earth, while the wall on Fort Mountain is of stone alone. There are but few small pieces in the wall. Most of the stones are from two to five inches thick, range from eight to eighteen inches in length, and are from six to twelve inches wide. In places advantage is taken of huge stones firmly set by nature into the mountain side, and at such spots the wall runs up to either side of the rock. There is but one entrance-way in the wall, and that, so it is claimed by some, was made in recent years to allow of a passage into the fort by horse-back riders, there being a long and roundabout way to the summit by which, in some weather, it is possible for a good horseman to ride to the top. Others, however, believe that the entrance was left by the first builders, and this view seems to us correct, but the entrance-way has been cleared in late years by some who found it blocked with scattered stone.

It is peculiar to find on Fort Mountain the same general plan of fortification that was constructed by the Mound-builders of northern Ohio. In central and southern Ohio, where the immense and elaborate works are, the types are usually squares or octagons or circles—something, that is, where there is a wall completely enclosing an interior space—while in northern Ohio the general type is that of a walled-off plateau, with abrupt banks on three sides and the wall on the fourth, this being the exact plan that was carried out on Fort Mountain. The northern Ohio walls, however, are always of earth, without any mixture of stone.

The type extends eastward; while at the Cattaraugus Indian reservation, in New York state, a missionary told us of an ancient fortification for which no one could account, but which, it was generally supposed, must have been built by the French at some very early period. We accompanied him there, and found a walled-off peninsula point, commanding a splendid sweep of view up and down a beautiful valley, and we saw that it was undoubtedly a fort of the northern Mound-builders. The Mound-builders of both north and south chose, whenever they could, a location which gave a fine view. Naturally, of course, when they chose an abrupt cliff, seeking for an easily defensible position, the view was usually a necessary incident, but obser-

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pointed to an eminence nearly as lofty as Fort Mountain, and we asked how it had acquired such a name. He replied that it was because Indians had grown potatoes upon its summit; that the first white settlers and backwoodsmen had found them thus cultivating the mountain top. It may be objected that the fact that Indians cultivated one mountain summit is no direct proof that Mound-builders cultivated an adjoining one, but we offer it to show the extreme probability of what had already, from all the surroundings and conditions, seemed a correct hypothesis. And the Mound-builders must have resembled the modern Indians, their conquerers, in many respects. They lived in the same forests. The same materials were at the command of each for clothing and for weapons. They fished in the same streams. They hunted the same game. They cultivated the same soil.

And, too, the conquered race was not completely exterminated. It was distinctively a custom of the Indians to incorporate among themselves quite a proportion of any people or tribe whom they overcame. A considerable number, then, of the Mound-builders would become members of Indian tribes, and from them the Indians would learn and adopt such of the Mound-builders' ways of living as it seemed to them advantageous to acquire. The Mound builders seem to have been a more advanced and peaceable people than the Indians, and the latter must have learned considerable from them, ignoring, however, as of no account, their religious forms and observances, and not valuing their fortified heights and towns.

Where the Fort Mountain community obtained their supply of water is not altogether apparent. There is no sunken water pit, as there is on the summit of Fort Hill, nor could we find a spring. There is, indeed, on the summit, a fine spring termed the "fort spring," but it is some little distance away from and outside of the wall, and in a hollow which could easily be commanded by a besieging force. It therefore could not have been the source of supply upon which the community relied. But the mountain is full of fine springs, and one could readily have been opened up at some protected point within the wall. Although the mountains are generally known as the Cohutta Range, some of the mountaineers will not believe but that this is a great misapprehension. "Why?" said one of them, with gracefully free emphasis and courteous manner, "ef a gentleman" (every one here, it may be mentioned, no matter who it may be, whether a "lady" or a "gentleman") "ef a gentleman says, 'whar's my stock?' I say, 'I seen them on Fort Mounting,' or, 'thar north of the fort spring', or, 'thar over on Old Grassy,' or, 'thar in sech a place', and then he knows where to go, and next day he goes and finds them thar. But ef I say, 'I seen them on the Cohutta Mountains,' this with an indistinguishable accent of infinite pity

and contempt for the mountaineer who could make such a reply) "he don't know *whar* to look; he *knowed* they war in the *mountings*; that's war he turned them out to range. What *he* wants to know is *which* mounting. No. Thar's no name for all on them. Each mounting has a name."

We were not able to obtain any relics which are of distinctive value as throwing any particular light upon the aboriginal people. From the summit we obtained some arrow points of dark flint, of a type common both in the north and south. From the slopes we obtained a few fine specimens of arrow points of quartz crystal, like some which we have obtained at other points in Georgia and also in the valleys of the Shenandoah and Passaic. These crystal arrows are quite commonly picked up, too, in various fields near the base of the mountain. The crystal points are more difficult to successfully make than are those of flint, and are seldom, in fact, equal to good flint arrows in shape and workmanship. That they were made to such an extent in a district which, like this of Fort Mountain, has so much of flint rock to offer, seems to us one of the many proofs that the aborigines loved beauty, the clear white crystal being certainly a prettier material than most flints. At the very base of the mountain we obtained a large grooved battle-axe, ten and three quarters inches in length by five in width, made of fine-grained, greenish-blue sandstone.

That this is a Mound-builders' country does not rest alone on the fact of the existence of the stone fort. There are a number of mounds in northern Georgia, and General Sherman, when in this part of the country as a lieutenant, some twenty years before his Atlanta campaign, made a special visit to the even then famous Hightower group on the Etowah River. On Kelley's (once known as Cunningham's) Island, in Lake Erie, is a large rock, curiously marked with hieroglyphics of the Mound builders, and at the little village of Independence, near Cleveland, is another. Here in the south we were for a time in hopes of finding a stone equally curious with those two of the north, for we heard of a stone covered with strange letters—characters which the erudition of the mountains could not translate. The accounts were so explicit that we could not but believe that a marked stone had actually been discovered, and we searched long and earnestly over the mountain top. But we could not find it. Then we tried to find some one who himself had seen it, and this was unexpectedly difficult. Those who heard of it could but describe it from hearsay, and then refer us to one or another who, so they thought, had most likely seen it, and in our quest we traveled miles of distance and traversed hills and valleys. At length, when in the point of deciding that the entire story was a myth, we were told of a man who, our new informant said, had actually found the stone. He was six miles

away, but we at once sought him out. An honest sort of man he seemed, and one quite willing to tell all that he knew. Yes, he had found the stone of which people talked so much. He had come across it some fourteen years ago. He had noticed a flat stone, about the size of a table-top, lying by the fort entrance, and had from some impulse turned it over. There, on the lower side, were the characters. "Were they cut in the stone?" No, they were not cut. They were painted on with red paint. "Was the flat stone lying over another stone, or were the letters right against the ground?" They were right against the ground. "An' they must hev ben thar ever sence the fort war a-built on the mounting!" The letters are no longer to be found. How long they existed, with the paint against the damp earth, is a problem of easy solution. We have explained this at some length, so that other visitors to the mountain who may hear similar stories of the mysterious stone, may know somewhat of their foundation and origin.

Since talking with that discoverer we have been told of some other mountaineer, name unknown, who one day clambered perilously to some cave, by such a dangerous route that "a million dollars" would not tempt him to try it again, and who found by the cave-mouth a strangely marked stone, with "about a thousand" strange characters upon it, in "either Latin or Greek." This man, and his cave, and his thousand letters, we have not endeavored to find.

They are an interesting and curious people who now inhabit the mountains and the mountain valleys, and they are destined to become as extinct as the very Indians and Mound-builders. Here, still, is the primitive wilderness, the pioneer backwoods; where men go into the forest for fuel and for much of their food; where women knit and spin, and with their own hands make the family linen and stockings; where the rifle and pistol is always carried, where there is splendid physical beauty and development of both men and women, and where clear, bright, fearless eyes calmly meet your own. At a lonely spot, on a road at the mountain's foot, stands a plain church, of squared logs. A little burying ground is close by, and all about is a dense forest of pine trees, darkly hemming the church and the burying ground in. Only a few of the graves have headstones. Most of them bear neither name nor date. Built up about some are frameworks of log, with logs laid over the top as well, to protect the buried bodies from prowling beasts. Some of the graves are covered all over with pretty little fragments of mineral and rock, and the effect of this simple ornamentation is touchingly pathetic. Over that lonely little grave yard the great mountain grins by towers, and silence and unspeakable mystery brood among the dark pine trees that solemnly keep watch round about those humble graves.

One afternoon, far up on one of the mountain slopes, we watched the glorious sunset, and as the shadows deepened in the valleys, and the splendid light still touched the mountain top with shining glory, we thought of the vanished Mound builders—sun-worshippers as they in all probability were—and of what, on that very mountain summit, must have been their thoughts and their emotions and their wildly solemn rites, many and many a time as the sun was setting even as we then saw it decline. And then we went down into the darkened valleys, and all about us was sombre gloom. We looked back again at the mountain top. It was still bright. It was luminous with light. But even as we looked the light grew fainter and fainter, and soon the mountain summit was wrapped in a gloom as impenetrable as is the history of the strange people who once dwelt there.

Correspondence.

TURANIAN AND AMERICAN STOCKS

Editor American Antiquarian:

My name has been mentioned in your numbers for January and March last in a manner which, though meant in all kindness and courtesy, might convey to your readers some erroneous impressions in regard to my views on certain ethnological questions. I must, therefore, solicit a brief space in which to make these views clear, and at the same time to explain certain points in which the recent progress of ethnology has disposed of theories that were formerly held by eminent authorities, but are now discredited and obsolete.

In your January number it is stated that "Dr. H. Hale and others say that the Basques, Bretons, were Turanians." An allusion is added concerning the "Turcomans." I do not think I have ever used the word Turanian except in the limited sense in which it is at present employed by its distinguished inventor. The word was first proposed by Prof. Max Müller nearly forty years ago, in his well-known "Lectures on the Science of Language" (1854), and its intended application was more fully explained in his first series of "Lectures on the Science of Language," delivered in 1860. The origin of the word was found in the Sanskrit *Varuṇa*, the *k* being in this a term employed by the speaker of that language to distinguish the nomadic tribes of the north of Asia from the Indo-European *Ar* or cultivators. Max Müller enlarged the meaning of the word which he derived from the Sanskrit descriptive term so far as to include all the

"Allophylian" peoples of Asia and Europe—that is, peoples who were not of Aryan or Semitic origin—except only the Chinese. He was too learned and cautious to include the latter or any of the American or African languages in his new category. Some of his followers were not so discreet. He presently had the mortification of finding his newly made class expanded to a preposterous extent. "Turanian" became the name of a sort of ethnological and philological scrap-bag, into which all the races and languages of the world that were neither Aryan nor Semitic were thrust indiscriminately. This unwarrantable misuse of the eminent professor's hypothesis compelled him to revise it in the light cast upon it by later inquiries. His numerous admirers were pleased to find that in his recent revision of his work on the Science of Language (1891) the "Turanian theory" is abandoned altogether, and the name is only retained as a synonym for the more common term of "Ural-Altaic," employed to describe a well-known family or group of North Asiatic languages. Except in this sense, the word Turanian is now as obsolete and extinct in ethnology as "phlogiston" or "caloric" is in chemistry.

In *THE ANTIQUARIAN* for March it is stated that Albert Gallatin "did not discover the relation between the Cherokees, the Dakotas or Sioux, and the Iroquois, but classed them as different stocks," and it is added that I and others "maintain that they were different branches of one stock or family of languages." This statement is not exactly just to either Gallatin or myself. In my paper on "Indian Migrations as Evidenced by Language," which was read at the meeting of the American Association for the Advancement of Science in 1882, and which you did me the honor of publishing in *THE ANTIQUARIAN* for January and April, 1883, I was careful to state that a connection between the Cherokee language and that of the Iroquois had been long suspected; that Gallatin quotes Dr. Barton as thinking the Cherokee to belong to the Iroquois family, and adds that he was himself inclined to be of the same opinion; but with his usual judicious caution, he remarks, "We have not a sufficient knowledge of the grammar, and generally of the language, of the Five Nations to decide that question."

In 1882 this difficulty was removed, and I was then able to show the similarity of the two languages, not only in many of their words, but also in their grammatical structure. My conclusion of the kinship of these languages, which I had supposed to be apparent at a glance from this evidence, was, to my great surprise, sharply criticised by a philologist from whom I should have expected sounder judgment, M. Lucien Adam. The able linguists of the Bureau of Ethnology then took up the question, with the result that the position of the Cherokee branch as an offset of the Iroquois stock is now settled beyond doubt.

With the Dakotan (or Siouan) group of languages, the case is entirely different. That this group constitutes a linguistic family, or stock, entirely distinct from the Iroquois and all other known stocks, is a fact which, so far as I know, has never been questioned by any philologist. Certainly I have never doubted it. I may add that to those who desire to pursue the study of the linguistic classification of the American tribes beyond the point where it was left by Gallatin's "Synopsis" (1836), there are now offered two most valuable, and indeed indispensable, aids, both published in 1891, viz., the monograph of Major Powell on "The Linguistic Families of America North of Mexico," which appears, with an excellent map, in the Seventh Annual Report of the Bureau of Ethnology, and the comprehensive work of Dr. Brinton on "The American Race," which catalogues and classifies all the known tribes and languages of North and South America. The importance of the study of these languages can not be more impressively set forth than in the words which I have quoted in my "Iroquois Book of Rites" (1882), from a letter of Prof. Müller to myself: "It has long been a puzzle to me why this most tempting and promising field of philological research has been allowed to lie almost fallow in America—as if these languages could not tell us quite as much of the growth of the human mind as Chinese, or Hebrew, or Sanskrit." In the ten years which have since elapsed, much has been done by the authors whom I have referred to and several other noted scholars (including some highly-esteemed contributors to THE ANTIQUARIAN) to remove this reproach from American philology.

HORATIO HALE.

THE FLINT KNIFE FROM LACHISH.

Editor American Antiquarian:

The fragment of a flint knife found at Lachish, and published by Rev. Theodore F. Wright in the March number of THE AMERICAN ANTIQUARIAN, resembles numerous similar relics of the age of stone that occur in various parts of the world. It was fashioned out of a long flake detached by a single blow from a large core, or nucleus, of flint. The curved side results from the natural conchoidal fracture of flint, while the "planes of surface" of the opposite side show where similar long flakes had been previously detached from the same block. The regular serrations of the edges were made subsequently in the sharp edges of the flake, which would otherwise have been liable to be broken into irregular notches.

It is possible that such a stone knife, or saw, as this might have been employed for circumcision, but I should suppose that its saw-like edge would not be so suitable for that operation as

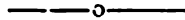
the natural sharp edge of a flint flake. By making regular teeth in the sharp edge of a flake, a more efficient tool was produced for cutting comparatively hard substances.

The flint knives used by the embalmers in Egypt for making an incision in the body, through which to remove the intestines, as Herodotus (ii, 86) informs us was their practice, were very different implements from this. Several of these have been found in tombs in Egypt and are preserved in different museums. Three as beautiful examples as exist belong to the "Abbott Collection," in possession of the New York Historical Society. They are shaped like a large curved razor-blade, with the blade and short handle made out of the same plate of flint, which is about a quarter of an inch in thickness. The clipping is exquisitely done on both sides; and the largest is ten and seven-eighths inches in length, exceeding in size any of which I have any knowledge. These have never been published (so far as I am aware), but I understand that they soon will be.

Two similar ones have been published by Lepsius, in *Zeitschr. für Ägypt. Sprache* (July, 1870). There is one in the Egyptian Museum in Leyden, one in that in Turin, a third in the Antiquarian Museum in Edinburgh, and a fourth in the Meyer Museum in Liverpool. Finally, one belonging to Gen. Pitt-Rivers is figured in the *Journal of the Anthropological Institute* (Vol. xi, Pl. xxxiii). These are all the examples of which I have any knowledge.

HENRY W. HAYNES.

Boston, May 30, 1893.



WONDERFUL FINDS.

Several wonderful finds have been reported lately, some of which come from that totally unreliable newspaper, the *St. Louis Globe-Democrat*. The first consists of a ruined city, south of San Diego, not far from the Gulf of California, which has all the features which Charney has described as peculiar to Central America. The other consists of a marvelous series of pictographs in Southeastern Utah. It appears that the elephant and the mastodon have wandered in that direction, and Joe Mulhatten or some other imaginative writer has invented a picture of them associated with an infant contending with snakes, and a number of other untold wonders. It does not take long for the archaeologist to detect these stories, but they are a disgrace to the paper publishing them, and they ought to be suppressed.

Editorial.

THE CONGRESS OF ANTHROPOLOGY.

The Congress of Anthropology, which has been looked forward to with so much anticipation, has been held and is now a thing of the past, though its history remains to be written. This congress had peculiar difficulties at the outset. It was a question with the president of all the congresses, Mr. C. C. Bonney, what the term signified and what the scope and division of the science should be. The difficulty was overcome by appointing Professor F. W. Putnam as the chief of the committee, and leaving the classification and arrangement mainly to him. In attending to the work of getting the exhibits into shape, and in the vexatious delay of the building which was to contain it, this gentleman had but little time to give to the congress. Invitations, however, were sent out and quite a large number of responses were secured, mainly from the specialists in our own country.* The date for the congress was the next question. There was a date on which a large number of scholars and scientific men united, and the Congress of History, Literature, Philology, Oriental Archæology and Folklore was a result. This was a great success, the most so of any congress which has been held. The papers on Folklore attracted much attention, and the reading of the papers before such a large assembly gave them *eclat*. The science of anthropology, which is by some classified under the head of natural history of man, holds an important part in the American Association, and the date for this congress was placed after the meeting at Madison, so that parties could attend both meetings. This would have been well if the congress could have been held during the week of the Philosophical Congress, in connection with the geologists, who seem to be interested in this subject, but unfortunately it was placed on the date of the Labor Congress, and seemed to be out of place. Still the attendance on the first day was excellent, and it started out with considerable promise. The address of the president, Dr. D. G. Brinton, was a masterly production. It was, however, decided by the committee to hold the future sessions on the grounds of the World's Fair, and as near the Anthropological building as convenient. Recital hall was secured for the meetings. This hall is separated from the "concert hall" in the Peristyle by a portiere, and proved to be an unsuitable place, as

*The foreigners who responded offering their papers to be read, rather than promising to be present in person.

the concert began each day at twelve o'clock, and the preparations for it at an indefinite time preceding it. The printing of the programme for the congress was delayed, and there were persons on the programme who did not know until the third day that their papers had been accepted, or that they were to read them.

The second day was broken in upon by the change. Since no public notice was given of the place of meeting, even the persons assigned to parts were late, while the audience was at a loss to find the place. Papers were read, however, by Mr. H. C. Mercer on the "Archæological Relics on the Gravels of Spain," on the "Relics of the Champlain Valley," by G. H. Perkins; and on the "Anthropological Work of the University of Michigan," by H. I. Smith, also on a "Collection of Games in the Anthropological Building," by Stewart Culin. But papers on the "Mexican Calendar System," by Mrs. Nuttall; "Civilization of Peru," by Emilio Montes; "Cave-dwellers of the Sierra Madre," by Carl Lamholtz; "Orientation," by A. L. Lewis, and "A Central Group of Mounds in Great Britain," by John S. Phene, were not read.

The third day began with a discussion on Dr. D. G. Brinton's paper, "Alleged Evidences of Contact between Ancient America and Other Continents," the drift of which was that there were many evidences. This occupied time, but it was profitable. A short paper on bark cloth by Walter Hough was read. Miss Alice Fletcher followed with an interesting paper on "Love Songs among the Omahas," illustrated by music by J. Comfort Fillmore. But the discussion was cut off by the confusion of the place, and all the other papers were crowded out.*

The fourth day was the best of all, as it was full of solid work and contained some rare papers. It began with a paper on the "Ritual Regarded as a Dramatization of Myth," by W. W. Newell, which was followed by the "Ritual of the Kwakiutl Indians," by Dr. Franz Boas, and one on the "Walpi Flute Observance, a Tusayan Dramatization," by J. Walter Fewkes. Mr. Kunz read a paper on the "Folklore of Precious Stones." The last half of the programme was crowded out as usual, and the papers by Horatio Hale, A. F. Chamberlain, Philip Jacobsen and Frederick Krause were not read. In the afternoon Prof. F. W. Putnam gave a summary of the collections of archæology in the Anthropological building, and apparently endorsed the prehistoric character of one exhibit, which has created considerable discussion, namely, the exhibit of the relics from the Hopewell Mound. Mr. Frank Cushing, who is so well informed on dramatic ceremonies and symbolism, was present and read a paper on the Cave-dwellers, and afterwards led a party through the Cliff-

* The paper on the "Archæological Building" was secured. Mr. W. H. Holmes read his paper on "The Archaeological Building," Mr. J. H. St. John read "The Stone Implements," Prof. O. L. Mason, "Industrial Archaeology," Mr. St. John, "The Stone Implements," and Cyrus Adler, "Religious History and Ceremonies."

dwellers building, explaining the symbols on the pottery. Mrs. Nuttall read a paper on "Mexican Archæology," Mr. G. A. Dorsey one on "South American Archæology," and Mr. Ernest Volk one on "Cache Finds in New Jersey."

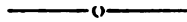
The programme for Friday was on religions. The most interesting papers were "Historical Religions," by M. Jastrow; "An Ancient Egyptian Rite," by Mrs. Sarah Stevenson; "Chapter on Zuni Mythology," by Mrs. Matilda C. Stevenson; "Religious Symbolism of Central America," by Francis Parry, of London. Several able papers on linguistics were read on Saturday—one by Dr. D. G. Brinton, on "Present Status of our Knowledge of American Languages," one by Dr. Franz Boas, "Classification of Languages of the North Pacific Coast," and another on the "Kootenay Indian Languages," by A. F. Chamberlain.

The sessions of the Congress were closed with the morning meeting, though an opportunity to visit the archæological collection in the German village and a social gathering and dinner were given in the evening, to which a number of foreign guests were invited.

The programme was a very excellent one and the papers very valuable, but there was one great fault. Out of thirty-eight papers that were read before the Congress, fourteen were read by five persons, one appearing four times and two others three times, every one of them connected with institutions, in which they have abundant opportunity for the publication of their views. There were fifty-eight papers and fifty-two persons on the programme. Scarcely a single person who was not a resident of North America appeared before the Congress.* It can hardly be called a world's congress. Though it gave an excellent opportunity for the specialists who have been engaged in the work for the last fifteen or twenty years to meet one another and exchange greetings, yet so far as increasing the acquaintance of anthropologists or advancing the science into the notice of the world, the Congress might as well have been held at Madison or Rochester, or anywhere else, as in connection with the World's Fair. It was a rare opportunity for those who were present to study the relics and casts and ethnological collections, which have been gathered in such great numbers and placed in the Anthropological building, some of them by the explorers, who have been employed at the expense of the directory and who have been very successful in their work. The money which has been furnished has accomplished great things. It has brought the subject of archæology before the American public as it never has been before, and has accomplished by this means what the Congress was unable to do—made the subject popular. More-

* A large majority of the persons who read papers were members of societies in eastern cities, but not a single collector or private explorer from the west, and but one gentleman from a western institution.

over, a permanent museum is likely to grow out of the collection, which will continue to be a great educator for the entire west and which will be greatly to the credit of the directory as well as Prof. Putnam, who has had charge of the collection. A large number of private collections have been on exhibition in this building, some of them from California, others from the Cliff-dwellers, from Colorado, from Wisconsin and from Ohio, from Missouri and Arkansas, from Mexico, from Costa Rica; others in the Government building from Alaska, and still others in the State buildings and Liberal Arts building, some of which will undoubtedly be kept in Chicago, but others will be returned, and will form the nucleus of museums in the regions from which they came.



THE ADVANCE OF ANTHROPOLOGY.

The science of anthropology in America is making wonderful strides. There is no department which is more popular and none which has so much promise for the future. It is generally so free from technical terms and so easily understood as to interest all classes. It relates to the history of man, and so enlists the lovers of history, but it also joins on to the natural sciences, and so enlists the specialists. It is, in fact, the common ground on which pure scientists and the amateurs and the people of ordinary intelligence can meet and each be appreciative. This has been its stronghold, and there are many advantages in retaining it.

It has been a misfortune, during the last year, that bitter discussion has arisen over a subject concerning which very little is at present known, and which should, by all means, have been kept in the background until more was known, namely, the subject of paleolithics. This discussion arose more among the geologists and was like a border warfare, in which neither geologists nor archaeologists are quite sure as to what belongs to them. It was at the meeting of the American Association at Madison transferred to the department of anthropology, and the points in dispute were made to turn mainly on the difference between "relicts," so called, and genuine paleolithic relics—the geological position of the relics being discussed by the geologists and the character of the relics by the archaeologists—the same parties who have so filled the papers and periodicals with a war of words meeting face to face and carrying on the contention. We are not able to say at the present juncture which of these parties are nearest the truth, for it is too early for any conclusion to be reached, but we are quite sure that the public sympathy has gone toward the clergyman who has so courageously borne the brunt of the attack, and indignation has been felt toward those

who sought to humiliate him. "From the head of the ugly toad of criticism Prof. F. G. Wright has plucked the jewel" of a world wide reputation. The question now is, since contention has come into our own fields what will be the attitude of the specialists? Will they grant that there possibly may be a difference between the argillite and the jasper relics and wait for the discovery of the bones of extinct animals, or will they crowd one another and become dogmatic and bring upon themselves the charge of dogmatism, the very charge which they themselves most abhor, and the last thing which they think it possible for scientists to exercise. We think that the majority of specialists will follow the better course and be liberal and generous to one another, tolerate differences of opinion and patiently wait, in the confidence that the truth will appear. There is no nobler class of ladies and gentlemen on the face of the earth than that very class which has been making such sacrifices for the sake of laying the foundations of the science of anthropology in this country, and we think that we can trust them all to go forward with the same self-forgetful and truth loving spirit. We are glad to know that the editors of the journals which are devoted to the different departments of the science are so friendly with one another and are so kindly to the student and the amateur, as well as so partial to the specialists, and that they stand in well with one another and the public. We have rejoiced in the success of these journals and admire the scholarship exhibited in them. We are sure that every one of them is decidedly opposed to anything like Cæsarism in science. The danger does not threaten us from the journals, nor from the students or explorers in the field, but comes, if it comes at all, from those who hold positions of power and are able to dictate an opinion.

To all such we say, the appropriations of government, both national and state, the liberal gifts of men of means, the fitting out of expeditions by persons of liberal tastes who have felt an interest in the subject, the patronage of the press, the establishment of large museums, as well as the increased facilities for exploring and gathering relics, will depend upon the freedom and magnanimity with which the specialists welcome the amateurs and practice the amenities in their discussions and the courtesies in their intercourse with society, for the preservation of good form, is expected of them in all places.

There is, however, a tendency which is sure to produce a reaction even before the party is aware of it, for there is nothing that the average American is more determined to defend than the liberty of opinion and the personal right to defend it. We shall illustrate the point by a single quotation from an able paper presented at the recent Congress of Anthropology. It was the closing sentence, but it struck many with surprise, and especially because it was uttered by one whom all esteem as a gentleman of most

amiable disposition and courteous manners. The sentence is as follows: One fact is demonstrated beyond peradventure, that superficial work, casual resemblances, agreement in unimportant particulars, will not do *any longer* in ethnology. The work of E. H. Man on the Andaman Islands, of Im Thurn in British Guiana, of Ellis in Polynesia, of Schweinfurth in Africa, of Boas and Murdock in Alaska, of the Bureau of Ethnology, in its peculiar lines will be accepted at the bank, but further drafts on our credulity will be dishonored, if it closes the establishment altogether.

It is possible that the editor took the sentence altogether too seriously, for the gentleman who read it is sometimes given to toking in a subtle kind of way, and yet it did seem somewhat singular that a score or more of specialists in the various departments of symbolism, folklore, paleolithics, sociology and ethnology, whose names are as well known as those mentioned, should be told that only one or two out of the whole number would be entitled to have their drafts honored at the bank and the rest would be rejected unceremoniously. It seems a strange anomaly that this sentiment of exclusiveness should have fallen from the lips of one of the most liberal of scientists in America, and that the names of the most liberal scholars should have been brought in as a shibboleth for other scientists and anthropologists to swear by. We do not believe that the sentence expresses the true sentiment of the writer, but we quote it from the very manuscript, by the consent of the writer, and use it, not as a weapon of attack nor as a signal to call back any workers in the field for new orders, but in order to emphasize a protest against that narrowing tendency that would shut out many honest workers from public confidence, and would seek only to "perpetuate the names of the illustrious few."

As an evidence of the confidence which the specialists in our department enjoy, we would state that Dr. D. G. Brinton, who was chairman of the Congress, was elected president of the American ~~Association~~ at the meeting at Madison—an honor which has not been conferred upon an ethnologist since Mr. Lewis H. Morgan was elected at Boston. Dr. Franz Boas was also elected president of Section H. Prof. F. W. Putnam, who has long been the secretary of the Association, now holds the most responsible position which the Directory of the World's Fair would commit to a single man. Prof. O. T. Mason has been elected a member of the Polynesian society, the only American who has thus far been honored. Besides these, Mr. Walter Fewkes and Mr. Frank Cushing had the honor to lead the celebrated Hemingway Expedition to the region of the Cliff-dwellers, and Mr. A. F. Bandelier is now in South America, conducting ethnological explorations. Miss Alice Fletcher was honored by the Government with a responsible position in connection with the division of land among the Dakotas. Miss

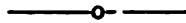
Zelia Nuttall, and Mrs. A. C. Stevenson and Mrs. Matilda Stevenson are recognized as among the very best observers and writers on archæology. The department has also received popular favor wherever it has been properly represented, and we can ask nothing for it except that the amateurs and the beginners should be encouraged, and brought up to the high standard which the leaders have set for them as rapidly as possible.

THE COLUMBIAN MUSEUM PROJECT.

To show the deep under current of interest in archæological matters by the people in the interior, notwithstanding the lack of organization or even of representation, we are glad to say that the project of establishing a Columbian museum, of which the chief object will be to preserve and increase the number of articles which have been gathered in the Anthropological building at the expense of the directory, is meeting with the most hearty approval from all sides. The one plan is to have the Art building retained and to organize a society, or form a board of trustees which shall be a close corporation, but which shall be the overseers of the museum with a permanent directory at the head, with the following departments represented: Geology, Mineralogy, Botany, Zoology, Anthropology, including Archæology, Ethnology, Folk-lore and Physical structure of man. The liberal measures which have been adopted to make the exposition a success will no doubt be given to this museum, provided the gentlemen of wealth and public influence are met in the same spirit, and the same large hearted enthusiasm which prevails among western men. Private collectors in the various departments are to be encouraged, for there are many collections which would at once go to such a museum in the interior, and there would be the same rapid growth in this museum that has marked the growth of the museums at Washington and Cambridge. It may be that the eastern institutions will be called upon to furnish officers and custodians, but western men, no matter what their position is, whether collectors or scholars, can not be ignored or stultified. The National museum and the Smithsonian Institution have set an example in this respect. There has been all along the utmost candor and hearty appreciation of the work which private explorers and collectors have done, and the reports have been full of the accounts of the discoveries which have been made by such personages. This museum can be made the most popular institution of the interior, and we predict for it immediate success and a most rapid and wonderful growth.

MRS. MARTHA J. LAMB.*

Mrs. Martha J. Lamb, late editor of the *Magazine of American History*, was born in Plainfield, Mass. She was of a long-lived New England ancestry. She was an ardent lover of books. She wrote many stories and books for children, about one hundred magazine articles, a book on "Historic Homes in America," "Wall Street in History," "History of the City of New York." Her best work was that of editing the periodical, the *Magazine of American History*†. This she at once raised to the highest rank, and it in turn has given her an honorable position in the world of letters. Mrs. Lamb was for eight years a resident of Chicago, where she did much toward the founding of homes for the friendless and orphan asylums. She was one of the committee of ladies who so generously and elegantly entertained the American Association during its session in 1888 in New York. She was an excellent Christian woman, and had a wonderful charm of manner as well of style of writing. The world of letters met with a severe loss when she so suddenly passed away.



BIBLIOGRAPHIC NOTES.

BY ALBERT S. GATSCHET, WASHINGTON, D. C.

KWAKIUTL. A group of dialects, phonetically queer and unwieldy, is spoken on the coast of British Columbia, from Cape Mudge to Douglas and Gardner channels. This interesting group is called the Kwakiutl from the term for "Indian," by which the people call themselves, and forms a branch of the Wakashan stock, better known as Aht or Nootka, of Vancouver Island. The affinity of Kwakiutl with Wakashan has been but recently discovered by *Dr. Franz Boas*, who is now the foremost authority on the Indian population of British Columbia and the western Selish. He states, also, that linguistic affinity between Kwakiutl and the Selish is not altogether out of the question. The great difficulty of studying all these northwestern dialects lies in the recording of their words by letters and graphic signs, for even the ablest investigators often differ in their notation of the same vocables. Boas, in his *Vocabulary of the Kwakiutl Language*, published in the Proceedings of the American Philosophical Society of Philadelphia, 1892 (Nov. 18, pp. 34-82, arranged in two columns), has followed the alphabet of the Bureau of Ethnology. During four years he made collections of seven Kwakiutl dialects, and the results are presented here, the English word standing first. The list contains about one thousand vocables. The necessary complement to this vocabulary is contained in a grammatic sketch of the same language, which Dr. Boas published in 1890.

TO FOLLOE DR. FRANZ BOAS' departure for Chicago, where he is superintending the ethnologic exhibit at the World's Fair or Columbian Exposition,

*Died January 2, 1892, aged 81.

†It has since fallen into the hands of publishers who are of entirely different reputations and therefore to be seen what they will make of it.

he sent to the "Globe" of Braunschweig a series of interesting *creation* and *other myths* of the Coast Chinook and Selish Indians of Washington and Oregon. These important contributions to northwestern folklore were obtained from the very last remnants of the respective tribes, some of whom possess only one or two old persons able to recall the weird mythology of their ancestors. The tribes seen by Boas are the Puyallup and cognate tribes on Puget Sound, the Chihalis at Grey's Harbor (both Selish); the Chinook of Shoalwater Bay, the Katlamat and Clatsop on Lower Columbia river, (all Chinooks); finally, the Tillamook tribe, dwelling on the south side of the bar of Columbia river, and speaking a desperately rough Selish dialect. Among the Selish, the Creator of men and all things is called *Qoné*, or *Qonéqone*, and is represented as traveling continually. He is known under another name among the Tillamook—*Asaiyahatl*—but here this migration myth or legend is intermingled with additions obtained from the south. A flood myth obtained from the Katlamat shows similarity with that of the Pentlatch (British Columbia), and the flood is sent as a punishment. The northern myth referring to the theft of the sun was found also among the Chihalis, and the ascent of men to the sun or sky is rather general among the Indians of Washington.

THE KOOTENAY ethnography and grammar by Prof. Arthur F. Chamberlain, of Worcester College, Massachusetts, is embodied in the eighth report of the committee, Section H, of the British Association for the Advancement of Science, Edinburgh meeting, 1892, dealing with the northwestern tribes of Canada. In this octavo publication it runs from page 5 to page 71. Mr. Chamberlain obtained his data during the summer of 1891 in south-eastern British Columbia, where the northern portion of the Kútene or Kitonaqa people live, the other belonging to the United States (Idaho, Montana, Lake Pend d'Oreilles). There are about one thousand of them living, partly on the Upper, partly on the Lower Kootenay River. Many of the manufactured articles of the Kootenay Indians are pictorially reproduced and carefully described, as cradles, bows and arrows, fish-spears, canoes, root-baskets, moccasins, gloves, knife-sheaths, whips, necklaces and pipes. Follows their mythology, full of quaint and miraculous fabled beings; their sign-language, physical characteristics, etc. Their language is distinct from any of the surrounding tribes, thus forming a stock by itself. Therefore a considerable part of the report (pp. 45-70) is devoted to this subject and to the differences observed between the two main dialects of Kootenay.

THE CARRIER OR TACULLY INDIANS are a people inhabiting the headwaters of Frazer River, British Columbia, and belong to the Athapaskan or Tinné family of natives. Their seats are surrounded by those of other Athapaskans, like the Chilko'tin, the Tsékenne, the Beavers, also by Selish tribes, and on the east by the Crees. Their name originated in the fact that Tacully widows *carried* part of the bones of their deceased husbands upon their bodies. Succession is in the female line, and when among the notables or well-to-do class an individual dies, his successor is not his son, but his uncle or nephew from his sister's side. The kinship resulting from fellow-clanship was reputed to be so strict that it precluded the possibility of co-clansmen intermarrying. The latest investigator of the Carrier customs, Rev. Father A. G. Morice, has sketched their manners, customs

and beliefs in a lively and original style in his "Carrier Sociology and Mythology," in *Transactions Royal Society of Canada, Section I*, 1892, 1904, pp. 1-127, and illustrated the whole with an instructive ethnographical map. From the same author, who is a Catholic missionary at the Stuart Lake Mission, we possess the "Small Catechism for the Use of Carrier Children," text and French translation with notes, followed by the "Prayers of Morning and Evening," with French translation, 1906, 1897, pp. 144.

SELECTIONS OF MEXICAN PHOTOGRAPHS. A collection of sixteen Mexican photographic manuscript sheets were, in 1876, presented by Alexander von Humboldt to the Royal Library in Berlin. They are painted on agave paper and have been recently published in heliotypes, Dr. Edward Seier having composed a commentary for their explanation. It is surmised that these photographic sheets once formed a part of Boturini's collection. Dr. Seier's commentary, *Die Mexikanische Bildhandschriften Alexander von Humboldts* (Berlin, 1897, Lex. 8vo., pp. 135, illustrated, is a scholarly inquiry into all subjects found represented on the agave sheets. Some of them were of easy interpretation, others could be explained only through facts which have come to notice during the latest years of Mexican research.

LANGUAGE OF COSTA RICA. The investigation of the languages of Costa Rica is of a later date than that of the other Central American states, and before Dr. W. M. Gabb's treatise (1875) no scientific study of these dialects, all of which, Guatuso included, belong to one stock, was possible. The Bishop of Costa Rica, Dr. B. A. Thiel, brought forward more material on eight dialects in a government publication of 1882, and now H. Pittier de Fubrega and an associate have selected one single dialect, that of the Terraba or Tribi, and sketched its grammatic elements, adding an ample vocabulary, in another government publication, entitled, *Ensayo Lexicográfico sobre la lengua de Terraba. Por H. Pittier y C. Gagini*. San José de Costa Rica, 1892. 8vo., pp. 86. The two authors are introduced to the public by some appropriate remarks of Bishop Thiel. The grammatic notices by C. Gagini fill about twenty pages, and the rest of the volume is taken up by an array of words, phrases and sentences, not alphabetically arranged, but disposed after subject matters, as animals, plants, etc. To give an idea of continuous Terraba texts, two family letters are appended, showing interlinear translations of each word. Separate chapters explain the position of Terraba to its sister dialects, and in one of them we find the remark that Terraba is neither sonorous nor euphonic, but replete with nasal and guttural sounds. This, of course, is not to be construed as a defect of the language, for as regards the English, we may pertinently make similar observations.

"VENEZUELA." A small but handsome volume descriptive of that South American confederacy was issued in February, 1892, by the "Bureau of American Republics," Washington, D. C., and forms No. 34 of that series. It is nicely illustrated with portraits, landscapes, town views, maps, its contents being mainly historical and statistical. Each state of the Venezuelan union forms a section by itself, and the descriptions of the localities in them is as good as can be desired. There is no special chapter on Indians, but the appendices contain useful documents, as (1) the Act of Independence, (2) the constitution, (3) mining law, (4) immigration law, (5), commercial directory

(6) import duties. The volumes of this series may be obtained free of cost by such people as are interested in the territories specified.

THE GUARANI LANGUAGE is one of the few American tongues which has been studied and written down nearly two hundred years ago by the padres of the Roman Catholic church, and in fact is better known to us in its ancient historic shape than in the modern form as spoken at present. Dr. Christian Frederic Seybold, of Tübingen, Würtemberg, had the opportunity of collecting and preserving the Guarani materials of Father *Paulus Restivus*, while engaged in the service of Peter II., the emperor of Brazil. What Seybold has just published at the expense of Dom Pedro and his heirs is a "Lexicon Hispano-Guaranicum," a "Grammatica Linguae Guarani Hispanice," and a "Brevis Linguae Guarani Grammatica," all printed in 12mo. at Stuttgart by Wilhelm Kohlhammer, from 1890 to 1892. The lexicon has the Spanish words standing first and was compiled by the Jesuit Restivus in 1722 at Santa Maria Maggiore, in Paraguay, after the originals of Antonius Ruiz de Montoya; the two grammatical sketches were composed by him in 1718 and 1724, after the originals of the same Montoya and of Simon Bandini, who worked among the Indians of the same province of Paraguay.

DR. ERNST KRAUSE, well known under the *nom de plume* Carus Sterne, has taken another stride into the mythological areas of northern Europe and of the Aryan nations in his "Trojaburgen Nordeuropas and their connections with the Aryan Legends of the City of Troy." Two years ago he composed "Tuisko-Land" to trace the gradual emigration and expansion of Aryan races from a north home, by their customs, myths and religions, to other lands; in the present book (with its long-winded title), his endeavor is to show that the heroines known to us as Helena, Ariadne, Brunhild, Freja and Syrith are nothing but symbolizations of the sun-goddess held as a captive by the demon of winter and incarcerated in a wintry labyrinth, then liberated by the thunder-god, who returns in spring and releases her from the bonds in which the icy season has detained her so cruelly. When this myth is followed up through the various nations of Asia and Europe, it is curious to notice that her captor, or the demon of winter, is called Druh, Druja, Drogha, Trojan, Troja, and that the forts occupied by him are known as walls of Troy, Troytown, Caer Droia. Thus the myth of the sun's liberation in spring is common to many nations, but appears to have had a northern origin, and a feast is celebrated on that account by the people. (Title: Die Trojaburgen Nordeuropas, etc., 27 illustrations in text; Glogau: Carl Flemming, 1893, octavo, pp. 32 and 300.

"CZECHIAN BEADS from the Abode of Gods" is a recent contribution to Semitic and anti-Semitic polemics, which, by its wit and quaintness of style, can hardly be surpassed or even equalled. The author is the Slavic ethnologist Friedrich S. Krauss, also known as a contributor to American folklore magazines. The spirited and lively style perceptible in his treatment of the myths, customs and legends of the southern Slavs and neighboring nations, the profundity and novelty of his views, the large number of productions flowing from his prolific pen, first excited surprise, if not admiration, throughout Europe. But the conflict of the races is raging nowhere with more intensity than in Austria, and when it became known that Krauss

was a Hungarian Jew, many of his Christian admirers veered around, and through their anti-Semitic feelings ranged themselves among the literary or scientific enemies of the meritorious Hebrew mythographer. The above book is written in self-defense against all the attacks levelled at him, and in many points his antagonists are crushed victoriously. His arguments are not only critical and persuasive, but also satirical, highly exhilarating, and, by a sort of cynical admixture, some are daringly provoking. Considerable knowledge of the history of folkloric science is necessary to understand all what he says against Dr. Gregor Krek, professor of Slavic literature in Gratz, against Prof. Max Koch and Dr. Eduard Veckenstedt, his chief antagonist and bitter enemy. A large number of other literary characters are also made to feel the acumen of his wit. To Veckenstedt is imputed the *invention* of all the divine characters in the "Myths and Legends of the Zamaïtes" (the people of Samogitia), 1883, of which he is the author, and of the stories in which they figure. Many German scientists of repute took sides against Veckenstedt in this controversy. Many of the half-comical and half-serious charges launched by our Israelitic champion against the anti-Semitic authors and tendencies in Austria can be fully understood only by people conversant with the folklore history of those distant countries; but nevertheless our American readers will feel hugely satisfied in chuckling over so much prurient wit as is offered in Krauss' unattainable pages—for instance, the ornamentally printed preface and the side-splitting invectives brought forward on pages 32, 39-41, and 92. The title of the book is as follows: "Friedrich S. Krauss, Böhmsche Korallen aus der Götterwelt. Folkloristische Börseberichte vom Götter-und Mythenmärkte." Wien: Rubinstein, 1893. Pp. 147, octavo.

BLOOD SUPERSTITION.—Some recent occurrences in Germany have prompted Hermann L. Strack, theological professor in Berlin, to investigate more specially the Jewish blood superstition of recent times. This led him to extend his researches on the same subject over all the historic documents accessible and all the nations of the old world. His collectanea and polemic articles have just been published in a fourth edition at Munich, 1892 (Beck, publisher), under the title, "Blutaberglaube in der Menschheit, Blutmorde und Blutritus," and to the students of perversity of men and curiosity of crime yields very interesting reading.

SCHURTZ'S ETHNOGRAPHIC MANUAL.—This little German volume of 370 sedecimo pages has attracted considerable attention on account of its conciseness and practical arrangement, as well as for being a short cyclopedia containing all the most important results of ethnographic research of recent years. The author, Dr. Heinrich Schurtz, is lecturer at the university of Leipzig, and has distinguished himself by publishing elaborate monographs on the manufacture of bows, throwing knives, etc. Sixty-seven pictures made from photographs illustrate the text of the book, the title of which is "Katechismus der Völkerkunde," Leipzig, 1893. The general or ethnologic part of the work is made distinct from the descriptive or ethnographic department, and the alphabetic index, one of the most complete we ever saw, adds largely to the usefulness of the manual. The natives of Asia are more minutely described than those of America, especially North America, and probably the most brilliant and elaborate portion of Schurtz's book is the ethnography of the recently explored African nations of the Bantu family.

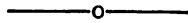
The reproductions of photographs often teach more than whole paragraphs of text. Cleanliness in dress and body increases with the proximity to the sea and the presence of many water springs. The diversity of means of exchange is nowhere larger than in Africa, where salt, cowries, hooks, spear heads and cotton are used for this purpose. Civilized nations use gold and silver, because these metals once formed the least perishable and most general objects of attire.

GEOGRAPHIC NAMES OF ANGOLA.—The African ethnologist and traveler, Heli Chatelain, now a resident of New York City, has extended his linguistic studies over the Bantu dialects as spoken near Loanda, the seaport of the territory of Angola, and published a sketch of the local names of the districts, with etymologies (Geographic Society of New York, 1893, pp. 9). The topographic names of these parts are almost invariably misspelled on the maps and by travelers; the author therefore attempts a new orthography of these, based on the pronunciation of the natives, and differing from the Portuguese mode of writing them. The map appended to his interesting sketch contains the result of his studies, and we find it announced also in No. 147 of the United States Consular Report. The country has never been surveyed. The names of native towns are mostly taken from the titles given to their respective chiefs, so that they do not change when a new chief succeeds another. Loanda means *lowland*, or *down below*; Mutolo, *sheltering forest*; Jipambu, *road-crossing*; Masanganu, *confluence*; Ngola (now Angola), *lord*; Mbanza, *chief's residence or court*; Mbando, *breadfruit tree*.

THE PROCEEDINGS of the Numismatic and Antiquarian Society of Philadelphia for 1890-91 form a good-sized octavo volume of 129 pages, with contents which, for the most part, are of general interest. Among the more important articles may be mentioned, "Japanese Swords," by Benj. Smith Lyman, illustrated by wood-cuts. Mr. Stewart Culin, the secretary of the society, exhibited specimens of these swords before the audience on April 3. All the technical English terms referring to swords are given in the Japanese language also in "The Japanese Method of Making Steel and Iron." The longest article was read by Mrs. Cornelius Stevenson, honorary curator of the Egyptian Department of the University of Pennsylvania Museum, and referred to "Certain Symbols used in the Decoration of Some Potsherds from Daphnæ and Naukratis, now in the Museum of the University of Pennsylvania." The numerous illustrations prove that the samples of pottery found in the two ancient cities are of no mean artistic merit.

AVINASH CHANDRA KAVIRATNA, a learned Hindoo residing in Calcutta, is publishing an English translation of the *Charaka Samhita* at the rate of twelve fascicules every year, in royal octavo. The cost of the whole work will be about \$15 to American purchasers, to be remitted to the publisher, Kaviratna, at 200 Cornwallis street, Calcutta. This medical work was composed in the sixth century before Christ by an author who is justly called the Galen of India. In the fifth number, which is before us, the lesson on the three aspirations has been completed. The observations on the excess or absence or injudicious correlation of objects with the senses and mind display great wisdom. The chapter on oils elaborately describes the different kinds of medicinal oils, the diseases in which they should be prescribed

and the manner of their use. Like all the most ancient medical treatises, this work is very instructive for the history of philosophical ideas and systems, medical theories and ethnographic facts. It rests largely on empirical knowledge and is by no means wanting in common sense, as will be seen from the following paragraph (p. 129): "Physicians are of three kinds; hypocrites or quacks dressed as physicians form one class; physicians by common report form the second class, and physicians that really possess the accomplishments which such men should possess form the third class."



BOOK REVIEWS.

The Industrial Arts of the Anglo-Saxons. By the Baron J. DeBaye. Translated by T. B. Harbottle. Published in London by Swan, Sonnenschein & Co. McMillan & Co., New York, 1893; seventeen plates and thirty-one cuts.

The Jute-Saxons and Angles were the tribes which invaded Great Britain. A period of development in Oriental countries had prepared them for their migrations. They occupied several countries, Scandinavia and Northern Germany, before they reached Great Britain. The perseverance of English archaeologists has enabled them to distinguish the productions of these tribes. This book treats of the Anglo-Saxon arms, fibulæ, cloisonne jewelry, girdle hangers, pins and combs, buckles, buckets, glass, vases, pottery and graves of the Anglo-Saxons. Of the plates seven are devoted to fibulæ, the radiated, bird-shaped, cruciform, and square-headed, saucer-shaped, ring-shaped, circular. The fibulæ show the symbolism of the Anglo-Saxons, but unfortunately the writer does not touch upon the development of symbolism, or even upon its transmission, though he speaks of the crystal balls as amulets and blood stones. Anglo-Saxon graves are described in a manner so that we may distinguish between the Pagan customs of cremation and the Christian customs of burial. The custom of erecting barrows called burghs and low hills as well as mounds and tumuli survived late into history. The poem of Beo-wulf contains a description of the ceremonies of erecting a barrow. This poem gives much information of the customs of the Anglo-Saxons while they were still worshippers of Odin. The Anglo-Saxons chose as the site of their cemeteries some elevated spot. In the most ancient burials the body was fully dressed and placed in the grave, the sides of which were lined with huge stones. After the conversion of the barbarians there was a tendency toward the destruction of temples and tombs which perpetuated the Pagan traditions. Charlemagne forbade all Pagan ceremonies at interments. The book is splendidly illustrated, printed on thick paper, has a quarto form, and is an elegant specimen of the printer's art.

Leif's House in Vineland. By Eben Norton Horsford.

Graves of the Northmen. By Cornelia Horsford. Published by Damrell & Upham. Boston, 1893.

The perseverance with which Prof. Horsford followed up his studies about the Norse discoveries in America is worthy of all praise. He pursued the best course that was possible, for he consulted the authorities and examined the maps, and then with great carefulness sought to identify the localities by a study of the topography. He left a brief manuscript which

will probably be the most satisfactory of anything he has written, to the technical archaeologists, for it contains a description of what he found when he dug beneath the soil. This brief manuscript has been published by his daughter, Miss Cornelia Horsford, with a sketch of Leif's House, with the stones beside the doorway and the paved hearth, four feet across, and one foot below the surface. The foundation walls and place where arrow-heads were found, three feet down. Miss Horsford has, at the request of her father, followed up the subject, and has superintended excavations on the spot which her father declared was the site of Thorfinn's house. Thorfinn came with companions in three ships, 160 men and live stock, intending to found a colony at Vineland, a few years after Leif Erricson. The explorations resulted in the discovery of foundation stones at five different points, enabling the surveyor, Mr. George Davis, to lay out a plan of the foundations of the house, which is given in the full page sketch, and to identify two fireplaces with the stones showing the action of heat, with a few clam shells and oyster shells near by. A small kitchen-midden was discovered. She also superintended excavations at Bemis Point. She also found, two or three feet below the surface of the ground, close to the long wall of Thorfinn's house, an arrow-head, black opaque and vitreous; its luster was resplendent, its fracture conchoidal—it was obsidian. There is one suggestion which Miss Horsford has made in her interesting monogram on the Graves of the Northmen. It is that the stone graves of the Shawnees may, some of them, have been erected by the Norsemen, or at least the style of making such graves may have been learned from them.

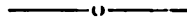
It is to be regretted that Mr. Horsford, who had such a taste for archaeological studies, and who had ample means for carrying them out, has passed away before they were completed, but the mantle has fallen to his daughter, and it is to be hoped that she may become more fully enlisted and unite with many other ladies of wealth and culture in carrying out investigations into the pre-Columbian antiquities of this country. Notwithstanding the skepticism which has prevailed about the Norsemen, there is need of just such investigations as those which Prof. Horsford was able to give, and we welcome any one who will continue them.

The Ainu of Japan. By the Rev. John Batchelder. Published by Fleming H. Revell Co. New York and Chicago.

While there has been a great deal published upon the subject of the Ainus by the Smithsonian Institution, yet a book on the subject, written in a popular form, is acceptable. The Ainus are a very ancient people and may be called the aborigines of Japan. They are different from any other people, though they resemble the Laps in some respects.

In their religion they are Pagans. They believe in a struggle between two principles, good and bad; so they have two gods, who preside over the sea and over rivers. They recognize sex, male and female, in the gods. Every Ainu hut has its sacred east end; it may be called a temple. They say that the Island of Yezo was made by two gods, male and female, who were deputies of the creator. They have a legend of a hobgoblin, like a Cyclops, with one eye, who was a cannibal. There is a goddess of fire who reigns over the extinct volcano and presides over hearths. The records of Japan go back to 720 A. D., but there are inscriptions on rocks which are supposed to be older. The stone axes, flint knives, war clubs, swords are

described and cuts of them given in this book, also the bows and arrows and the pottery, pestle and mortar, spoons, brooms, and the peculiar shaved sticks which are the only idols, and appropriately so, as these represent the shaggy hair which is characteristic enough to be worshipped. The book is nicely printed and illustrated.



BOOK NOTICES.

The Bulletin of the American Geographical Society, for June 30, 1893, has an account of antiquities of Honduras, which is of some interest. An exploration made by H. W. Perry resulted in the discovery of a number of granite rocks, bearing on their surface carvings of strange figures, one of them a beautifully cut scroll of curious design, another of a human face, showing a Chinese physiognomy; also the ruins of a city and a cave wherein are the stone hammers, bowls and metates. This on the Plantain river. Another article describes the Mosquito coast as it now exists. The language of the Mosquito Indians has been reduced to grammar by Alexander Henderson, from vocabularies furnished by Lucien Adam. The four Gospels have been translated into the language by the Rev. G. Sieborger. "The Wild Peoples of Farther India," "Geographical Names of Angola," "West Africa" form the topics of other articles. The great Italian collection of documents relating to Columbus, now in course of publication, of which there will be fourteen volumes, is noticed. The Costa Rica collection, at the Madrid exhibition, is briefly described.

The Report of the Smithsonian Institution, for 1891, contains a very interesting article, by Mr. George H. Behmer, on "Prehistoric Naval Architecture of the North of Europe." It contains descriptions of canoes, boats and vessels, excavated on the coast of northern Europe. The vessel built after the model of one of these buried ships is now moored at Chicago, near the great war vessel, and exhibits one of the links in the chain of succession. The war vessel, the whaler, the Santa Maria and the fleet of Columbus, the Norse vessels, are all historic; back of these are several links. The Haida canoes might be taken as a recent type. Beside these we have the vessel excavated from the King's mound, in 1880, called the Goksted ship; more ancient than these are the boat-shaped graves in Russia, composed of stones laid to imitate the sides, prow, stern and benches of a ship; still older are the canoes found in Scotland, at Loch Arthur and other localities. Mr. Behmer's opinion is that the Phœnicians taught the Scandinavians the art of ship building, and that they borrowed from the Egyptians, though the Egyptians at the time of the Roman invasion employed dugouts capable of holding thirty or forty persons. The custom of burying the bodies of the dead in the vessel which had been their home during life was common in Scotland as well as on the northwest coast. The mound building connected therefore with history, by this means the models of vessels have been preserved. "The Ancient Burials of Japan" forms the subject of another article by Romyn Hitchcock. It appears that dolmens are common in Japan. These dolmens are buried under mounds; the earth having been washed away leaves the rocks exposed. Simple mounds without chambers were used before chambers were thought of; mounds with an underground

tunnel leading from the outside to the center of the mound, where was the chamber containing the body, were the next in order; the last was the chambered mound with the sealed coffin; after that the stone pagodas. The Coreans used cylinders made from pottery for their burying places. There are four figures of stone idols from Yamato, which are the oldest stone images in Japan. These remind us of the figures found in the Easter Islands, described in a previous report. These figures may form a connecting link between these races, but little is known, and so they can be taken only as hints.

The Journal of the Polynesian Society (Vol. II, No. 1) contains a report of the council. There are 155 members, 105 in New Zealand, 23 in the Sandwich Islands, 3 in England, 1 in North America. There are many persons in this country interested in the antiquities of New Zealand, who should be enlisted with the workers of this society, as the comparison of the specimens of art and architecture may lead to the solution of some of our problems.

The Journal of American Folklore, April and June, 1893, contains an account of "Jack Wilson, the Payute Messiah," by A. S. Gatschet; also the "Medicine Arrows of the Oregon Indians," and a very interesting and valuable article on "Pawnee Mythology," by George B. Grinnell. The Folklore Society is extending its influence and is proving especially useful in collecting the myths of the aboriginal races, a work which cannot be pushed too rapidly.

The American Journal of Philology, which was established about the same time as THE AMERICAN ANTIQUARIAN, keeps on in the even tenor of its way. It is very scholarly, and has the same mission for the classical and oriental scholars that THE ANTIQUARIAN has endeavored to accomplish for the students of American archæology. The scholars in this department are not so numerous, but the number of students is increasing, and scholars grow out of students.

Scribner's Magazine for January, 1893, contains an exceeding valuable article on "The Wanderings of Cochiti," by Charles F. Lummis. A couple of stone effigies of panthers or mountain lions are depicted in this article. They are life size and carved in high relief in the rock with obsidian knives. A. F. Bandelier discovered these, as well as the images on the Potrero de las Vacas, the Cuera Pintada, the Potrero de las Idolos. There is a full page cut of the dance of the Ayosh-tyñ-cotz, with all its barbarous paraphernalia. In this cut we recognize the symbolic masks which were so common in prehistoric times. The following is a quotation from the article: "A few hundred yards up the dim trail which leads from the ruined town of the Potrero de las Vacas toward the near peaks, one comes suddenly upon a strange aboriginal Stonehenge. Among the tattered piñons and sprawling cedars is a lonely enclosure, fenced with great slabs of tufa set up edgewise. This enclosure, which is about thirty feet in diameter, has somewhat the shape of a tadpole; for at the southeast end its oval tapers into an alley, five feet wide and twenty long, similarly walled. In the midst of this unique roofless temple of the Southwestern Druids are the weathered images of two cougars, carved in high relief from the bed-rock of the mesa. The figures are life size; and even the erosion of so many centuries has not gnawed them out of recognition. The heads are nearly indistinguishable, and the fore shoulders have suffered; but the rest of the sculpture, to the very tips of the outstretched tails, is perfectly clear. The very attitude of the American lion is preserved—the flat, stealthy, compact crouch that precedes the mortal leap."



FRANCIS PARKMAN.

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EARLY TRADERS AND TRADE-ROUTES IN
ONTARIO AND THE WEST. 1760-83.*

BY CAPT. ERNEST CRUIKSHANK

The reason why I have included the "West" within the scope of this paper is, that from the conquest of Canada until about the year 1816, the whole region now forming the States of Iowa, Wisconsin and Minnesota, and for a considerable portion of that time, much of the present States of Ohio, Michigan, Indiana and Illinois still remained within the "sphere of British influence," long after it had actually ceased to be British territory. During the period named, practically the entire trade of this vast territory was conducted by English, Scotch and Canadian merchants, having Montreal as their base of supplies. From 1763 to 1783, all these northwestern territories, together with Ontario, were administered as a part of the "Government" or Province of Quebec.

These traders acted an important part during the American Revolution and the war of 1812, and it was largely due to their active loyalty and influence among the Indians that the western provinces were then preserved from becoming a part of the United States. British garrisons continued to occupy Detroit and Mackinac until 1796, and for twenty years afterwards the isolated settlers at Milwaukee, Green Bay and Prairie du Chien still professed themselves British subjects, and proudly kept the Union Jack flying over their trading stations. As late as 1818, I find a trader described, in a legal instrument, as "Amable Grignon, of the parish of Green Bay, Upper Canada."

The Indian tribes of this region continued to be, more or less, under the control and superintendence of the Indian department of Upper Canada until about fifty years ago. Many of them

*Read February 27, 1892, before the American Association, Section H.

made annual journeys from the banks of the Mississippi to Sandwich, Ontario, to receive their presents. When the celebrated Black Hawk finally surrendered he was found to have carefully treasured a British flag and a medal of George the Third, given to his tribe half a century before.

The conquest of Canada at once transferred the trade of the province and the vast interior country to the north and west from the hands of the French to those of English traders. Successive governors of Canada had actively exerted themselves to confine the English colonists to a comparatively narrow strip of land along the Atlantic seaboard, while they jealously retained the commerce of the great country behind almost exclusively in their own hands. In this policy they had been so far successful that in 1756 they held a chain of forts extending from Montreal to the foot of the Rockies; the posts of Presqu' Isle, Le Boeuf, Venango, Du Quesne, commanded the navigation of the Ohio. They had stations on the Chicago, St. Joseph's, Wisconsin, Wabash and Illinois rivers, which quite monopolized the trade of the surrounding country. Thriving settlements of long-standing at Kaskaskia, St. Louis, New Orleans and elsewhere on the Mississippi gave them full control of that mighty river. They had establishments at Prairie du Chien and Lake Pepin, in Wisconsin. Pascoya, on the upper Saskatchewan, was 900 leagues beyond Mackinac, and the journey usually occupied three months. Their most western post was still 100 leagues beyond Pascoya. La Verendrye, Le Gardeur de St. Pierre, De Niverville and other bold adventurers had explored the adjacent country. Determined efforts were made to wrest the trade of the northern Indians from the Hudson's Bay Company. The northern shore of Lake Superior and the rivers falling into the lake from that direction were thoroughly explored. An expedition fitted out at Mackinac ascended the Michipicoton or Pigeon river as far as they could go. Hauling their boats overland to the head of Moose river, they dropped swiftly down that stream and took the principal British factories on James Bay by surprise. They returned by the same route with their booty, and when the French flag was finally lowered at Mackinac, two small cannons were found there, which had been taken in this daring raid.

It is still possible to ascertain pretty closely the extent and value of their trade as it existed in 1754, just before the final struggle began. The Indian country had been mapped out into districts, and traders were strictly prohibited from passing the limits of the districts for which they had obtained licenses. They were also forbidden to carry spirits, except for their own use, or to sell any to the Indians. Each trader was required to report at the post of his district before going out to trade, and again on returning. The commandant of this post heard the complaints of the Indians, and if they appeared well founded,

promptly redressed their grievances. As Sir Guy Carleton remarked, "They did not depend on the number of troops, but on the discretion of their officers, who learned the language of the natives, acted as magistrates, compelled the traders to deal equitably, and distributed the king's presents; by this conduct they avoided giving jealousy, and gained the affections of an ignorant, credulous and brave people, whose ruling passions are independence, gratitude, revenge, with an unconquerable love of strong drink which must prove de-structive to them and the fur-trade if permitted to be sent among them; thus managing them by address where force could not avail, they reconciled them to their troops and by degrees strengthened their posts at Niagara, Detroit and Machilimackinac."

Ninety canoes were annually permitted to go to the southern posts. These were Niagara, Toronto, Frontenac, La Presentation, Detroit, Ouias, Miamis, Machilimackinac, La Baye, St. Joseph, Illinois and their several dependencies. Twenty-eight canoes were despatched to the northern posts, which were Temiscamingue, Chagouamigon, Nipigon, Gamanistigouia, Michipicoton, Mer du Ouest, Riviere des Kikapoux, Lake Huron and Belle Riviere.

POST.	GARRISON.		CANOES.
	OFFICERS.	MEN.	
Niagara.....	5	30	10
Toronto.....	1	7	5
Frontenac.....	3	17	2
Detroit and dependencies.....	4	28	17
Michilimackinac and dependencies.....	2	15	25
La Baye and dependencies.....	1	5	13
St. Joseph.....	1	.....	5
Illinois.....	.....	.....	8
Temiscamingue.....	.....	.....	.....
Chagouamigon.....	1	.....	4
Nipigon.....	1	.....	5
Gaministigouia, Michipicoton.....	1	.....	9
Mer du Ouest.....	1	6	9
Riviere des Kikapoux.....	.....	.....	2
Lake Huron.....	.....	.....	2
Belle Riviere.....	.....	.....	2

The average value of each canoe was estimated at 7,000 *livres*. Toronto and Frontenac were called the King's Posts.* The trade there was conducted for the benefit of the crown and the furs so obtained were sold by public auction in Montreal. Toronto in particular was founded with the express object of drawing trade away from the English post of Chouguen or Oswego. About two-thirds of the entire Indian trade, it will be

*In addition to those posts Kalui's map indicate the out-stations of Gaudalakia-gon, apparently on the present site of Whitby and Redcharle, between Niagara and the mouth of the Genesee.

noticed, was carried on with the tribes of the far west. For many years the determined hostility of the Six Nations had hindered the French from the free navigation of the great lakes, but they then had several small ships of war on each of the lower lakes and an unarmed schooner upon Lake Superior. All of these vessels were frequently employed in transporting goods between the principal posts.

Ample justice has been done to the great skill manifested by so many Frenchmen in the management of primitive people. "No other Europeans," says Merivale, "have ever displayed equal talents for conciliating savages, or, it must be added, for approximating to their usages and modes of life." But truly remarkable as was the ascendancy acquired by Gautier, Langlade, La Corne and others, it is doubtful whether they ever possessed as great and permanent an influence among the Indians as Johnson, Butler, McKee, Elliott, or Dickson.

It is probable that a few of the water-ways, *portages* and paths used by the Indians remained unknown to the hardy and adventurous *Coueurs des Bois*. But their knowledge was jealously kept secret and much of it perished with them. Consequently, after the conquest, land and water routes formerly well known to the French had to be re-discovered or at least re-explored by their successors. During the war, too, many of the less important trading-stations had been abandoned or destroyed.

The old and favorite canoe-route from Montreal to Lake Huron by way of the Ottawa, Lake Nipissing and French River, although interrupted by no less than forty-two *portages* and *decharges*, had never fallen into disuse, but four trading-houses upon the Ottawa alone had been recently abandoned and were already crumbling to ruin. One of these was fourteen leagues above the Longue Sault; one three leagues higher at the mouth of Hare River; another at the Isle des Allumettes, the fourth at the Riviere du Moine. A short portage connected a branch of the Ottawa with the Cataragui and Lake Ontario.

Missionary, soldier and trader had traversed in succession the route from the Bay of Quinte, by way of Balsam Lake and Lake Simcoe to the once populous country of the Hurons. The more direct route from Toronto to Lake Simcoe was also frequently used in the latter days of the French occupation.

From Burlington Bay the Indians used a *portage* into the Upper Thames and another from the forks of that river into Lake Erie at Point aux Pins. Three well defined trails led from different points on the Grand River to Lake Ontario, and there was also a *portage* less than five miles in length from that stream into the Chippewa. The carrying-place at Niagara Falls lay on the eastern bank of the river and was about nine miles long. Block-houses guarded the wharves at the landings, the lower being called Petite Marie, the upper, Little Niagara. Windlasses were used for hoisting heavy weights up the heights and

also for assisting vessels to overcome the rapids at Fort Erie. From Lake Erie the French made their way at an early date to Lake Chautauqua, thence down the Venango into the Ohio, but this route was soon abandoned for the shorter and easier one from Presqu' Isle (Erie) to French Creek. Here they made so good a road that heavy cannon were easily hauled over it in the days when they held Fort du Quesne. The forts they had built at Presqu' Isle, Venango and Le Boeuf were taken and destroyed by the Indians during Pontiac's war. They were not rebuilt, the route became disused and the road soon fell out of repair.

There were three other much frequented water-routes from Lake Erie to the Ohio. A *portage* of a single mile connected the headwaters of the Cuyahoga with the Muskingum; another four miles in length united the Sandusky with the Scioto. The carrying-place from the Miami of the Lakes to the Great Miami was nine miles long, and a branch of the former river interlocked with a branch of the Scioto. In the region watered by these rivers the fiercest struggle for trade had been waged, and here those inevitable collisions occurred which precipitated the conquest. About three hundred English traders annually came over the mountains from Pennsylvania and Virginia. They usually ascended the Susquehanna, Juniata, or Potomac to the head of boat navigation and then made their way through the gaps of the hills to the nearest branch of the Ohio. Many of the Indians living in the vicinity were emigrants from the English colonies, who had settled there with the permission of the Six Nations by whom they were treated as allies or "younger brothers." From the first they were inclined to be friendly to the English and regarded the French with suspicion. One English factory was established far up the Muskingum, another at Shawnee, Shawnee-town near the confluence of the Scioto with the Ohio, but their principal mart and place of trade was at Pickawillany-Piqua on the upper waters of the Great Miami. From these posts individual traders, driving pack horses before them, made their way to the different Indian settlements. As early as 1749, DeBievre reported that every village on the Ohio and its tributaries had one or more English traders living in it, and that each of these had men employed in transporting their furs. Raymond, the commandant of the French post on the Miami of the Lakes, at the same time described the feeling of the Indians as decidedly hostile to his countrymen.

The Six Nations claimed the sovereignty over the country of the south side of Lake Erie, nearly as far west as the Sandusky river. They held it solely as a hunting ground, making no attempt at a permanent settlement. They also claimed the lands on either side of the Ohio, from its source to the mouth of the Wabash. The Delawares, reduced to less than 500 warriors, had taken up their residence on the Muskingum, and the Shaw-

nees, another allied tribe, numbering 300 fighting men, were seated on the Scioto. Neither of these tribes raised much grain. They maintained themselves almost entirely by hunting, at which they were very expert. The Wyandots (frequently called Hurons) occupied a very fertile tract of land on the Sandusky river. The number of adult males was variously estimated at from two to six hundred. The villages were composed of regularly framed houses, neatly covered with bark. They were considered the richest and most industrious Indians on the continent. Mr. McKee told Governor Simcoe that when he first became acquainted with these people (about 1750) they would frequently change their dresses eight or ten times in the course of an evening, when holding one of their grand dances, and that each dress was so loaded with ornaments as to be valued at £40 or £50. They bred many horses, black cattle, and hogs, and grew great quantities of grain, not only for their own use, but for the supply of the neighboring tribes that preferred to employ themselves entirely in hunting.

In 1752 Charles de Langlade, at the head of a band of Chippewas, destroyed the English factory at Pickiwillany, and the remaining traders were soon chased from the Ohio Valley. The neighboring Indians then passed for a few years under French influence, but never seem to have become actively hostile to the English. When the war was over, the trading-posts were not re-established, as the Indians could be easily supplied from Pittsburg or Detroit.

This province, as far north as the borders of Lake Michigan, was frequented only by roving bands of Missassaugas, who seldom remained long in one place. At the date of the conquest, their principal village seems to have been near the present site of Toronto.

A remnant of the Hurons, christianized and superintended by a French missionary, were settled opposite the village of Detroit.

The French inhabitants of Detroit already numbered 2,500. The settlement extended seven or eight miles on both sides of the river and was in a flourishing condition. The settlers grew a considerable quantity of grain and bred many cattle, but they devoted their attention chiefly to the fur trade, which was great and lucrative. Tribes of the Ottawa confederacy numbering about 900 warriors had their villages in the immediate vicinity.

From Detroit the favorite route to the Illinois and the Mississippi was by the Miami; of the lakes and its tributary, the Au Glaize, from which there was a portage of twelve miles to the Wabash. The distance to Fort Miamis, on the Au Glaize, was 216 miles. A few French and half-breed families occupied a deserted fort, and the Miami village opposite could turn out 250 fighting men. Thence to Ouia or Ouatanon hard by, a populous Kickapoo village, with the principal town of the Ouia (Weas) directly opposite, was 183 miles of rather difficult navi-

gation. Vincennes, 240 miles further down the Wabash, had long been an important station. A trading-house had been established there in the same year that Penn had founded Philadelphia. The permanent population of the French village did not exceed four hundred persons, but the Indians for a great distance around constantly resorted to this place for their supplies, and trade was brisk. The distance by land across the prairie to the Illinois was estimated at 240 miles.

Much shorter, but less frequented, was the land-route from Detroit to Fort St. Joseph, on the river of the same name, situated close beside a village of 200 Ottawa warriors and another of 150 Pottawatimies. From this place there was a portage of four miles to the Kankakee, a branch of the Illinois. The distance by water to the Mississippi was 541 miles. There was a second portage from the St. Joseph to the Wabash. The Chicago river was connected in a similar manner with another branch of the Illinois. All of these routes were much used by the Mackinac traders.

The French settlements on the Illinois were flourishing and populous. As early as 1750, Pere Vivier had estimated their population at 1100 whites, 300 negro and 60 Indian slaves. At the date of the conquest it was believed to have increased to 2050 whites, and 900 negroes, but many soon afterwards elected to follow the French flag across the Mississippi rather than submit to English rule. In 1765, the geographer, Hutchins, stated that Kaskaskia had a population of 500 whites and 400 or 500 negroes; Prairie du Rocher, 100 whites and 80 negroes; Cahokia, 300 whites and 80 negroes.

The station of Michilimackinac, situated on the western shore of the straits of the same name, was the distributing point for the trade of the farther west and northwest. It had been strongly built on the very boundary line between the territories of the Ottawa and Chippewa Indians, so that when these two nations came to trade, each could encamp on its own lands within a stone's throw of the stockade, which stood so near the water's edge that the waves frequently dashed against the palisades. The Jesuit mission of Saint Ignace and about thirty houses stood within. Twenty miles to westward lay the Ottawa village of L'Arbre Croche, having a population of 1,500 Christian Indians, principally engaged in agriculture. In fact, the traders of the post were wholly dependent upon them for provisions, both for their expeditions into the fur-country to the westward, north and when returning to Montreal.

A number of French families had already taken up their permanent residence on Green Bay, near the mouth of the Fox river, where they cultivated small farms and gained a comfortable living by selling their surplus products to passing traders. The Fox and Wisconsin rivers afforded an easy and tolerably direct passage to the Mississippi.



Toronto to Niagara, where he arrived in time to accompany Bradstreet's avenging army to Detroit, in command of a small party of friendly Indians.

In 1765, a regulation was adopted, prohibiting all white men from trading to westward of Detroit without a license, and Henry's perseverance was rewarded by the monopoly of the trade of Lake Superior. He seems to have had no ready money, but he promptly bought four freighted canoes at twelve months' credit for 10,000 pounds of beaver. This fur was then worth 26 a pound. At Mackinac the value of every commodity was reckoned in pounds of beaver. Manufactured goods of every kind brought fabulous prices. A stroud blanket was valued at ten beaver skins; a trade-musket at twenty; a pound of powder or a two-pound axe at two; a knife or a pound of ball at one. For a shirt Henry had shortly before paid ten pounds of beaver, and fifteen for a pair of leggings. Even when a man went to the garrison-canteen he took with him a marten skin (worth 16) to pay for his drink.

Henry took Cadotte into partnership, and apparently put the trade of Sault Ste. Marie and the north shore into his hands. He next engaged twelve boatmen, at one hundred pounds of beaver each, for the season, and bought for their provisions fifty bushels of Indian corn, for ten pounds of beaver a bushel, and the customary allowance of tallow, at a dollar a pound. Upon arriving at Chagouamigon (or Chequamegon) bay, where the French had formerly a trading post upon an island, he found the Indians destitute and almost naked, and was obliged to advance them at once goods to the value of 3,000 beaver skins. The result of the winter's trade was 150 packs of beaver, weighing a hundred pounds each, and twenty-five packs of otter and marten.

In his second venture, he advanced to each male Indian goods valued at one hundred pounds of beaver, and to each woman, thirty pounds' worth. As a proof of the remarkable honesty of these people, he relates that, although he had advanced to them at this time goods to the value of two thousand beaver skins, not more than thirty skins were unpaid in the spring, and that this loss was due to the death of an Indian, whose family brought in all the furs he possessed and offered to pay for the remainder.

Upon again returning to Mackinac, he made the acquaintance of Mr. Alexander Baxter, who had come from England to examine the deposits of copper ore on Lake Superior, and he threw himself, with his accustomed energy, into this mining project. A company was soon formed, composed of the Duke of Gloucester, Hon. Charles Townshend, Sir Samuel Tuckett, Mr. Baxter, Russian consul in London, and a Mr. Crickshank, in England, and Sir Wm. Johnson and Mr. Alex. Baxter, in America. In 1770, Mr. Baxter returned from England with the necessary

authority to begin operations. Bostwick and Henry were next taken into partnership, probably to make use of their local knowledge and influence. During the winter they built a barge and a sloop of forty tons at Point aux Pins near Sault Ste Marie, and in May, 1771, they sailed with a party of miners for Ontonagan, where they built a house and opened a mine. The miners were left there during the winter and in the following spring a boat was sent to them with a supply of provisions. On the 20th of June it returned with the entire party. The mine had suddenly caved in and they had failed to find silver ore in paying quantities. In August of that year they began working a vein of copper on the north shore, and during the season of 1773 penetrated about thirty feet in the rock. The vein then rapidly diminished in size and was abandoned. This failure, combined with the high price of labor and provisions and the difficulty of obtaining mining supplies, thoroughly disheartened the English shareholders and they declined to proceed.*

During these years Henry had continued to trade with the Indians of Lake Superior, but he soon determined to seek the new and promising field of trade in the Canadian northwest.

A trader, whose name I have not ascertained, had sent several canoes as far as Rainy lake, in 1765. The Indians there, having been without supplies for several years, detained and plundered them. He repeated his attempt the next year with the same result. With astonishing perseverance he fitted out a third expedition in 1767, and was rewarded with success. Leaving part of his goods at Rainy lake to be traded out among the Indians there, he was permitted to proceed with the remainder over beyond Lake Winnipeg. Other traders soon followed in his footsteps. In 1768, the brothers Frobisher formed a partnership with Todd and McGill of Montreal, for the purpose of prosecuting this trade on a large scale. The Indians of Rainy lake were not yet entirely conciliated and plundered their canoes, but before they were informed of this disaster, their supply of goods for the next year were at the Grand Portage, and they were in a manner forced to proceed. Their second venture was successful, and they reached Lake Winnipeg in 1770. The partnership was then enlarged, and, to borrow their own words, "Having men of conduct and abilities to conduct it in the interior country, the Indians were abundantly supplied and at the same time well treated; new posts were discovered as early as the year 1774, which to the French were totally unknown, and had we not been interrupted by new adventurers, the public, in the course of a few years, would have been well acquainted with the value and extent of that country."

*The first stage remarked that "this want of success was not so much owing to the want of ability of their agents as to want of foresight in providing the necessities of the country, such as powder and saltpetre, the want of which, at that immense distance, had so soon returned their scheme at once."—*Letter to Captain Valla, 8th December,*

Cadotte and Henry may probably be classed among these new adventurers. Their first expedition to the northwest of Lake Superior was undertaken in 1775. When crossing Lake Winnipeg they fell in with Peter Pond, Joseph and Thomas Frobisher, and Mr. Paterson, of Montreal, all bound for the mouth of the Saskatchewan. The united fleet then numbered thirty canoes, manned by one hundred and thirty men. At Fort Cumberland they separated, Pond going to Fort Dauphin, Cadotte to Fort des Prairies with four canoes, and the Frobishers and Henry to the Churchill river with ten others. Four different interests were then struggling for the trade of the Saskatchewan valley, but they soon combined to keep up prices. A trade-musket was valued at twenty beaverskins; a stroud blanket at ten; a white blanket at eight; a one pound axe at three; half a pint of powder or ten bullets at one. Their greatest profit, however, was made from the sale of knives, beads, flints, awls, and other small articles. Henry charged his rivals, the factors of the Hudson Bay Company, with practicing many gross impositions upon the natives, such as the sale of prints for charms and sugar and spice as medicines. Trade was remarkably brisk and lucrative. During the winter of 1775-6 from twenty to thirty Indians daily arrived at Henry's station on the Churchill, loaded with the finest quality of furs, and in the following June he purchased 12,000 beaverskins in three days.

Major Robert Rogers, the celebrated partisan, was one of the first English colonists to explore the country around the great lakes, and while in command at Mackinac he appears to have dabbled in the enticing fur-trade. As early as 1765 he published a small book entitled "A Concise Account of North America." Stating his qualifications as an authority on the subject in the preface, he said: "This river (the St. Lawrence) I have traced, and am pretty well acquainted with the country adjacent to it as far up as Lake Superior, and with the country from the Green bay to the Mississippi, and from thence down to the mouth of the Mississippi at the gulf of Mexico. I have also traveled the country adjacent to the Ohio and its principal branches, and that between the Ohio and Lakes Erie and Michigan and the countries of the southern Indians."

Jonathan Carver, a New Englander, wrote an interesting narrative of his travels in the west during the years 1766-8. Furnished by Major Rogers with a letter of credit on some English and Canadian traders who were going to the Mississippi, he left Mackinac on the 3d of September, 1766, and reached LaBaye on the 18th. The fort at that place, as well as the one at St. Joseph's, had been abandoned since Pontiac's war, and was fast falling to ruin. He stayed there two days, but arrived at the Winnebago town on the 25th. Eight days' paddling brought them to the carrying-place leading to the Wisconsin, from whence he gained the Mississippi by easy stages. At

Lake Pepin he noticed the ruins of St. Pierre's deserted station. He ascended the Mississippi to the mouth of the St. Pierre and went up the latter river about two hundred miles. French traders from Louisiana had been among the Indians in this quarter telling them that their French father would soon awake and he was shown belts of wampum conveying this message that they had delivered. After returning to Prairie du Chien for supplies, he again went up the Mississippi to the Chippewa, which he ascended as far as he could go. He then carried his canoe into a stream flowing into Lake Superior, which he named Goddard's river, in honor of a well-known Montreal merchant, James Stanley Goddard, who had rendered him some assistance in the course of his journey.

He next visited the Grand Portage, where he learned that those who went on the northwest trade were obliged to convey their canoes and baggage overland about nine miles to a chain of small lakes, and relates that they were in the habit of resorting to Fort LaReine, on a river flowing into Lake "Winnepeck," to trade with the "Assinipoils." Coasting along the north shore of Lake Superior and Huron, he made his way back to Detroit.

Louis Chevalier, a French Canadian trader, who had acquired great influence among the neighboring tribes, continued to reside at St. Joseph's until removed by force during revolution. His establishment then numbered fifty men, women and children. By turns trusted and suspected, Chevalier appears, on the whole, to have been faithful to his allegiance during the contest. Like many others of his calling, he had taken an Indian wife, and one of his half-breed children, Amable Chevalier, rendered important services during the war of 1812.

A member of the noted Lorimier family had a trading-house for many years near the portage from the Miami of the Lakes, which became a favorite halting place for war parties from Detroit in their raids upon Kentucky. Loraine, LaMotte, Richardville, and many other unlicensed traders were permanent residents of Ouiatenon and Vincennes. As at Detroit, most of the inhabitants at those places subsisted by the fur trade. The furs obtained at Ouiatenon were supposed to be worth £8,000 annually. The exports from Vincennes were estimated at £5,000. Among the English, at least, these settlements had an evil reputation. Croghan, in 1765, terms the inhabitants "an idle, lazy set, a parcel of renegades from Canada, much worse than the Indians." Sir Wm. Johnson, five years later, speaks of them as "that lawless colony on the Wabash, who are daily increasing in numbers, and whilst they particularly hate us as English, are really enemies of all government." Making due allowance for natural prejudice, these estimates of their character seem fully justified by their contemptible conduct during the revolution.

The trade of this region, however, was not undisputed. The

merchants of Detroit complained of being prohibited from going about, thus renewing their hostility, for the Mississippi had come within a few miles of the furs for which they had labored before. At the same time they were to take possession of Kaskaskia, and the houses at that place crammed with merchants in general positions that would prevent the tribes from the effect of diverting trade down the Mississippi. Sometimes had to come from the southward, without legislative restraints. It informs us that "McKenzie, the traders, had lately returned up the great river Mississippi, the daughters of an Indian beaver's fur, deerskin expected."

On the other hand, from personal experience of regulating the trade, complaints "of the want of picture he drew of traders is unpleasant assembled on public on the 14th August the neighborhood intoxicated during afterwards get better for spirituous liquor

and causing as well amongst addressed to him man had said: "lands, and in the they

and the worst of motives

of the governor were systematic. This unfortunate state of affairs and brutal murder of several women and a child, on the north of the worst reputation, named and sent down to Montreal, had to be released for lack

and Pennsylvania swarmed with Dutch counterpart of the reckless sentiment and uncertainty prevailing among them in their defiance of the threatened punishment of their crimes. The occupation of Montreal for years in 1775-6 materially dislocated the adhesion of the western Indians, the crown had the effect of cutting off the south of the lakes, and the posts of the became of more consequence

is nephew, Gautier de Verville, once Northwest, to the relief of Montreal. DeQuindre, LaMotte, LaBute, and Alexander McKee and Matthewience and marked ability, fled from they were at once employed by the Indian department. Both of them influence among all the tribes in and during the remainder of their

de Linctot, Hammelin and Mcparty, but their efforts among the

were issued by the governor to permit those of Indians, to navigate passports, and prohibiting the more than a common row-boat. All be taken into the public service. As much as possible for the loss necessarily sustain from this arbitrariness of these vessels were instructed, transporting their goods free of acknowledgment from the owner for the autumn of 1779, when Niagara

vide P. Campbell's travels.

The complaints made daily by the Indians of the abuses and irregularities of trade are many and grievous, and doubtless will be made use of by them in case of a defection in any quarter. * * * The common traders, or factors, who are generally rapacious, ignorant, and without principle, pretending to their merchants that they cannot make good returns unless they are at liberty to go where and do as they please. * * * They are daily guilty of the most daring impositions. * * * Most of these evils result from the rapid intrusions on Indian lands and the unrestrained irregularities in trade to which I see no period from any steps that are likely to be taken in the colonies."

These complaints referred particularly to the older provinces, where the legislatures declined or neglected to impose regulations, and he congratulated Sir Guy Carleton upon the general absence of these abuses in his government. But unlicensed traders found their way into Canada, and Johnson asserted that some of the French Canadian traders were disloyal and were inciting the Indians to hostilities. Canadian merchants whom Carleton consulted, denied the charge indignantly and instanced the general good conduct of their countrymen during Pontiac's war as a proof of their trustworthiness.

In response to many urgent appeals on the 15th of April, 1768, Lord Hillsborough at length addressed a circular to the governors of all the British provinces in America, in which he said: "The objects which, upon this occasion, will principally demand the attention of the several colonies are to provide by the most effectual laws for preventing any settlements being made beyond the line which shall be agreed upon with the Indians and for the control and punishment of those atrocious frauds and abuses which have been practiced by the traders and have been one principal cause of the disaffection of the savages."

These apparently reasonable and prudent recommendations were either ignored altogether by the local legislatures or resented as an improper attempt to interfere in their local affairs, and five years later his successor, Lord Dartmouth, confessed his utter helplessness to afford a remedy. "As the colonies," he said, "do not seem disposed to concur in any general regulations for Indian trade, I am at a loss to suggest any mode by which this important service can be otherwise provided for than by the interposition of the supreme legislature, the exertion of which would be inadvisable until truth and connection have removed the unhappy prejudices which have so long prevailed in the colonies on this subject." In the eyes of typical American historian, a British minister is always the haughty noble, always stupid, always selfish, always insolent. The colonist to whom his policy proved obnoxious is as inevitably the pure patriot, intelligent, firm, and honest. It is not surprising then that this feeble attempt to protect the Indians should often be enumerated

among the crimes of a wicked ministry and the worst of motives assigned for it.

Even in Canada the regulations of the governor were systematically evaded and disregarded. This unfortunate state of affairs culminated in the wanton and brutal murder of several Indians, among whom were a woman and a child, on the north shore of Lake Erie, by a trader of the worst reputation, named Ramsay. The murderer was arrested and sent down to Montreal for trial, but after long confinement, had to be released for lack of evidence.*

The frontiers of New York and Pennsylvania swarmed with *bos-lopers* (bosch-loopers), the Dutch counterpart of the reckless *Coureurs des bois*. The excitement and uncertainty prevailing in all the colonies encouraged them in their defiance of the officers of the crown and prevented punishment of their crimes.

The revolution followed and the occupation of Montreal for several months by the Americans in 1775-6 materially dislocated the trade of the province. The adhesion of the western Indians, with a few exceptions, to the crown had the effect of cutting off all trade with the settlements south of the lakes, and the posts of Niagara, Detroit and Mackinac became of more consequence than ever.

Charles de Langlade and his nephew, Gautier de Verville, once more led the Indians of the Northwest, to the relief of Montreal. They were ably seconded by DeQuindre, LaMotte, LaBate, and other French Canadians. Alexander McKee and Matthew Elliott, traders of long experience and marked ability, fled from Pittsburg to Detroit, where they were at once employed by the lieutenant-governor in the Indian department. Both of them soon acquired an extraordinary influence among all the tribes in the vicinity, which they retained during the remainder of their lives.

Other traders, like Godfroid de Linctot, Hammelin and McCarty, joined the revolutionary party, but their efforts among the Indians had slight success.

In May, 1777, instructions were issued by the governor to permit no vessels or boats, except those of Indians, to navigate the lakes without satisfactory passports, and prohibiting the construction of any vessel larger than a common row-boat. All vessels already afloat were to be taken into the public service. To compensate the merchants as much as possible for the loss and inconvenience they must necessarily sustain from this arbitrary measure, the commanders of these vessels were instructed, whenever possible, to assist in transporting their goods free of charge, merely taking an acknowledgment from the owner for the service performed. In the autumn of 1779, when Niagara

*For Ramsay's own version of this affair vide P. Campbell's travels.

was threatened with an attack, passes were refused to everybody. Yet, side by side with the military operations, in spite of all restrictions and obstacles, the trade went on with undiminished energy.

A memorial from "the merchants and traders of Montreal to the great carrying place in Lake Superior and the interior country, commonly named the North or Mer de Ouest," presented to General Haldimand in May, 1780, estimated the annual returns from their operations in that part of the country for a number of years previous at £50,000 worth of furs. They stated that 300 men were employed by them, who usually returned to Grand Portage from the interior between the 10th of June and the 15th of July to deliver their furs and receive supplies for the next year. They had not been permitted, as in former years, to purchase provisions of any kind for the use of these men at Mackinac and Detroit, in the autumn of 1779, owing to the increased demands of the garrison and Indians, and consequently were obliged to send everything from Montreal, a distance of 1,350 miles to Grand Portage, and 1,800 miles further to their most remote stations. "Sometimes," they added dismally, "it happens that winter sets in before your memorialists can arrive at the factories where they intend to pass the winter, and when that unfortunate circumstance takes place there are instances of several having strayed, and even so direful have the consequences been as to occasion the casting of lots for an unhappy victim to serve as food for his more unhappy companions." This memorial was signed by John Porteous, Holmes & Grant, Simon McTavish, Charles Grant, Todd & McGill, Benjamin & Joseph Frobisher, McGill & Paterson, Forest Oakes, George McBeth, and Adam Lymburner. Most of these ranked among the leading merchants of the province.

Besides twenty canoes designed to supply the local trade of Mackinac, licenses were issued in 1778 for sixty-one canoes destined for places beyond, exclusive of the northwest trade, which was mainly conducted from Grand Portage. These were distributed in the following proportions: two to Grand river; three to Grand river and the Mississippi; six to the Mississippi; two to the northwest; twelve to the Illinois; twenty-one to La Baye and the Mississippi; eight to Nipigon; three to Lake Superior, and four to Prairie du Chien. Included in their cargoes were 680 fusces and 29,575 pounds of powder. The merchants trading in this quarter soon after formed an association which they termed "the general store," having a nominal capital of 200 canoes and 438,750 *livres* in merchandise. Nine of the partners are named as residing in Montreal; seven at Mackinac; six at the Mississippi; and one at each of the following places: Akikemazac, Deux Rivières, Grand River, La Baye, La Point, Lake Superior, Matchedash, Rivière au Sable, St. Joseph's, and Sag-

inaw. The principal merchants living at Mackinac were Matthew Lesley, David McCrae, John McNamara, Patrick Duggan, Henry Bostwick and Benjamin Lyons. Mention is made of Lyons as the owner of houses at the mouth of French River, and Alexis Campion is named as residing at Matchedash bay.

This combination of interests was promoted by Major de Peyster, the commander of the garrison, with the object of driving out of the country the unlicensed traders, of whom there seems to have been a good many scattered among the Indian villages. One of these, a negro from St. Domingo, known by the singular name of Baptiste Point au Sable, was captured at the River du Chemin; and another, rendered desperate by pursuit, blew himself to pieces with a barrel of gunpowder rather than surrender.

In the summer of 1778, a strong body of Virginians took possession of Kaskaskia and followed up their success by the capture of Vincennes; in both instances being joined by many disaffected inhabitants. The principal trade of the Illinois was in consequence diverted from Mackinac to the Spanish posts beyond the Mississippi. A party from Kaskaskia plundered the traders at St. Joseph's, but was pursued and defeated. Hostile Indians and half-breeds, instigated by the Spaniards and Virginians, constantly menaced St. Joseph's, LaBaye and even Grand Portage. A small detachment of regular soldiers was sent from Mackinac in 1780 to the latter place, where they built a block-house for the protection of the merchants. Militia officers were stationed at LaBaye, St. Joseph's and St. Mary's, and scouting parties dispatched in various directions. Finally two expeditions, each composed of a few regular soldiers and volunteer militia and a considerable number of Indians, were sent against the Illinois and the Spanish frontiers. One of these, under Charles de Langlade, proceeded by way of Chicago directly to the Illinois. The other, commanded by Capt. Hesse, late of the 69th, followed the Fox and Wisconsin rivers to the Mississippi. This party built a stockade at Prairie du Chien, where it was joined by a large body of Sioux. They next seized the lead mines and captured some boats with stores, but were afterwards repulsed in attacks on the Spanish forts at St. Louis and Cahokia, although they brought off a number of prisoners and inflicted much damage.

Taken as a whole, the trade of Mackinac and all places beyond, including the northwest, produced annually £100,000 worth of furs, or about half the entire quantity exported from the province. The cargoes of one hundred canoes, each navigated by a crew of eight men, were required to pay for them. The average value of each canoe load of goods, including the cost of transportation to its destination, but not the payment of wages, was estimated at 70 pounds. A considerable variety of

goods was needed for successful traffic. Guns, powder, ball, knives, hatchets, rum and tobacco were in greatest request, but a list of articles usually taken includes saddles, spurs, bridles, saddle-cloths and housings, morris bells, razors, combs, looking-glasses, plumes, beads, ribbons, lace of several kinds, hats, laced and plain coats, shirts, shoes and bed-gowns; six sorts of blankets, handkerchiefs, calimancoes, osnaburgs, cottons, calicoes, muslins, linens, swanskin and embossed serge fabrics, white, black, blue, brown, green and scarlet cloth of several grades; thimbles, needles, thread, pewter basins, iron pots, brass, copper and tin kettles, snuff and tobacco boxes, bar iron and steel, silver crosses, fingerings, gorgets, armbands, wristbands, buckles, earrings, hangers, brooches, moons, earwheels, earbobs, beaver traps, fish-hooks, spears, hoes, and fire-steels. All of these things were brought from Montreal in canoes, by way of the Ottawa, as this was found to be both a quicker and a cheaper mode of transportation than in sailing vessels on the lakes.

As the beaver gradually disappeared from its favorite haunts in the Michigan peninsula, both the trade and population perceptibly declined. Many of the inhabitants had emigrated to the Wabash and Illinois, where they hoped to be beyond the grasp of the meddlesome English law. The trade then was carried on in a less reputable manner than at Mackinac, owing chiefly to the size of the settlement and lawless character of many of the inhabitants.

Lieutenant-Governor Hamilton reported, shortly after his removal in 1776, that "regulations for the trade with the Indians are either not generally known or not enforced. For example, great abuses exist in the weights and measures used by the traders, and for the want of an office to stamp the silver works, which make a considerable article in the trade with the savages, they get their trinkets so debased with copper as to lay open a large field for complaint."

The number of traders not being limited allows of many engaging in it who have no principle of honesty, and who impose on these poor people in a thousand ways, to the detriment of honesty and to the disgrace of the name of *trader* among the savages, which usually means with them an artful cheat. The distrust and disgust conceived for these traders occasion many disputes, which frequently end in murder. This trade being lucrative, engages several who have little or no capital of their own to procure credit, sometimes to a considerable amount, their want of honesty (or both), occasion frequent failures, the adventurers then decamp to some other post, where they recommence the same traffic, improving in art and villany, and finally become desperate in their circumstances and dangerous from their connections and interest with the savages."

But as these men may seem, their *engages* were infinitely

worse. "They are," says Hamilton, "the most worthless vagabonds imaginable. They are fugitives (in general) from Lower Canada or the colonies, who fly from their debtors or the law, and being proficient in all sorts of vice and debauchery, corrupt the morals of the savages and communicate to the wretches disorders they might have continued untainted, were it not for the intercourse with these *engagés*. Having contracted new debts, they fly to the more remote posts, where they re-commence the same trade."

The population of the settlement did not exceed 2,100, of whom 127 were slaves. The French Canadians he described as easy-going and illiterate, few of them being able to read, and still fewer to write their own names. "They build on the borders of the strait and occupy about thirteen miles in length on the north and eight on the south side. The houses are all of log or frame work, shingled. The most have their orchard adjoining; the appearance of the settlement is very smiling."

The new settlers, on the other hand, were active and enterprising. They had introduced sheep and black cattle and their farms were managed to the best advantage. All the large vessels on the lakes were owned by them and he anticipated that in a few years the Canadians would be compelled to part with their lands and become reduced to the condition of dependents. It is stated, apparently on good authority, that there were then only thirty Scotchmen, fifteen Irishmen and two Englishmen in Detroit, exclusive of the garrison, but the greater part of the trade of the place was already in their hands.

The population was considerably increased during the war by the arrival of fugitives and prisoners from the frontiers, who were encouraged to settle on lands in the vicinity. Indian parties, accompanied by white officers, were constantly sent out to harass the borders of Virginia and Kentucky, and traders followed in their trail, and with pack-horses, as far as the villages near the Ohio. The portage from the Miami of the Lakes to the Wabash had been made passable for carts and the exclusive right of carrying goods was granted to Mr. Masonville, of Detroit.

At Niagara there was not a single inhabited house, outside the walls of the fort. Glances of the state of trade and the life of a trader at that post during the revolution are found in the correspondence of Francis Goring.

Writing on the 23d September, 1779, he says: "I have lived at this place three years last August, and have had two masters in that time and am now getting a third, still in the same house. The first was Mr. Pollard. He made a great fortune and left off. The second, Mr. Robison, who was formerly a captain on these lakes, is now tired of business and assigns in favor of George Forsyth, who has treated me with the greatest kindness and is ready to serve me in anything I should ask. I have had several

offers by my two old employers to leave Niagara and live with them in Canada, but I believe I shall continue here, which I prefer to Canada, the popular place where everything is carried on with great gaiety, and this is a place which you may say is almost out of the world, in the woods, and frequented by nothing but Indians, except the people of the garrison. * * * At this place is carried on a great business, which consumes every year £30,000 sterling worth of merchandise of all sorts, which is mostly retailed to the Indians. We employ four clerks, of which I am the senior. For the first two years my salary was small, but I have now (and I flatter myself that there is not a clerk in these parts that has so much) about fifty guineas per annum, being found food and washing. By carrying on a correspondence with my friend Mr. Cruikshank, who supplies me with silver work, such as the Indians wear, which I dispose of to the merchants in the upper country, and the profit arising therefrom is sufficient to find me in clothes."

In 1767, Sir William Johnson reported the presence of unlicensed traders at Toronto, but it seems to have been abandoned altogether as a trading station soon afterwards. Even the trail leading to Lake Simcoe was little used and the Trent valley route became almost forgotten. Benjamin Frobisher said in 1785: "I have seen several persons who have gone from hence (Montreal) to Lake Huron by the carrying place of Toronto, but have only met with one who set out from the Bay of Kentic, and that so far back as the year 1761, and the knowledge he seems to have of the country he traveled through I consider very imperfect."

The commerce of Oswego had steadily declined since the conquest. Instead of forty or fifty traders, as in 1750, but one named Parlon remained in the summer of 1779. His property was pillaged and his buildings burned by a party of Americans and Indians sent for that purpose from Fort Stanwix, and he then took shelter in the small fort recently built on Carleton Island. Other traders followed him there, and for a few years a fair trade was carried on with the neighboring Indians. The continuance of the war occasioned everywhere an enormous rise in prices and a great scarcity of imported goods. The scarcity of coin and in fact of any medium of exchange probably accrued to the benefit of the traders. Gold, silver and even copper coins of most European countries passed current. In addition to the ordinary French and English pieces, Spanish moidores, pistareens, pistoles and dollars, the phannes of Portugal and Caroline of Germany were in common circulation.

PERSONAL DIVINITIES AND CULTURE HEROES OF THE UNCIVILIZED RACES.

BY STEPHEN D. PEET.

We have now passed over the entire region occupied by the uncivilized tribes and have considered their religions in their order. We have found that various animals, the serpent, the sun and moon, fire and water, idols and human images, mythologic creatures, winged creatures, ancestors, and even the cardinal points were, in a manner, worshiped by them, the cult varying according to the locality. There remains, however, one important work, that is to trace out the particular personal divinities and to identify them by name and locality, and to describe the office and character which they bore in the minds of the people. This is a work which has been done for nearly all civilized races, both in the east and the west, and there are few divinities anywhere, whether in historic or prehistoric times, which are not known by name. A sort of classical mythology could be written about them, but somehow the divinities of the uncivilized races are not so well known and so every dictionary is destitute of their names. The task is a difficult one, and yet there are certain things which aid us greatly in identifying these aboriginal divinities.

1. In the first place, the chief divinities were generally "Culture Heroes," which were regarded as the tribal ancestors and guardian spirits, but also as great creators and transformers, the beginning of nearly all tribal history, going back to the creation.

2. The character of these "Culture Heroes" generally correspond with that of the people who worship them, those of the lower or degraded tribes having a very low character, and those of the more advanced tribes being characterized by exploits which were full of a certain kind of barbaric heroism.

3. The myths which perpetuate the names and exploits of the divinities, especially those of the "Culture Heroes," generally contain an imagery which remarkably corresponds with the scenery of the habitat over which these divinities had their sway. The study of the scenery in particular localities is a great aid in identifying them.

4. There are occasionally certain traditions connected with certain objects in nature, such as rocks and caves, streams and waterfalls, lakes and sandy beaches, trees and mountains, rivers and oceans, which convey the idea that these scenes were continually haunted by the spirits of the divinities. The influence

of these traditions was felt so much that savages rarely passed by the objects without making an offering to the spirit of the divinity.

3. Various relics are found in the different parts of the continent which may be taken as images of the divinities, or as embodying the myths concerning these divinities. These relics are in the shape of carved pipes, engraved shells, masks, rock inscriptions, amulets and charms, idols, as well as the figures on the inscribed rocks and on the effigies of earth, nearly all of which were designed to be symbols of the supernatural powers. The study of the relics, and especially the comparison of their peculiarities with those given in the myths, will enable us not only to identify the divinities, but to carry back the cult to prehistoric times, thus showing that the same "Culture Heroes" were worshipped in the earlier and later times.

With these points in mind, we propose now to go over the tribes which occupied by the uncivilized tribes, taking the different tribes groups in their order, and making a special study of the divinities which were the most prominent in those groups, and especially those which were regarded as their culture heroes. We shall begin with the rude fishermen of the north and search out their myths, with the idea of ascertaining the chief divinities. We shall then pass to the hunter tribes on the northwest coast, from those to the hunter tribes along the chain of the great lakes, from those to the nomadic tribes of the prairies, and from those to the mountain tribes of the Central and Southern States, leaving out the tribal divinities of the Gulf States as belonging to a special cult, which is very different from that of the wild tribes. We shall find that in all these northern regions, the chief divinities are presented under animal names and animal shapes, though many of them were nothing more nor less than the personification of natural powers, but clothed with the imagery which the prevalent totemism or animal worship would suggest. Many of these are "Culture Heroes," which were common to all the tribes, having a similar character everywhere. These bear such resemblance to the "World Makers" of the old world that we are forced to believe that there was a transmission of legends and traditions from the continents which filtered through and effected the conception which the natives had of the creation. Occasionally there is a trace of that grand perception of a supreme being, who was the great first cause of all, exactly as there was among the ancient races of the far east, and in classic lands, and which is a proof of divinity in human nature, however much it may be obscured.

4. We begin with the divinities of the Eskimos, taking the tribes which occupied the shores of the Arctic sea, and which stretch from Greenland to Alaska, embracing the central district. The chief divinity and culture hero was a phan-

tom, in the shape of a huge dog, which was really the spirit of the sea, though the spirit figures in the shape of a woman, called Sedna, who lives in the sea. There are, beside this, other divinities which were personifications of the nature powers. One of these figures is a triad in the shape of three sisters, the three symbolizing the different parts of the thunder storm. One of them strikes the fire and makes the lightning (*Ingulitung*), another rubs the skins and makes the thunder (*Udlugitung*), the third makes the rain and is a rain god. They live in a house made of whale ribs. Their faces are entirely black, reminding us of the thunder clouds, but they wear clothes which symbolize the rain clouds. There were supernatural beings among the Eskimos who were owners of the stars and constellations and revolve with the stars. There are also other spirits which haunt the rocks, but which are in the shape of bears, birds and other animals. They are called tornaits.

The tornait of the stones live in the large boulders, which are supposed to be hollow and form a house, the entrance of which is only visible to the Angakoq or Shaman. The bear is the



Fig. 1.—The Whale Killer.

most powerful among the spirits. The spirits of the dead are also very active. They knock wildly at the huts which they cannot enter. There are also spirits in the air. When the storms rage and the sea breaks from its icy fetters, and the ice floes break with loud clashes, the Eskimo believes he hears the voices of these spirits. Sedna, the great divinity, lives in the sea, and is the divinity of the sea. She is sometimes controlled or summoned by the Shaman or Angakoq. She comes up through the hard rocks, and the wizard hears her heavy breathing. She is harpooned and sinks away in angry haste.

The deluge myth prevails among the Eskimos, but it may have come from the missionaries. Still there is one feature of the myth which is very remarkable. The story is, that the waters rose to the top of the mountains, but after they retired they left the mountains covered with a cap of ice. Some think that this is a tradition of the glacial period, others that it is only one method of accounting for the glaciers which still exist in Alaska and elsewhere. There is also a myth concerning the man

in the moon. The same tradition of the "man in the moon" is found among the Haidas. The story, according to Judge Swan, is as follows: The moon, *koong*, discovered the man, *Eethlinga*, about to dip his bucket in a brook for water. It sent down its rays, or arms, and caught the man, and took him, with his bucket, up to itself, where he has since lived, and can be seen every full moon, when the weather is clear. The man is a friend of *T'kul*, the spirit of the winds, and at the proper signal empties his bucket, causing it to rain upon the earth.*

The Eskimos have perpetuated the name and memory of their chief divinities by identifying them with the objects of nature and making the very rocks and streams and heavenly bodies to be their abodes. There is one remarkable thing left out from their mythology, namely, the northern lights. There may be, indeed, myths in reference to these, but they are not on record. There is a myth concerning the northern lights among the Chippewas. The story is that during one severe winter famine and distress came upon the people. An old chief, the oldest man in the nation, was informed in a dream that the anger of the great spirit could be appeased by human sacrifice. Lots were cast and three braves were selected for sacrifice. The spot selected was the summit of a neighboring hill covered with woods. The three were fastened to sticks and burned alive, by the magicians, in silence, unattended by spectators. The weather moderated and afterward there was an abundance of game—buffalo, bear and deer—in every wigwam. A feast of thanksgivings was offered. During this ceremony the northern sky was illuminated by brilliant lights. Among the lights three huge figures of a crimson hue were seen constantly dancing. These the magicians proclaimed to be the ghosts of the three warriors who had been offered in sacrifice.

II. We turn next to the divinities of the Haidas and Thlinkits. The chief divinity and culture hero of this region is the raven. This may be, perhaps, considered as a spirit of the forest, and at the same time a personification of the nature powers. The raven was the creator and ancestor of all the tribes. There were, however, other divinities which were the spirits of the sea. Among these, the whale killer, a species of porpoise, was the chief. There is a figure carved on the rocks near Fort Wiangel, Alaska, which represents the orka or whale killer. See Fig. 1. Many other animals and birds, which were common on the northwest coast and nowhere else, were regarded as supernatural beings.

The Smithsonian has furnished various cuts which represent human faces and conventional signs, which were carved upon the rocks. These show that the same superstition which pre-

* See Swan, *Ann. Rep. U. S. F.* 1899, p. 327.

vailed among the Eskimos prevailed also among the Haidas, that the rocks were haunted by spirits. The same superstition also seemed to have prevailed among the uncivilized tribes elsewhere. This is illustrated by the mammiform images from Porto Rico, which represent both the shape of the island and the guardian divinity of the island.*

There is an image found inscribed on the rocks in the Easter Islands which represents a mythical creature, half human and half animal, with bowed back and claw-like arms. According to the natives this was intended to represent the god Meke-Meke, the great spirit of the sea. Mr. William J. Thomson says the figure bears a striking resemblance to the decoration on a piece of pottery which he once dug up in Peru while making excavations in the graves of the Incas. See Fig. 2. This animal might be taken for a monkey.

Mr. James Terry and others have claimed that the monkey may be seen carved upon the totem posts of the Haidas. No such animal figure, however, has been found on the northwest coast. The figure which he has taken to be the monkey is nothing but the bear with the human face and form.

There are many myths which are descriptive of these ancient creatures. These myths are often very beautiful, for they are full of word pictures which bring the scenery before us, but at the same time are full of fabulous adventures, and show the strange imagings of the natives in which the sea, land, and the creatures of the earth and water and sky were all mingled together. Images of these divinities were frequently embodied in the sculptured figures, were woven into garments, or were tattooed upon the bodies of the natives. The myths and symbols served to perpetuate their memory and make them very sacred in the minds of the people. At times the individuals would tattoo the figure of different animals upon their persons—upon their arms, breasts and legs, conveying the idea that each part of the body was controlled by a different divinity. There are figures in the reports of the Ethnological Bureau which represent this. In one a man has a fish tattooed on his arm, a cod split open on his breast, on each thigh the cut paws, below each knee the frog. The back of the same man has the wolf split in halves and doubled. A woman has on her breast the head and fore paws of a beaver, on each shoulder the head of an eagle, or thunder bird, on each arm the halibut, on the right leg the skunk, on the left the frog.

The Haidas have many myths about the raven, the whale, the wolf, bear, salmon, and whale-killer, all of which were totems, stories of their adventures as human beings, which are exceedingly new and interesting. Occasionally there is a trace of sun

* See *Journal of the Smithsonian Institution*, 1892, p. 176.

worship, for the sun and moon are personified here, as among other races, but it is a sun worship which is mingled with animal worship. One tradition is that the sun descended from heaven, in the shape of a bird, and was transformed to a man. He built a house, and on his house front, on either side of the door, a sun was painted. The uprights represented men carrying suns. These were the slaves of *Sintlac*, the sun. The crossbars connecting the uprights were also men, but the beams were sea lions. Thus we see all the kingdoms were mingled in their mythologies, the animal, the astronomical, and the human, to represent



Fig. 2. Image on a Rock, Easter Islands.

the divinities which ruled the heavens. There is one heraldic column, or gens tree, on which at the top there is a slave extending his hand as though he were talking. His name signifies "he who gives presents to strangers." Above the man is a mask surrounded by wooden rays, which represent the rays of the sun. There are also masks which the natives use in their dances, which have the beak of a bird, and are surrounded by a circle which represents the sun, but have a human eye. The masks worn in feasts often represent birds, animals, and human faces. These masks embody legends which are preserved about their functions, which were birds, animals, human beings and ancestral spirits. The myths are also suggestive. These are full of descriptions of the gods of the sea and land and sky, though they bear the human semblance. One myth represents a man with long hair, who is the spirit of the sea. The myth is embodied in a column. In this, the man with a split skull stands on his head. Above him is another man seated. Above

ties which ruled the region along the great lakes and which were revered by the western tribes, such as the Mississaugas, Menominees and Ojibways. Various reasons have been given for this dissimilarity in the gods of the Algonkins, some writers ascribing it to the influence of the scenery and surroundings, but others recognizing in it the effect of contact with other countries. Mr. Charles Leland says that the myths which are still afloat among the natives of the eastern tribes along the coast of Maine have great resemblance to the Scandinavian myths, and makes out that the gods which ruled here were exact counterparts of the Scandinavian gods. He also suggests that these myths were introduced by the Norsemen, during their various voyages, long before the times of Columbus, and that they were adopted by the natives with which they came in contact. This, however, does not account for the strange character of the myths of the western tribes, for if the eastern myths contain fragments of the ancient Sagas, the western myths contain the fragments of the still more ancient Scripture story, the location of these being still farther in the interior and more remote from any historic country.

There is something very mysterious about this transmission of myths. Why are there so many more resemblances to the Scripture narrative in the myths of the Algonkins than in those of any other tribe? Shall we admit that there were strange visitors among the natives of the region, concerning whom there is no record at present, and that these visits, whether of pagan Norsemen or Icelandic Christians, had the effect to introduce among the natives the stories which abounded both in the "Eddas" and in the sacred Scriptures? We do not claim for any American race the marvelous feat of remembering Scripture traditions throughout all their history, for we ascribe the preservation of these traditions in Europe to a written literature. Whatever portion of the tradition is found among the Algonkin tribes must have come from a filtering process, rather than from the embalment of tradition. May it not be that there were influences which crept down from the early colonies in Iceland and transmitted both pagan and Christian legends, and that the Algonkins of the east and of the west appropriated them, but clothed them in imagery drawn from the different localities?

Carlisle makes the Scandinavian myths a development of paganism. "There was a natural religion which brought a recognition of the forces of nature as godlike and personal agencies as gods and demons not inconceivable to us." "The infant thought of man, opening itself with awe and wonder on this ever stupendous universe, might bring out something very genuine." "The work of nature, for every man is the fantasy of himself, the image of his own dream." But how these facts of Scripture history could be suggested by the works of nature is difficult to understand. "These do not come from the unnamable subtleties

of spiritual law, to which many pagan fables owe their shape." The Abanakis are supposed to have held the great eastern divinity—the sun—as their "Culture Hero," while the western tribes situated on the great lakes are supposed to have had the rabbit and the muskrat and loon as their chief divinities, because these animals were better adapted to the water and to the scenery of the interior.

The myths which have been gathered by certain writers—Rev. S. F. Rand, Mrs. W. Brown and others—illustrate this. They are legends which are affixed to certain spots, which serve to make them sacred to the minds of the natives. The objects of nature thus became myth bearers, and through the influence of these traditions are still reminders of the strange divinities which ruled here. There are not many divinities, and such as are spoken of, were personifications of the different animals which abounded, such as the whale, the wolf, the wolverine and the moose, the wolverine being the divinity which corresponded to the Scandinavian *Loki* and was called "Loks." The story of the creation, or rather the deluge and re-creation of the earth, is not conspicuous among the Abanaki traditions. In place of this there is a series of transformations and local adventures in the forests and in the sea, and which makes the whole scenery alive with supernatural beings, very much as the scenery in the north is filled with the spirits of the divinities which the Eskimo worshiped and as the Scandinavian scenery was alive with the spirits of the pagan divinities.

2. We turn now to the divinities of the western tribes, including those of the Delawares, Ojibways, Blackfeet, Ottawas and Crees. Here we find animal divinities again, but the chief of the divinities is a sort of culture hero and creator. He presides over the territory of each tribe and is identified by certain objects in that territory. His name varies according to the tribe in which he rules, though there is a similarity between the names. He is called by the Delawares Manibozho and is identical with the hare, the giant rabbit.* Among the Menominees he was called the Manibush. He was born from a virgin, the daughter of Nokomis. He was a little white rabbit with quivering ears. He was the means of destroying the evil manitou, or the great fish. He transformed himself into a pine tree, but he at last went away and dwelt in a wigwam which is preserved in a large rock near Manitowish. This rock is noted for the tradition which still

* "The Great Spirit," *American Explorer*, September, 1841, p. 27. Ojibways, Nanabeshu; Nappewin, Anishinabek; Crees, Wabosatchah; Messaugas, Wanibush; Menominees, Manibush.

* "The Great Spirit," *American Explorer*, September, 1841, p. 27. Ojibways, Nanabeshu; Nappewin, Anishinabek; Crees, Wabosatchah; Messaugas, Wanibush; Menominees, Manibush. There are also certain objects of nature, as follows:—On a smooth rock on the shore of Lake Superior there are prints of human footsteps, and a round hole about the shape and size of a rabbit's ear. There are believed to be the tracks of Nanabeshu, and the kettle which he used to boil his soup. The great rocks of flint on the east shore of Grand Traverse bay are believed to be the stones of his brother, white Nanabeshu's new. A depression on the shore of Lake Superior, near Bay Point, is Nanabeshu's grave, and a mountain some ten

ancestor and ruler. This was probably the meaning of the Great Spirit when used among them. The term was used out of accommodation to the white man. The Great Spirit had no semblance, and was a very indefinite being to the savage. The term might apply to the great manitou or creator, though to the particular tribe he might be the great rabbit or hare or any other animal which existed before the creation. It might be the personification of the sun, and yet was not known or worshiped as such.

(2) The manner in which he came into existence is to be noticed. Generally it was by an untimely birth, through the side or arm-pit of his mother, which caused her death. In most of the legends there were two brothers, one good and the other evil,* who struggled for the mastery, like Esau and Jacob, before they were born. In this respect the myth reminds us of the Scandinavian myth and also one contained in the ancient Vedas of the Hindoos. This conception of a hero, born of a virgin, who contended with his brother who had caused the death of his mother, and who afterward became the creator and transformer as well as benefactor, is very common throughout the globe.† It is accounted for by many as the result of personification, the light being the great benefactor, but the darkness being the great enemy of mankind. This conception is at the basis of the mythology of the east and was common in Egypt, Assyria and India. According to most writers, it was transferred to Scandinavia, and there formed the basis of the strange mythology which has been preserved in the ancient sagas. It may also have traveled further west and become the basis of the myths concerning the culture heroes and the great divinities here.

If the eternal struggle of Ormuzd and Ahrimam, light and darkness is so prominent in the Zend-Avesta of the Persians, and was also embodied in the story of Thor and Midgard in Scandinavia, and of St. George and the Dragon in Great Britain, we see no reason why it may not have been transferred to Iceland and been embodied here in the story of Glooscap and Lox, or Manibozho and his brother. Certainly when one comes to the part of the story which refers to the struggling of the two brothers in the mother's womb, and the issue of one of the brothers from the mother's arm-pit, thus causing the mother's

*The story of Jacob and Esau maintains that this distinction between good and evil sprang from the struggle of light and darkness and had no reference to moral qualities. There is a parallelism in this case, yet the distinction between a benefactor and a mischief-maker is clearly indicated by the character of the two brothers. Glooscap, who is called a heat and a benefactor, is the benefactor, while Lox, who is his enemy, resembles the serpent, who is called a mischief-maker. The animals are somewhat significant. Glooscap is the white rabbit, and Lox is the wolverine, a stealthy animal.

†The story of Jacob and Esau, and of the good mind and the bad mind, but Father Brebeuf, who translated the legend, has the struggle of Loucheba (the white one) with his brother Loucheba (the black one). Thus two centuries have given the tale a different or a modern interpretation. The traditional influence of Father Sagier says that Manibozho is always represented as a great serpent, a spirit of evil, but Father Lejeune, in 1854, makes him a good serpent. It is not certain that the serpent was the type of evil among the Indians, it was rather the embodiment of the nature powers, the lightning.

death, it seems as if it must have been borrowed, and could not have been an original invention among the American savages.

This struggle between the two brothers is very wide-spread in America. The Miztecs hold that two brothers dwelt in the garden. One was the wind of nine spirits and the other the wind of nine caverns. The first was an eagle, which flew over the waters of the enchanted garden. The second was a serpent with wings, which flew with such velocity that he pierced rocks and walls. Among the Dacotahs, the combat is waged between Unk-ta-he, the god of waters, and Wauhkeon, the thunder bird.

Schoolcraft has recorded a myth in which four sons were born at a birth, which caused the death of the mother. The first was the friend of the human race, Manibozho. The second presides over the land of souls, Chipiopus. The third is the rabbit, Wabosso, who rules the north. The fourth was the flint man which supplies fire to men from the stones which are scattered over the earth, Chakekenapok. Manibozho killed the flint god, tore out his bowels and changed them to trailing vines. Then he himself gave them lances, arrows and implements and taught them how to make axes, snares and traps. He placed four good spirits at the four cardinal points, whither the calumet is turned, in smoking at the sacred feasts. The spirit of the north gives snow and ice, so that men may pursue game. The spirit of the south gives melons, maize and tobacco. The spirit of the west gives rain, and the spirit of the east gives light. The voice of the spirits is thunder.

(3.) The third fact, which is common in all the myths, is that there was a great flood which came and destroyed the whole race that covered the earth. The cause of this flood is not always the same. By some it is said to have originated in the sins of the people, and others, in the jealousies of the gods.

Among the Ottawas the god of the deep was jealous of the wolf. He killed the wolf and made a great feast, to which sea serpents and water tigers were invited. During this feast Manibozho, the great divinity, changed himself to a black stump. The sea serpent coiled himself around the stump. Manibozho then fled, pursued by the monsters. The waters rose mountain high, but Manibozho commanded a great canoe to be formed, in which he saved himself.

Among the Menominees, there were three brothers, who destroyed a great fish, but the evil Manitou from under the earth was angry at this and seized one of the brothers, Manibozho, as he tried to cross the lake. The waters poured out of the earth and pursued him, but the badger hid him in his burrow, and by throwing back the earth kept out the waters. Manibozho then took refuge on the highest mountain and climbed to the top of a pine tree. The waters continued to rise, but Manibozho caused the tree four times to grow, so as to lift him above the waters. He then saw the

animals struggling in the water. He commanded first the otter, then the beaver, the mink, and the muskrat to dive for the mud.

Among the Crees, the Manibozho makes a monster fish, which strikes the water with his tail and causes the inundation until the tops of the highest mountains are covered and no land is seen. Then Manibozho makes a raft and sends down the diver duck, and then the muskrat. Imitating the mode in which the muskrats build their houses, he formed a new earth, placing the disk of earth on the water, which grew to great size.

Among the Missasagas, the story is that Manibozho hunted the great beaver around Lake Superior, and broke open the great beaver dam at the foot of the lake, exactly as Glooscap broke open the beaver dam on the coast of Maine.*



Fig. 3. —Serpent Pipe.

Among the Canadian Indians, the story is that two brothers were hunters. They chased the deer out upon the ice, the sea lions broke the ice, and the brother was slain. His body was hung across the doorway of the sea lions' house. Manibozho took down the body, but the sea lions chased him to the edge of the lake. They made the waters to rise, and accompanied by all the birds and beasts, they chased him far inland. He climbed a very high mountain, closely followed by the waters. He then built a raft, took on it his brother and all the animals and floated away. Another story is, that Manibozho was walking along the sides of an enchanted lake. The waters began to boil, and from them all the beasts came forth, among them the white lion and the yellow lion. Manibozho changes himself to a stump. The bear hugs it and tears it with tooth and claw. The great serpent coils himself around it and tries to crush the stump.

Thus the story of the deluge varies with the different tribes, for each tribe makes the river or lake on which they dwelt the scene where the tragedy was enacted. Generally the myth bearers are certain inscribed rocks or caves, in which the serpent

*Faber, in his History of Idolatry, relates a story of the drawing out of a divinity from the cave and pillars of Great Britain.

is a conspicuous figure; sometimes an island, or a headland, or a waterfall will be pointed out as the place where the scene occurred.

What is most remarkable about this myth is that it seems to have prevailed among the Mound-builders. At least a pipe was found, by Squier and Davis, in a mound in Ohio, with a snake wrapped around the bowl, in a manner to suggest the story of the serpent and the stump. See Fig. 3. There is also a pipe in the Canadian Institute at Toronto that embodies this same myth. At first sight it may seem as if it was a representative of the tree and the serpent, but in reality it embodies the myth of the pine tree, or pine stump, with its branches taken off. See Figs. 4 and 5. The pipe was found in a mound in Kentucky, opposite the great fort at Lawrenceburg, Ind. It shows the branches of a tree in relief on the side of the face; also the coils of the ser-



Figs. 4 and 5. Serpent Tree and Pipe.

pent twisted tight about the throat. The face is very ghoulish, and might well be taken as the portrait of Manibozho. The eyes are expressive, as they are deep set, and yet the eye balls project and depict agony, as if the person was being strangled.*

(4.) The re-creating of the earth was the chief work of the divinity. The manner in which this was done varies according to the different tribes. The Canadian Indians say that the great hare or the dawn god, which was virtually the same as Manibozho, floated on a raft of wood, on which were animals of all kinds. Seeing only swans and waterfowl, he persuaded the beaver, the otter and the muskrat to dive. He took up the grain of sand and made a mountain of it. Manibozho started to go

*Other pipes found in the mounds illustrate myths still prevalent. A pipe found in Ohio represents an Indian man as a bear, with a woman's face, but with a serpent wound around the neck, the head and tail on the breast of the woman. A pipe in the Folsom collection at Chicago represents a frog carrying a human stone or man in its claw. A tarsel falls from the stone and is the claw of the frog. Another pipe represents a man on his knees holding a rabbit in his hands, the rabbit in an attitude as if ready to jump. There are also human effigies which represent us of the myths of the culture heroes.

around the mountain, but it increased in size and became the great earth. When the Indians hear noises in the mountains they know that the great hare is continuing his work. The story is that he is still traveling about the mountain and the earth is still growing. Schoolcraft says there is scarcely a prominent lake, mountain, precipice or stream in the northern part of America which is not hallowed in Indian story by the fabled deeds of this great divinity.*

The Pottowottamies say there were two great spirits, Kitchemaneto and Matchemaneto. The former was the creator of the world. He piled up the mountains and filled the valleys with streams. The first creature made was a wolf. He threw it into a lake and it was drowned. A storm arose and washed the bones of the animal ashore. They were turned into a woman, who bore the likeness of the Pottowottamies.† He made five other beings for her companions, smoking weed (Usame), the pumpkin (Wapahol), the melon (Eshkosimin), the bean (Kokees), the yellow maize (Montamin).‡

As to the process of world creation, we have a remarkable analogy between the American myth and the story given by Diodorus Siculus as the common tradition among the Egyptians. After the flood there was chaos, and the mud (maut) was the prevailing element. The mud was changed to human beings. Some of them came out fully formed and were completely human; others were partly animal and partly human; others still stuck in the mud, the upper part perfect, but the lower part unfinished.§

(5) The chief point which we make in connection with the myths of the creation is that the imagery is drawn entirely from the local scenery, objects which were familiar to the aborigines. This varies according to the tribe which repeats the myth, that of the Ojibwas having been taken from the region of the great lakes and the falls of St. Marie, but that of the Abenakis containing pictures of the rocks and forests of the coast of Maine; while with the Dakotas the imagery is taken from the pipe-stone quarry, and that of the Haidas from the scenes of the northwest coast, and that of the Cliff-dwellers from the region of the great plateaux.

The whale figures conspicuously in the Abenaki myths and those of the northwest coast, but never appears in the myths of the interior. There is one Algonkin myth, however, which seems to refer to the whale. The story is that a great fish—the king of fishes—swallowed Manibozho and his canoe. When he

*See Haxell's *Legends*, p. 69.

†See Haxell's *Legends*, "Recollections of a Tourist."

‡The Pottowottamies have also a story of a flood. They lived on an eminence on the Red River of the North. After the world had been destroyed by the flood, the Great Spirit placed on the eminence a few families, and from them sprung all the Indians.

§There is a tradition among the Dakotas that a race of giants was first created, but they were drowned in the soft mud before the waters of the flood were fully drawn off, and the bones of the mastodons occasionally found are the remains of this race.

found that he was in the fish's belly, he sought to escape. He looked in his canoe and saw his war-club, with which he struck the heart of the fish. He then felt a sudden motion, as if the fish was moving with velocity. The fish said, "I am sick at the stomach." Manibozho then drew his canoe and placed it across the fish's throat, to keep from being vomited into the deep. He then renewed his attack upon the fish's heart, and succeeded by repeated blows in killing it. He then heard birds scratching on the body as it floated on the shore. All at once rays of light broke in. The birds, which were sea-gulls, enlarged the orifice and in a short time liberated him. The spot where the fish happened to be driven ashore was near his lodge. This story is given by Schoolcraft, but he does not tell what tribe it came from. The event is evidently located on the sea rather than on the lakes. It resembles the one among the Haidas already referred to, and reminds us of the story of Jonah in the whale's belly. There is another myth of Manibozho acting as a fisherman. His hook is caught by the great serpent. It reminds us of the Scandinavian story of Thor and the Midgard serpent.*

IV. We next come to the "Culture Heroes" of the Iroquois. This remarkable people had many divinities, but the chief of them was called Ioskeha, though he resembled Manibozho, the Algonkin divinity enough to be taken as the same. Hiawatha, the founder of the Iroquois confederacy, has also been deified and worshiped as a culture hero. There is no doubt that the divinity Ioskeha was a personification of a nature power, as the story of his birth and life and many adventures would indicate. His brother was the troublesome Tawiskara, whose obstinacy caused the mother's death. His mission was to water the earth. He called forth the springs and brooks, the lakes and the broad rivers, but his brother created an immense fog, which swallowed all the water and left the earth as dry as it was before. He pierced this fog and let the water out, and so fertilized the land. He opened a cave in the earth and allowed to come forth all the varieties of animals with which the woods and prairies are peopled.† He contended with Tawiskara, his brother, and dealt him a blow in the side. The blood flowed from the wound in streams. The unlucky combatant fled toward the west, and as he ran drops of blood fell on the earth and turned to flint stones. The home of Ioskeha is in the far east. There was his cabin, and there he dwelt with his grandmother, the wise Attensic. This Attensic was a supernatural being who dwelt above the earth when it was covered with water, and when the aquatic animals and monsters of the deep were all the living creatures. She threw herself through a rift in the sky and fell toward the

* See *Myths and Stories of the Iroquois*, p. 140.

† It is worthy of noting that in the Haida story, which is the basis of the Haida story of the stars, the sun is the eye of the hero who opened the box and let out the stars, and in the Iroquois story of Hiawatha, who let the stars out of the box.

earth. Here a turtle, which dwelt in the primeval waters, offered her his broad back as a resting place. Upon this mossbacked turtle she sat, while a frog, or beaver, or some other animal, brought her mud, from which she, with magic power, formed dry land. It was the daughter of this Attensic who gave birth to the two sons. The birth cost the mother her life. Her body was buried, and from it sprang the various vegetable productions which the new earth required to fit it for the habitation of man. From her head grew the pumpkin vine, from her breast the maize, from her limbs the bean and other useful esculents.

There are many myths and traditions which perpetuate the various exploits of this culture hero. The state of New York abounds with localities where his spirit was supposed to have dwelt. The point, however, which most interests us in this connection is the extent with which the tradition of the flood was associated with the culture hero of this entire region.*

Enough has been said to show that the chief divinity of the Algonkins and Iroquois was very similar. About the only difference is that the imagery of the Iroquois divinity partook of the scenery of the state of New York, while that of the Algonkins partook of the different regions in which the several tribes formerly dwelt. The same may be said of one of the divinities of the Dakotas. This divinity, called Ictinike, is represented as a trickster, resembling Glooscap. He answers to the Iowa Ictinke, the son of the sun-god, and to the Santee Unktomi (spider). Ictinke, the deceiver, taught the Indians their war customs, but he was also a creator. He created fruits and vegetables out of parts of himself, as the Iroquois Attensic did out of herself.

V. The chief divinities of the Dakotahs are to be identified by the objects of nature in their territory. Catlin gives the myths of the Mandans, a branch of the Dakotahs. The one in reference to the pipe-stone quarry is very interesting. The great spirit at an ancient period called the Indian nations together here. Standing on the precipice of the red pipe-stone rock, he broke from its wall a piece and made a huge pipe, which he smoked to the north, south, east and west. He told them that this red stone was their flesh; that they must use it for their pipes of peace; it belonged to all. At the last whiff of his pipe his head went into a cloud, but the surface of the rock was melted and glazed. Near this spot, on a high rock, was the Thunderer's nest. Here a bird sits upon her eggs during fair weather. At the approach of a storm the skies are rent with bolts of thunder, which is occasioned by the hatching of her brood. Her mate is a serpent, whose fiery tongue destroys the

* The legend of Glooscap, the great spirit, appears to have its analogies in the legends of the Algonkins, the Sioux, the Iroquois, the Cherokees, besides various tribes of British Columbia, the Hurons, the Potomacs, the Navaho and the southern tribes.

young as soon as they are hatched, and the fiery bolt darts through the sky. Not far away, in the solid rock, are the foot-steps of the thunder bird, the track where he formerly stood when the blood of the buffalos which he was devouring ran into the rocks and turned them red. A few yards away runs a beautiful little stream, which leaps from the top of the precipice to the basin below; and on the plain, a little distance beyond, the five huge granite boulders, where was a shrine for the guardian spirits of the place. Here offerings of tobacco were made, and on the surface of the rock were various marks and sculptured figures, which were totems of the tribes which resorted there.

The K'nisteneaux version is, that at the time of a great freshet which destroyed all the nations of the earth, the tribes of the red men assembled at the great rock, called the Pyramid Rock, to get out of the way of the waters. The water continued to rise until it covered them all, and their flesh was converted into red pipe stone. While they were all drowning in a mass, a young woman, K-wap-taw-w (a virgin), caught hold of the foot of a very large bird that was flying over, and was carried to the top of a high cliff not far off that was above the water. Here she gave birth to twins, but their father was the war-eagle. Her children have since peopled the whole earth. "The pipe-stone is the flesh of their ancestors, and is smoked by them as the symbol of peace, and the eagle's quill decorates the head of the brave."

A tradition of the Sioux is as follows: "Before the creation of man, the great spirit (whose tracks are yet to be seen on the stones, at the Red Pipe stone quarry, in form of the tracks of a large bird) used to slay the buffaloes and eat them on the ledge, and their blood running on the rocks turned them red. One day when a large snake had crawled into the nest of the bird to eat his eggs, one of the eggs hatched out in a clap of thunder, and the great spirit catching hold of a piece of the pipe-stone to throw at the snake, moulded it into a man. This man's feet grew fast in the ground, where he stood for many years, like a great tree, and therefore he grew very old. He was older than a hundred men at the present day. At last another tree grew up by the side of him, when a large snake ate them both off at the roots, and they wandered away. From these have sprung all the people that now inhabit the earth."

This tradition of the tree and the serpent gnawing at the root of a tree, reminds us of the Scandinavian myth. According to this myth the ash tree was the tree of existence. This grew out of Niffleheim. Its roots were in Nidhogg, and the fountain Urdur-fount was near its roots. The great eagle perched on its branches, but the serpent gnaws at the roots in Nidhogg. The giant Hraesvelgur sits on heaven's edge, in the guise of an eagle, and the winds rush down to the earth through his outspreading

pinions. The squirrel, named Ratatosk, runs up and down the tree and seeks to produce strife between the eagle and Nidhogg. There are so many snakes in Nidhogg that no tongue can recount them. These myths, contained in the Sagas, were put together in Iceland about 1000 A. D., but some of them may have been easily transferred to the red Indians of America.

Among the Dacotahs the ash tree was very sacred, the serpent was a great divinity, and the bird resembling the eagle was the chief divinity. These were the symbols of the nature powers and the conception may have arisen as a result of personification, but the resemblance between the myths of the Dacotahs and the Norsemen is very striking. There is a myth among the Dacotahs which reminds us more thoroughly of the Scandinavian myth. A chart accompanies the myth. On this chart is a tree, which represents the tree of life. By this tree flows a river, and beneath the river is a red star, the morning star. Near this are six stars, called the elm rod. Beneath these are the moon, seven stars, and the sun. Under the "seven stars," the peace pipe and war hatchet. Beneath these the four heavens, or upper worlds, through which the ancestors of the people passed before they came to earth. They are represented by four lines, supposed to be pillars. These four heavens are supported by an oak tree. Beside the oak tree are earth lodges and villages. There was a chant or song connected with this chart. It was used by a secret society. The chart was tattooed on the throat and chest of the old man belonging to the order. The picture of the chart and the picture of the ash tree of existence are quite similar.*

The tendency to leave signs of their mythology upon the rocks and cliffs, and in the caves, was very strong among the Dacotahs. There is a belief in the Omaha tribe that before the spirit finally departs from men, at death, they float toward a cliff overhanging the Missouri, not far from the present Santee Agency, and cut upon the rocks a picture showing the manner of their death. It is said that these pictures are easily recognized by the relatives and friends of the deceased. The place is called, "Where the spirits make pictures of themselves."†

The thunder god was a being of terrific proportions. It bears the shape of a bird. There are four varieties of this bird, one is black, with a long beak, and four joints to its wings. (See Fig. 6.) Another is yellow, without beak, but with six quills to its wing. The third is scarlet, and is remarkable for having eight joints to its wing. The fourth is blue, with two plumes of

*See F. H. C. Annual Report Ethnological Bureau, p. 86. Also see Mallet's *Antiquities*, p. 100.

†This belief is common among the Omahas and among the Outlaws that the spirit returns to the grave. On this account food and water are placed at the heads of the graves. Among the Outlaws there is a little house constructed over the grave. The food is placed upon the floor within the house, while the image which shows a totem of the deceased is carved upon the gable of the house.—*Journal of Folk Lore*, March, 1880, page 11.

down for wings. When this bird flies, it is hid by thick clouds. The lightning is the flash of its eyes and the thunder the echo of its voice. The house of this god is on a mound, which stands on the summit of a hill, and opens to the four points of the compass. Each doorway is watched by a sentinel, a butterfly at the east, a bear at the west, reindeer at the north, and a beaver at the south. He is represented in the human form. His eyebrows are lines representing the sky, from which two chains of lightning zig-zag downward.

Here we have the symbolism of the sky worship which prevailed among the Zunis, but localized among the Dakotahs. Another divinity of the Dakotahs is called the "moving god." He holds the four winds. He invented the spear and the tomahawk and gave them to the Indians. His home is in the



Fig. 6. Thunder Bird.

boulders, and the boulders are always worshiped as symbols of the divinity. The stone god To-hkan is another divinity. He is the oldest god. His symbol is the Lingam. His home is the round or oval stone, about the size of a man's head. This is often painted red and covered with swan's down.

There is a round stone at Red Wing which was formerly visited by the Dakotahs and painted red as a reminder of the divinity. This stone was thrown into the water by the whites, but was replaced by the Indians. Another stone, near St. Paul, was painted in a similar way. This has been described by the Rev. H. C. Hovey. Rock inscriptions in a cave near St. Paul have been described by Mr. T. H. Lewis. One of these has the shape of an immense bird with drooping wings. See Fig. 6. This was evidently designed to represent this divinity. The feathers in the wings of this bird are drooping, and possibly may symbolize the falling of rain. There is serpent form attached to the head. This may symbolize the lightning. It was evidently designed to represent the thunder bird. A similar figure may be seen in a cave in Allamakee County, Iowa. In the same cave

are human faces, with horns rising out of the faces. In the same region are pictures of snakes, animals, canoes and crescents. In Reno cave, in Houston County, Minnesota, there are carvings to represent birds and men. One figure represents a man with large hands, to represent clouds, and a crooked head, to represent lightning, and a circle enclosed in a triangle, to represent the sun. See Fig. 7. In Lamoille cave, in Minnesota, there is a man with upraised arms. The upper parts of the arms are in the shape of plants. See Fig. 8. This was a human tree figure.

Oonktage is the god of the waters. He wears the horns of an ox as symbols of power; but has the human form. See Figs. 9 and 10. This divinity is male and female. The dwelling place of the male is the water and the female the earth. The Dacotahs offer sacrifices both to the water and to the earth. It



Fig. 7. - Lightning God.



Fig. 8. - Human Tree.

was this god which Carter speaks of as a spirit which dwells under the falls of St. Anthony, in a cave of awful dimensions. The god Oonktage taught the Dacotahs what colors to use, but Heyoka told them how many streaks to paint upon their bodies. The use of paint with the Dacotahs was always symbolic. Scarlet or red was always for sacrifice; blue was the symbol of the sky. There was no temple for worship among them. Rites of initiation and of purification were common, as among other tribes, but the details were peculiar to themselves. The initiation of warriors was similar to that of the Mandans, and the same cruelties were practiced. The medicine men were sorcerers and acted as jugglers and exorcists. There was a religious society among them that was full of symbolism. The supernatural was always present with them. Everything mysterious was called Wakan, which is identical with the Great Spirit of modern times. The animals were mingled with the human beings.

VI The Cherokees also had their culture hero. This singular people was formerly located in the mountains of north Georgia,

eastern Tennessee and North Carolina, and might be called the mountain people. They were once located on the Ohio river and were probably a branch of the Iroquois, but they were driven south by the Algonkins and became mingled with the Muscogees. Their divinities are not so well known as those of other tribes, but there is a resemblance between their myths and those of the northern Indians, and yet there was a mingling of the southern system of sun worship with their mythology. We find ourselves on the borders of another system, a system of sky worship, which was allied to that of the cliff dwellers, and yet has the characteristics of the Iroquois and the Algonkin mythologies. The best information is that furnished by the collection of manuscripts gathered by Mr. James Mooney, written in the Cherokee alphabet. Mr. Mooney says that the exposition of aboriginal religion could be obtained from no other tribe so well,



Figs. 9 and 10. Donktaghe.

for the simple reason that no other tribe has an alphabet of its own. Like the Celtic Druids, the shamans or priests found it necessary to cultivate a long memory, but among the Cherokees the alphabet enabled them to commit the record to writing. The religion of the Cherokees is animal worship, and the beginnings in which elements and the great powers of nature were deified.

Their pantheon includes gods of the heaven above, the earth beneath and the waters under the earth. The animal gods constitute the most numerous class. Among these are the great horned serpent, rattlesnake, terrapin, hawk, rabbit, squirrel. The spider was prominent; his duty was to entangle the soul in the meshes of his web, or to pluck it from the body and to drag it away to the black coffin and the darkening land. There are elemental gods, fire, water, and sun. The sun is called *unc' lamih*, "the apportioner;" the water, "long person," referring to the river.

In their myths we recognize the culture hero as a creator; also he two brothers. The earth is a flat surface; the sky an arch of

solid rock suspended above it. The arch rises and falls continually day and night. The sun is a man so bright that no one can look at him. He comes through the eastern opening every morning, travels across the heavens and disappears in the western opening and returns by night to the starting point. This story of the sun traveling back to its starting point by an underground path, is very common and wide-spread. Ellis speaks of it as prevailing in the South Sea Islands.

One story is, that here lived great snakes, glittering as the sun and having two horns on the head. The last of which was killed by a Shawnee Indian. He found it high up on the mountain. He kindled a great fire of pine cones in a circle; as he jumped into the circle a stream of poison poured from the snake. He shot his arrow into the seventh stripe of the serpent's skin. On the spot on which the serpent had been killed, a lake formed, the water of which was black.

This conception of the horned snake is very common. The Jesuits found a legend among the Hurons of a monstrous serpent, called Nuniout, who wore on his head a horn that pierced rocks, trees and hills. Dr. D. G. Brinton thinks that the tale was carried from the Creeks and Cherokees to the Hurons by the Shawnees. It may, however, have been inherited by the Cherokees from the Iroquois.* He also thinks that the horn symbolized the strength of the lightning, the horn of the serpent of the heavens, which pierces trees and rocks.

Another story is connected with Looking Glass mountain. A man whose name was "Kanati," the lucky hunter, and his wife, who was called "Selu", the corn, had a son, who was accustomed to play by the river every day. The boy told about a wild boy who called himself elder brother, and who came out of the water. The parents managed to seize this wild boy and take him home, but he was always artful and led his brother into mischief and to be disobedient. Kanati kicked the covers off from four jars in the corner, when out came swarms of bed bugs, fleas and gnats, which crawled all over the boys and bit and stung them. The boys finally killed the mother and dragged the body around in a circle. Wherever her blood fell on the ground the corn sprang up. This is the reason why corn grows only in a few places. They contended with the wolves; they ran around the house until they made a trail, except on one side where they left a small open space. The trail changed to a high fence. When the wolves came the boys passed in through the opening; the wolves could not jump over the fence; the boys took their arrows and shot those inside the fence, and afterwards set fire to the grass and bushes outside the fence and burned nearly all the other wolves.

Their next exploit was: The wild boy got a wheel and rolled

* See Myths of the New World, p. 119.

it in various directions, so as to find their father, the Kanati. The wheel rolled in the direction in which it was always night, but came rolling back. He then rolled it to the south and the north and it came back; at last he rolled it toward the sun land, and the two brothers followed it. After several days they found Kaniti with a dog by his side. The dog was the wheel which they had sent after him to find him. This conception of the wheel is very rare among the uncivilized tribes, though it was very common among the civilized races of Europe and Asia. The Basques were accustomed to roll the wheel through the fields as a symbol of the sun. There are symbols on the rocks of Arizona which resemble wheels, Others which resemble sphinxes, and there are shell gorgets in the Cherokee territory which contain circles and crescents and crosses with curved arms, symbolizing the revolution of the season. Mr. Staniland Wake has an article on the subject.

Among the Cherokees there is a story of a serpent. The conjurer, by his magic spells, coils the great serpent around the house of a sick man to keep off the witches, but he is always careful to leave a small open space between the head and tail of the snake, so that the members of the family can go down to the spring to get water. This myth seems to have been widespread, for there is an effigy of a snake in Wisconsin which marks the site of a lodge circle. This effigy is near a spring of water called Mineral Springs. The opening between the head and tail of the snake is toward the spring. There are not many of the Cherokee myths which have been identified with any particular objects of nature, though the old men who retain the myths always look back to the region from which they came, their memory associating the myth with the mountains and rivers. A fragment of the tribe still remains east of the Allegheny mountains. These identify the myths with particular spots.

SOUTH AMERICAN ARCHÆOLOGY AT THE
WORLD'S FAIR.

BY GEORGE A. DORSKY.

The collections I shall speak of are all from the west coast of South America, and include the most important localities in Colombia, Ecuador, Peru, Bolivia and Chile.

From Colombia are two collections of pottery, one from the province of Chiriqui, north of Panama; the other from Ibique and Garcia, in the Cauca river valley. These collections include only the well-known typical specimens, and contribute no new forms to those already described from these localities.

The collection from Ecuador is from the island of La Plata, a place heretofore unknown to students of South American archæology, hence of peculiar interest and value. La Plata is a small, almost barren island, about twenty-five miles off the coast of Ecuador and within two degrees of the equator. It has never been inhabited during historic times, yet the results of the excavations show that the island must have been inhabited for a long period in ancient times, or was the seat of strange ceremonies performed there by the people of the coast. Explorations were carried on at two places on the island. The first place explored was a triangular portion of ground formed by the junction of two small ravines, near the sea level. Here were found a large quantity of cut stones and potsherds. Near the center of the triangle, and at a depth of sixteen feet, was found a grave which contained two skeletons, earthen-ware vessels, gold, silver and copper images and ornaments, and a most remarkable stone ax. All of these objects are quite unlike the material found elsewhere on the island or on the coast of Ecuador, but, strangely, they are in all respects similar to that found in Cuzco, in the interior of Peru and 1200 miles distant.

The squared stones and potsherds above mentioned evidently form an intrinsic part of the material found at the other point of excavation. This was on a high, plateau-like portion of the island, about 300 yards from the triangle explored.

The cut stones average about six inches in length and breadth and two in thickness. They are marked on one side by two pairs of parallel lines placed at right angles and running diagonally across the stone. Within the lines are inscribed circles. These stones are not found elsewhere and their exact use is unknown. They are probably connected with some game. The pottery is all fragmentary, and consists principally of heads, portions of bodies, arms, legs, etc., and a few portions of jars.

The type of the pottery more generally approaches that of the Cauca valley, Columbia, but in many respects is very different. There is probably much of great interest awaiting future investigators on the island, and that which has done may be considered as the introduction to a new field.

Of the many important localities in Peru represented in the collection, I shall only mention Ancon, Iquique and Cuzco. The necropolis of Ancon is perhaps the best known and most extensive burying ground in all America. Easily reached by rail from Lima and possessed of a good harbor, the work of searching for relics rarely ceases.

It has been attempted to show a portion of the rainless, barren coast at the Exposition. Two large sections of the main floor have been fenced off, and within have been reconstructed shallow graves, in which have been placed the bundles or packages containing the desiccated bodies. Around them are the earthenware vessels and calabashes of food, work-baskets, looms, implements of various kinds, tablets, etc.

Besides these two enclosures there are four cases which show the contents of many other Ancon graves, which were in such a poor condition that it was not possible to place them in the enclosures. From these the contents of the graves can be studied in greater detail, for not only can the objects found inside the wrappings be seen, but from the skeleton the sex of the occupant of the grave can be determined.

From such data it will be possible to work out much entirely new concerning a most interesting field. Some of the results already obtained are very interesting, and are generally such as we might expect to find. I can only mention some of the more important. The women are generally buried at a greater depth than the men, and more often are their graves covered with a roof. This roof is about seven feet square, made of reeds and supported by sticks of Algaroba. The objects accompanying the men are war-clubs, agricultural implements, slings, tablets and the llama and dog. Those peculiar to the graves of the women are work-baskets, containing spindles, thread, wool and cotton, looms and other implements employed in weaving or manufacturing garments.

Earthenware vessels and calabashes of food are common to the graves of both sexes, and furnish us some insight into their means of sustenance, and, further, an additional standard to gauge their height in civilization. Corn and beans are found in almost every grave, while peanuts, dried fish, crabs and many kinds of dried fruit are not uncommon.

The degree of skill reached by these people in the art of weaving is little short of marvellous. Garments woven after the manner of the celebrated Gobelin tapestry are frequently met with as well as specimens of embroidered and printed cloth. Two looms were found, containing partially completed products,

while incomplete spindles of thread are found in great quantities. Indeed there is nothing wanting to tell us the complete story of their daily life; more complete, perhaps, than that of any other ancient and bygone race on the American continent.

Another of the important localities represented is Iquique, now a city in Chile, but from the archaeologist's standpoint, a part of Peru. This collection, so far as I know, is the only one to be found in this country. While not at all extensive in amount, the Iquique case takes place in prominence along side of Ancou. Only three graves were found, but they yielded twelve very badly decayed mummies, or more properly, skeletons. The graves were quite shallow and roughly made, and the bodies had been covered with large pieces of skins. The accompanying objects show that the ancient people of Iquique lived principally upon fish and corn. The series of fishing implements is very complete and interesting, and contains both wooden spears with well-made flint points and curiously made hooks of bone with a double cactus spine barb. Several well-made lines were also found, and oblong sinkers and copper hooks.

Perhaps of greater interest are the rude round bows and arrows. These are not found north of Iquique. Of the remaining objects found in the graves I can only mention, the baskets and pottery, sandals and head bands, paint boxes and pigments, dried fish and double bladed paddles of three pieces.

The other locality of Peru yet to be described is Cuzco. In connection with the collection made by the department in this region, mention should be made of the very valuable and interesting material collected and exhibited in the Anthropological building, by Señor Emelio Montes. This gentleman is a resident of Cuzco, and has devoted his life time to the collection of the antiquities from the principal seats of power near the old Inca capitol. His collection is invaluable and deserves careful study. The burials of the Cuzco region were not made in the ground as on the coast, but in caves, either natural or artificial, in the sides of the mountains. Fortunately for us the same custom of burying the objects of the owner with him prevailed as on the coast. I shall speak only of three classes of objects, stone, copper and earthenware. The first group is of most importance, as scarcely any objects of stone are found on the coast. Here, however, they found a considerable portion of the domestic and warlike implements. The collections include many metates or mortars and pestles. Some are beautifully made of hard colored stone and decorated with serpents or heads of pumas or llamas. Another common object is the stone spindle whorl, and there are many stone knives, hatchets and star-shaped objects which were mounted on sticks and used as war clubs. The collection of Señor Montes contains numerous beautiful small idols of turquoise, lapis lazuli, and other hard stones.

The copper objects include knives, hatchets, spindle whorls, shawl pins, plates, idols, etc. Probably the most curious objects of copper are the long ear ornaments, made by fastening a round bar of copper into a disk of two inches diameter.

Nowhere in all Peru is such beautiful pottery found as in Cuzco. It is remarkable both for its graceful form and its pure, simple decoration. One piece in the Department has been greatly admired and is perhaps the most beautiful vase ever brought from Peru. It is of the typical Cuzco shape, with an inverted conical base, elliptical body, and long, graceful neck. The decoration consists of concentric squares made of triangles of different colors, and done in such a manner as to resemble the most delicate mosaic work. Mention should be made of several vases of wood, carved out of a single piece of wood. An animal's head, generally a puma or llama, is often worked out on the side, and the whole is painted in geometrics or allegorical figures, and gives the appearance of having been inlaid.

Peru is a wonderfully rich country for the archæologist, and nature has assisted most materially to preserve for us the most delicate fabrics as well as the fortresses and temples. The collections tell only a part of the interesting story of the ancient Peruvian. There are yet many localities, containing equally rich and instructive material, awaiting the future investigator.

ON THE WORDS "ANAHUAC" AND "NAHUATL."

BY DANIEL G. BRISTON, M. D.

These two words are of constant occurrence in works about Mexico, Anahuac being used in a general way to signify the country, as in the phrases, "The ancient empire of Anahuac," or "The plateau of Anahuac;" while the principal language of its inhabitants, sometimes called Aztec or Mexican, is now generally spoken of among scholars as the Nahuatl, and those who use it are referred to, by the plural form of the same word, Nahuas or Nahuas.

A learned writer, Dr. Edward Seler, has recently challenged the correctness of the term, Anahuac, in this sense: claiming that originally it had no such signification, but was introduced into Spanish through a blunder of one of the early missionaries, brother Toribio de Benavente, better known by the Nahuatl name he adopted, Motilnia, or "The Poor Man;"¹ while the employment of the word "Nahuatl" for the tongue in general, and "Nahuas" for those who spoke it, has been questioned by several writers, and was rejected by Buschmann in his monumental work in favor of "Aztec" and "The Aztecs."²

It seems worth while, therefore, to submit these words to renewed analysis, to ascertain their precise original sense, their relationship, if any, and the propriety of their employment with the connotations I have alluded to.

Let us begin with *Nahuatl*. That venerable fountain of knowledge about ancient Mexico, the history written by Father Sahagun, has a section headed, "In this it is explained who those were who called themselves Nahuas." It begins with these words: "The Nahuas were those who spoke the Mexican language, although not pronouncing it like true Mexicans. They called themselves Chichimecs, and asserted that they were descended from the Toltecs who remained in the country after their compatriots were exiled."³ In another passage it would appear that they spoke a dialect superior to that of the Mexicans proper, for the writer says, "Those who to-day speak clearly the Mexican language and are called *Nahuas*, are the descendants of the Toltecs."⁴

A still more ancient and trustworthy authority corrects in this the Spanish historian. I refer to the document known as the

¹ See his article, "Sur le mot 'Anahuac,'" in the *Compte Rendu* of the Congrès International des Américanistes, VIII Session, p. 686.

² Über die Spuren der Aztekischen Sprache in nördlichen Mexiko und höheren Mexiko, p. 10.

³ Sahagun, *Historia de la Nueva España*, Lib. X, cap. 20.

⁴ Ibid. 11.

Codex Ramirez, an historical account of the native tribes taken down shortly after the Conquest, directly from their pictured records. It starts off with these words: "The Indians of this New Spain, according to the uniform statement of their own histories, proceed from two different nations. The first of these they call the *Nahuatlaca*, which means 'people who speak intelligibly and clearly', by this distinguishing themselves from the second nation, one of barbarous condition, living by hunting, to whom the *Nahuatlaca* applied the name *Chichimeca*, hunters, or, as another name, *Otomies*."¹

In the *Codex Ramirez* the whose story of Tula and the Toltecs dwindles into an episode in the history of the tribe Mexi, and all the Nahuatl-speaking nations are embraced under the term *Nahuatlaca*, a compound of *Nahuatl* and *Tlacatl*, people, the plural of which is *Tlaca*.

This generic sense of the word was also adopted by that very respectable authority, Geronimo de Mendieta, who, in his Ecclesiastical History, defines it to include "the Mexicans and all the tribes who speak their language."² His copyist, the Franciscan Torquemada, muddles the matter somewhat, as he often does, leaving the impression that the *Nahuatlaca* were confined to the valley of Mexico; but he is always a second-hand authority.³

Nahuatl, therefore, must stand as the stem from which the *Nahuatlaca*, "the Nahuatl people," derive their appellation. In an abbreviated form they are also called by Sahagun *Nahoas*, and by Mendieta *Nahuas* and *Nauales*.⁴ It was undoubtedly also the sole and genuine name of their language as a linguistic unit, as Buschmann frankly acknowledges, though for certain reasons he preferred another.⁵

What now does *Nahuatl* mean? Is it a radical or a derived expression? All previous writers have accepted it as a radical of the language, and have contented themselves with quoting the rendering of it given by Molina in his dictionary: "*Nauatl*, something that sounds well, as a bell, etc.; or, an accomplished man."⁶

All have seen in it a primary reference to the language, as one which is sonorous, or agreeable to the ear, or intelligible to those who speak it. Here, I believe, they have committed a grave error, and quite misunderstood the purport of the name. It is easy to see from a comparison of allied words from the same root that the original sense of *Nahuatl* is something much more important than this.

¹ *Codice Ramirez*, ed. Mexico, 1878.

² "Los Mexicanos y los que participan su lengua." Mendieta, *Ecclesiastica Indiana*, p. 90.

³ Torquemada, *Monarquia Indiana*, Lib. III., Chap. X.

⁴ "Mexicanos o Nauales." Mendieta, u. s. p. 128.

⁵ "Nahuatl ist der echte und einfache Name für das Aztekischen Idiom." Buschmann, *Ueber die Aztekischen Ortsnamen*, s. 742.

⁶ "Hombre ladino," literally, a Latinist, but applied to educated and accomplished men generally. Molina, *Vocabulario Mexicano*, s. v. Biondelli translates it *expers lingue*. *Vocabularium Aztecum*.

We have, for instance: *Nauatia*, v., to command, to give permission, to govern inferiors; *Nauatile*, v., to have authority or command; n., an authorized person, one holding authority; *Nahuatlili*, the acknowledged laws and ordinances of the state, and the books in which they were written.¹

From these come the words: *Nauati*, to speak clearly and distinctly, to explain; *Nauatlato*, an expounder or interpreter. The sense of *Nahuatl*, therefore, is "to speak as one having authority or knowledge," and hence, superior, able, astute (as Simeon has to some extent recognized in his dictionary).² The trivial meaning of well-sounding, or sonorous, is a later development of the connotation. We thus reach the real sense of the appellation, *Nahuatlaca*. It is "the Superior People," "the Commanding People." Those who bore it applied it to themselves out of a feeling of that national pride and tribal egotism which has been the parent of so many such self-laudatory appellations the world over.

Can we trace this radical still farther back in its history? I believe we can, and that we can show that it was not a genuine property of the great Uto-Aztec stock of tongues, but of some other, to the south of it, the Zapotec or the Maya. The evidence of this I have collected elsewhere, and shall not repeat here. If the supposition is correct, it would have this corollary—that the patronymic *Nahuatlaca* was not adopted by the people who applied it to themselves until some time after they had settled in the valley of Mexico, and had acquired some important elements of their culture from their neighbors of Zapotec and Maya lineage.

So much for the *Nahuatl*; let us now turn to *Anahuac*. Here the problem is considerably more complicated. I will first attack the crucial question proposed by Dr. Seler: Was it as a geographical term, employed by the *Nahuatlaca* themselves, to indicate the territory in, and indefinitely around, the valley of Mexico, so that their example would justify us in speaking of "the Plateau of Anahuac," and so on?" Dr. Seler denies this. He declares that any such use of the word "is absolutely false, and, more than that, illogical"; that it means "by the side of the water", and could not be so applied; and that the worthy Father Motolina, to whom he traces the responsibility in introducing the term, was not much richer in his knowledge of the Nahuatl tongue than he was in name or in worldly goods. Moreover, Dr. Seler suspects that the Jesuits have had a hand in this matter, and have darkened the truth about it. He is willing to recognize an *Anahuac*, "by the sea," on the coast of the gulf of

¹ On this word see Simeon, *Annales de Chimalpahin*, Introd. p. 7.
² I should have said so. *Dictionnaire de la Langue Nahuatl*, sub voce. I should add that the word of the *A* in these words is practically nothing. It is inserted by some writers not as an aspirate, but simply to indicate that the two vowels are to be given their full value in pronunciation.

Mexico, and another, "by the sea," on the Pacific; but none in the interior.

It appears to me that Dr. Seler can not have carefully read the passage in Motolinia's History to which he refers. It is a remarkable paragraph, revealing to us the primitive geographical notions of the ancient Nahuas, and illustrating the extraordinary similarity of their conceptions of the physical world to those in vogue among the northern hunting tribes and among many of the early geographers of the Old World.

I translate it from the first Treatise of Motolinia's History, as follows: "The proper and general name which they (the Nahuas) have for this World is 'the great Earth encircled and surrounded by water,' the particular and special meaning of which is 'World'. * * * When speaking of the whole World in this language they call it *Cemanahuac*, a compound of *Cem* and *Anahuac*. Here, *Cem* conveys the idea of union or conjunction, as if we were to say, 'The whole united Anahuac.' Further, this word is a compound of *atl*, water, and *nahuac*, within or round about, that is, something which is within or encircled by water; therefore, as they hold that all the earth, or the World, is within its shores, or surrounded by the water, they speak of it as *Cem-anahuac*, which properly includes every created thing beneath the heavens, without distinction; such being the real force of the syllable *Cem*."

It will be noticed, in the first place, that in this passage Father Motolinia says nothing about the question whether the natives used the word Anahuac as a designation of their own country. He is explaining their general cosmical notions, and it is very interesting to find them identical with those which in one of my works I have shown to be prevalent among many other American tribes. Dr. Seler's criticism on this passage is, therefore, quite wide of the mark.

But I do not take refuge in this. It is quite true that in several passages, some quoted by Dr. Seler, Motolinia distinctly writes the name Anahuac as synonymous with New Spain; he says, in various places, "This land of Anahuac or New Spain;" and there is no gainsaying his responsibility for this. He leaves it clearly to be inferred that while the expression *cem anahuac* means terra firma, in general, *nahuac* by itself meant, of course in a general and vague way, consistent with their defective geographical knowledge, the country of the Nahuas.

There is certainly no reason why *Anahuac*, in its ordinary sense of "near the water" or "the waterside," should not have been applied to the land about the lakes in the valley of Mexico from the first moon in which a Nahuatl-speaking people came into that valley. Buschmann¹ justly remarks that they doubtless

¹ Ueber die Aztekischen Ortsnamen. S. 615.

made use of it in that region long before they ever saw either the Gulf of Mexico or the Pacific Ocean. They would naturally extend it, as their own borders extended, to take in a territory of more or less circuit, not bordering nor in sight of the lakes. Geographical appellations constantly grow in this manner. How small was the area once included under the names Britain or Italy!

But, fortunately, we are not left to conjectures and speculations about this. We have in print, in good Nahuatl, written down by a native in the sixteenth century, what his ancestors understood under the term *Anahuac*, and this settles the question. The quotation I give is from the *Annals of Chimalpahin* (Ed. Siméon, Paris, 1880).

With reference to the death of the chief of the Mexi, Quetzal Mazatzin, which took place in 1410, he writes: "As soon as this became known, the Cholotecs of Totomihuacan, the Tlaxcaltecs, the Tlilulquitepecs of Huexotzinco, the Quauhxecholtecs, the chiefs of Itzcoan, of Tetzcuco, of Xochimilco, of Totollapan, of Quauhnahuac, of Culhuacan, of Tullocan, of Atzcaputzalco, of Tenanyocan, of Qquauhtitlan, of Teocalhuiaacan, of Matlatzinco, of Mazahuacan and of Yiquipilco fell into great anger, and said, 'Let us ally ourselves against these Mexicans; let us declare war against them for having driven out the chiefs of Chalco. Are not the people of Chalco our protectors?' By this appeal the chiefs of *Amatlan* summoned each other from all parts." PP. 85-6.

In the course of the narrative the chiefs of these confederated nations are constantly referred to as "the chiefs or lords of *Amatlan*, *Tlahtoque yn Anahuaca*, and, *yn Anahuaca Tlahtoque*."

There can be no reasonable doubt but that Chimalpahin repeated faithfully the traditions and forms of his ancestors; and thus the geographical and historical propriety of the use of *Anahuac* to designate the interior of Mexico, or Mexico as a whole, is fully vindicated by aboriginal authority.

There remains for further analysis the term *Anahuac* itself. Of course its composition, as given by Motilinia, is, *atl*, water, dropping, as usual the *tl* in composition; and *nahuac*, a familiar postposition meaning near, by, alongside of, round about. But there is a curious similarity between this *Nahuac* and *Nahuatl*. Moreover, the early lexicographer Molina gives the very word, *Cemanahuac*, the World, also under the form, *Cemanahuatl*. Is it possible that there is some occult connection or identity between the locative postposition, meaning near, around, within the compass of, and the adjective which we have seen signifies "able, skillful, or superior?" The bridge which I shall endeavor to erect between them may seem a hazardous one, but I think its buttresses are firm. The root of *nahuatl*, meaning able, skillful, superior, is the monosyllable *na*, which in several closely located linguistic stocks in Southern Mexico means, "to know,

knowledge." The man possessed of knowledge is everywhere he who is able. He *can*, because he *kens*. There is no need to teach the world the Baconian maxim: "Knowledge is power;" it is always recognized.

Knowledge is always that which is within the mind, within the self; it is the nearest what there is to each one's own personality. Hence, we find that in these same stocks—I refer particularly, though not solely, to the Nahuatl, the Zapotec, and the Maya—the independent pronoun of the first person I is also closely akin to this root *na*.

In the Zapotec it is quite the same, *na*, I; *nia*, mine. In the Nahuatl, *ne*, I, separable; *ni*, I, in composition; *no*, mine. The Maya is more remote, but preserves the consonant; *en*, *in*, *ten*, I. But let us take the Zapotec. Here the verb "to know," is a reduplication of the first person of the personal pronoun, *na*, I; *na-na*, to know, literally, "my mine," that which is with me, essentially mine. It is absolutely the same in the Huasteca dialect of the Mayan stock.

Now it has long been recognized that in many languages the difference in the three persons—first, second and third—is in its origin nothing else than a difference in direction; that the personal pronouns are, in fact, adverbs of place, "I" and "mine" referring to what is nearest, "thou" and "thine" to what is more or less remote in comparison. They belong to what Steinthal calls the class of "demonstrative," in contrast to "qualitative," roots.¹ So true is this that in some languages there are three forms of the pronoun of the third person, expressive of the person being near, rather distant, or very distant.² That this is notably the case in the Zapotec has already been pointed out by Dr. Seiler; and this accounts for the parallelism which finally leads to identity in the radicals of the words *Nahuatl* and *Nahuac*.

And finally, lest I should be charged in offering such an etymology, either, on the one hand, to have taken an unsupported and whimsical position, or, on the other, to have borrowed without acknowledgement the suggestion of an earlier and a distinguished writer, I close with the words of Buschmann: "From the word *Nahuatl* was derived, in my opinion, the postposition *Nahuan*, and into *Nahuatl* we see it afterwards return."³

¹ Steinthal, *Lehrbuch der Sprachwissenschaft*, 2. Aufl., p. 125.
² Ruge, *Die Natur der Sprache*, p. 107. *Nature of Language*, in the *Museum*, 1888, p. 1.
³ *Compendium der Eingegriffenen Sprachen*, in the *Verhandlungen VIII Session*, p. 154.
⁴ *Die Sprache der Nahuatl*, in the *Verhandlungen*, p. 154.

Editorial.

FRANCIS PARKMAN.

Francis Parkman, the eminent historian of the French settlement in America and the war with the English colonies, died at his home on Prince street, Jamaica Plain, Boston, Mass., on the afternoon of November 9. His last sickness was brief, peritonitis being the cause of death. It was only recently that he celebrated his seventieth birthday in an unostentatious way. His home on the south bank of Jamaica pond was one of the most beautiful residences in the suburbs of Boston, and it was here that he did his best work in his last days. He was born in Boston September 16, 1823. His father, Francis, and his great-grandfather, Ebenezer, were distinguished clergymen. His mother was a descendant of the Cotton family. In 1850 he married, when twenty-seven years old, the daughter of Dr. Jacob Bigelow, of Boston, who died in 1858, leaving two daughters. His first book, "The Oregon Trail," was published in the year 1847. His second book, "The Conspiracy of Pontiac and the Indian War after the Conquest of Canada," was published in 1851. His third book, a novel, is not generally known. It was called "Vassall Morton," and appeared five years after his first history. In 1866 he published his "Book of Roses." For a long time the thought of writing the history of the early French settlements in America was ever present with him, and after the death of his wife he again visited Europe for the purpose of gathering material for his work. In 1866 "The Pioneers of France in the New World" appeared, and two years later "The Jesuits in North America in the Seventeenth Century," and in 1869 "LaSalle and the Discovery of the Great West." During the following five years he was engaged upon "The Old Regime in Canada," which was published in 1874, and in 1877 "Count Frontenac and the New France Under Louis XIV." was issued. After a lapse of seven years, in 1883 appeared "Montcalm and Wolfe" in two volumes, dedicated "To Harvard College; the alma mater under whose influence the purpose of writing it was conceived." By European scholars he was regarded as the first of American historians.—*Chicago Inter-Ocean.*



ARCHÆOLOGICAL NOTES.

INDIAN LANGUAGES.—A paper was read by Mr. J. N. B. Hewitt, at the meeting of the A. A. S. at Madison, on Polysynthesis in the Indian languages. The author lays down several principles which are radical to the most of these languages. Among these are, *First*, The use of prefixed personal pronouns. *Second*, Only two stems can be combined in a word sentence, an

these must be not of the same parts of speech; *Third*, The verb and adjective must be placed after, and never before the noun, when they are combined; *Fourth*, An adjective cannot be combined with a verb; *Fifth*, A qualifying word must not be interposed between two combined stems, but must be prefixed or suffixed. The author takes the ground that the holophrastic method is not so common as has been supposed, that there is syntax in these languages as in others, the agglutinative quality may have been overrated. Let us compare Mr. Hewitt with Albert Gallatin. He says, that the pronoun was the most important part of speech; *First*, All inflections are pronouns which represent the agent and the action of the verb; *Second*, That variations of nouns expressed animate and inanimate, as well as male and female. There were three numbers, singular, dual and plural; *Third*, There were two sorts of verbs, substantive and active. There were verbal adjectives which were conjugated as well as declined; *Fourth*, The manner of compounding words by writing the abbreviations of five or six, or more words was almost universal. The flexibility which would convert any part of speech into another, and which produced a multiplicity of forms and concentrated complex ideas into a single phrase or holophrastic word, was a striking characteristic of the Indian language. Mr. Hewitt's view is a novel one. We shall publish an answer from Dr. D. C. Brinton in our next number.

THE DACOTAH, CHEROKEE AND IROQUOIS TRIBES. The editor of the AMERICAN ANTIQUARIAN has made the statement that the Dakotahs belonged to the same stock with the Iroquois and Cherokees, and has quoted Gallatin as favoring this opinion. Dr. Horatio Hale corrects the statement, and defends Gallatin. Now, as we read Gallatin's synopsis again we find that he does not commit himself, but quotes Barton as authority on the affinity of the Cherokees and Iroquois, and makes no special statement as to the Dakotahs. He speaks, however, of the Tuteloes, a branch of the Dakotahs, as formerly situated in North Carolina, and says that they migrated to the north and joined the *Algonquins* in 1738, as one of the younger members of the confederacy. Our position, based upon tradition and archaeological evidence, was that the Dakotahs came from the same swarming center, with the Cherokees and the Iroquois, namely, the head waters of the Ohio, the forks of the Allegheny and Monongahela. Our conjecture was, that the Dakotahs reached this point by migrating northward from Florida, and the assertion of Dr. Hale, that the Dakotah language was not related to the Iroquois and was related to the Tuteloes is sufficient warrant for us to lay the route down as a certainty. The evidence that the eastern Dakotah language is older in form than the western coincides with the archaeological evidence that the empy builders, who were serpent worshippers, preceded the circle builders, who were sun worshippers and villagers. The Tuteloes were in 1738, tall, likely men, having plenty of buffaloes and every sort of deer among them. The Iroquois said of them, in 1743, "We have had so inveterate an enemy we are willing to receive them into peace and forget all the past." Dr. Hale's conjecture that the eastern Dakotahs followed the buffaloes along the Big Sandy to the west of the Alleghenies, and so on to the region west of the Mississippi, is confirmed by the study of the empyes. The incorporation of the last fragment of the tribe with the Iroquois is explained by the above quotation. Dr. Hale's correc-

tion does not refute, but rather confirms the point which we made as to the migrations of the Dakotas from the east to the west. As to the Cherokees, the evidence is that they migrated from the north southward after the time that the Dakotas migrated westward. In this the testimony of language and of archaeology is the same.

THE SHAWNEES were the Phœnicians of America. They did not originate any cult of their own, but were constantly borrowing. They were great wanderers; they began somewhere in Michigan, went south to the Ohio, wandered over the mountains to North Carolina, came north to Delaware and went back to Ohio again. Dr. Cyrus Thomas thinks that they may have built the stone graves in Tennessee, placed the copper figures in the Etowah mound in Georgia. He ascribes to them the modern looking figures which have wings issuing from the shoulders, after the pattern of angels; he says whatever traces there are of Mexican ornaments and symbols in these mounds were derived from the Spanish miners. It is too early in the process of investigation for us to ascribe all these tokens to the Shawnees, but it does not conflict with any position which we have taken in reference to the antiquity of the Mound-builders. If we grant that the modern-looking relics were placed in the pyramid mounds by Shawnees, then those remarkable relics which attracted so much attention at the World's Fair, which came from the Hopewell mounds, may have been placed there by the Shawnees. Many of these relics were in the shape of disks, called ear-rings, or spool ornaments, which were covered with a plating of silver and were very uniform in size and shape as if they had been stamped. The mica ornaments looked as if they might have been cut with shears and were made in modern patterns. The copper plates which resemble trefoil ornaments and European medieval symbols of the cross, were very likely to have been made by some white man, perhaps by some Dutch trader; they are not of the native American type. This but complicates the Mound-builders' problem, and yet, by no means, overthrows the position that there was a Mound-builders' age. It only makes it more important that we should separate the prehistoric from the prehistoric relics, and that we study more definitely the Mound-builders' cult as distinguished from the Indians' cult. The Trojan theory has brought great confusion into the problem; its advocates need only to cut off debate and the whole subject will become obscure.

ATLANTIC AND PACIFIC TOKENS. The position which Dr. CYRUS THOMAS now takes in reference to the western tokens, as having received an "impress" from Polynesia or from Eastern Asia, is one which we readily endorse, though the Pacific coast presents two or three distinct areas which furnish different types of art. The Atlantic coast shows no such evidence of Asiatic impress. Whatever there is must have come from Europe, rather than Asia. This, however, does not conflict with the opinion of the linguists in reference to the unity of the language, for the race and language may have been one, and yet the art, forms and symbolic types may have been many.

THE TURKIC. The linguists seem to be divided as to the use of this word. The American linguists, such as Dr. Hale and Dr. Brinton, make the language identical with the Siberian-Finnic, while the Orientalists, including Rev. Dr. A. H. Sayce, Dr. J. C. Black, and many others, make it

include the Malay and Mongol tongue, and identify it as the ancient Accadian and make it the language of the so-called *ground race*.

THE RED INDIAN. In our work on the Mound-builders, we took the position that the pottery not only furnished the portraits, but also showed the color, of the people who made them. We are satisfied that this is the case. The editor, in his childhood, was accustomed to recognize different tribes mainly by the color. A Winnebago was very different from a Pottawattamie, a Monomonic very different from an Oneida Indian. These we now know belong to different stocks. The examination of the different tribes which were brought together at the World's Fair convinces us that the common idea that the Indians were all of a red race, was a mistake. The Algonkims were a red race, and this has given the impression that all the Indians were the same color, but the Cherokees were always described as having light complexions. The Dacotahs differed from the Algonkims in color as well as in form. The color and other peculiarities are becoming blended, distinctive traits lost. Did any one see a red Indian at the World's Fair?

THE PULLMAN STATUE at Chicago has been criticised, and justly, too. A Sioux Indian was taken as a model for the statue, whereas a Pottawottamie should have been taken. This is like taking the French commander, Napoleon, as a model for the statue of the Spanish discoverer, Columbus, or the Duke of Wellington for Garibaldi.

The narrative of the chief, Pokegan, the survivor of the Chicago massacre, has been published in the *Inter Ocean*. He claims that it was not a massacre, but a battle, yet speaks of the Indians having become frenzied by the whiskey which was thrown into the river, but was seized and drank in that shape. The Chicago river proving bad enough at that time to exterminate the whole settlement. He claims that there were cases of rescuing white women and children by Indian braves, but there had been no grateful recognition of the fact by the whites who were rescued or their friends. Two Englishmen, who were visitors among the Pottawattamies, incited the Indians to the massacre.

THE CLIFF DWELLERS' concession on the World's Fair grounds has been criticised as unreliable. It probably was so, but could it have been otherwise? The technicality of a scientific exhibit reduced to a scale of inches would not have interested the public. As it was, however, the concession did interest. It was scenic and intended to be such. The paintings hidden away in the caves were very good. The relics contained in the cabinet were excellent. The general plan was as good as it could be made under the circumstances. Mr. H. J. Smith, with the aid of Mr. Hayward of Minneapolis, are deserving of great credit.

AMATEUR COLLECTORS have an important mission, now that the discredit occasionally thrown upon them by specialists. They have served a good part for science in collecting cliff dwellers' relics and making their habitations known. The Wetherells of Colorado are amateur collectors, they have served a good part for science. Mr. Edward Ayres, of Chicago, is another amateur collector. He is a business man, engaged in the work of selling ties to railroads, by the trainful, but he has a splendid collection of relics and a fine collection of rare books. It was owing, in great measure, to his interest in archaeology that the citizens of Chicago were led to organ-

ize and establish the Columbian museum. The technicalities of the science may be well committed to specialists, but certain of the business men who have a general acquaintance with the resources of the interior, in the line of archaeology, as well as of geology, are to be commended for their efforts in this direction. The west has suffered too much and too long from the neglect of its own interest. Archaeological relics have been given away without stint, and eastern institutions have received the benefit. A western man, if he would become acquainted with the relics which were taken from the mounds or from the cliffs, must go to Washington or Boston, for he would find very few of them in the west.

GIFTS TO THE MUSEUM. A million of dollars has been bestowed by Marshall Field, the merchant prince of Chicago, on condition that \$2,000,000 of stock be given. A large proportion of the articles that were in the Anthropological building will go into the new museum, including the Wyman collection of Mound-builders' relics, mainly from Wisconsin; the Smith and Murdoch collection from Ohio; the Dorsey collection from Iowa; and many others.

WESTERN ARCHAEOLOGISTS. The number of institutions which surround Chicago within a radius of two miles will surprise any one who has not known about them. These institutions are full of bright, active young men, many of whom will become specialists in different departments and will probably remain at the west. Heretofore a specialist, if he was to do any work in the line of original investigation, must be connected with some eastern institution, either the government survey, the Ethnological Bureau, the Smithsonian, or Peabody Museum, or Columbia College. Western men have been continually called to the east. Nearly all of the prominent geologists and archaeologists in Washington are western men. A few have remained at the west, but were connected with the surveys at the east. Those who were not, have had great difficulties to contend with, for there was a constant tendency to draw to the east not only the relics and the workers, but even the contributions to magazines and perhaps unconsciously to some of the work which was done at the west by any private investigator or by any private journal. It is remarkable, however, that the largest number of books upon archaeological subjects have been written by western men who are not connected with the surveys and institutions, though the most valuable reports have been published at the east. A very large number of the contributions to the eastern journals have been from western men, while eastern men have continued to send their contributions freely to the *AMERICAN ANTIQUARIAN*, which is the only journal published at the west. It has been a great encouragement that gentlemen of all sections have for fifteen years coöperated so freely in sustaining it. For this we are grateful. There should be no east or west in the department. We need the united scholarship of all parts of the country to carry it out. While the libraries, cabinets and institutions are in the east, the field is in the west. Eastern men must come west if they are to study the field, and so coöperation is a necessity. Western men need to interchange thoughts with the specialists at the east.

DR. TOPINARD IN CHICAGO. The visit of Prince Napoleon Bonaparte and Dr. Topinard, of Paris, to Chicago was early in the season, in March and April, before the exposition was really ready. These gentlemen did

not get as good an impression as they would otherwise have done. It might have been better if they had waited until the Congress of Anthropology. They would have at least seen a few of the specialists and learned about the new points in archaeology which were before the Congress. In the department of Folk Lore they would have learned many new things, possibly in ethnology, though the view of the different tribes in their modernized costumes did not quite satisfy American students. The latest phase of the paleolithic question was brought out, without any one to present the other side. Perhaps these Europeans would go back to revolutionize the science of paleolithics in their own country; perhaps not. The subject is very new here, and is liable to undergo another change before the voyage to Europe would be completed.

WE will correct the statement made in the last number of this magazine in reference to the foreign visitors to the Congress of Anthropology. There were several gentlemen present while their papers were read. Among them were Dr. Matthews, of England, Dr. M. A. Muniz, of the Peruvian army, who had a fine collection of skulls; Dr. Carl Lumholtz, who spoke of the cave-dwellers of the Sierra Madre; Mr. Richardson, of Cape Town, on the ethnography of South Africa, Mr. Wildman, on the culture of the Malay peninsula; Dr. Emil Hassler, on the ethnology of Paraguay, who exhibited native leather work from that region, Mr. A. Parry on the Calendar Stone of Mexico, and others.

TREPANNING. The paper by Dr. Muniz, on trepanning, was briefly discussed. The editor took the position that trepanning during life must not be confounded with the perforating of the skull after death. The first may have been for the relief of disease, the last from superstition, to let the soul out. The same conception may be at the basis of both, for disease was a spirit which must be let out, or taken out in some way. The effort of the medicine men was to drive it out. The same superstition prevails in Africa and the South Sea Islands. The heads of idols are sometimes perforated to let the soul out.

THE MEXICAN CALENDAR. The paper by Mrs. Zelia Nuttall attracted much attention. Mr. L. H. Cushing said that the symbolizing of the days of the ceremonies in an orderly succession corresponded to the phases of the sun and moon throughout the year. These ceremonies were conducted by the priests of Zim, who were members of the thirteen successively graded cult societies. This would account for the thirteen and twenty which Mrs. Nuttall discovered to be characteristic of the Mexican calendar. Thus another connecting link between the Zimés and the Aztecs has been furnished.

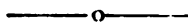
THE GREEK THEATRE. The *Journal of Philology* for April, 1892, has an article on the position of the actors in the Greek theater of the fifth century, B. C., by John Pickard.

THE INDIAN STORM GOD. *Journal of American Oriental Society*, for 1892, Vol. XV, No. 2, has an article on India, the storm god, and the demon Namu, by Morris Bloomfield.

CIRCLES AND AVENUES IN WALES. Mr. A. L. Lewis has been publishing a series of articles on the standing stones of Great Britain. The most of

these are made up of circles and avenues. They are as follows: Circles at Avebury Stone Henge. There are also circles and avenues in walls in Wales. In one called Cerrig y-beddau, which is forty-one feet in diameter, and an avenue ninety-one feet long, and another earthwork called Castell Brogyntyn. It is a regular circle, fifty yards or so across, contained within a bank of earth from four to six feet high, outside of which is a ditch.

LEWIS AND CLARKE. The Proceedings of the Philosophical Society for January, 1893, contains an account of the original manuscript of Lewis and Clarke, now in possession of the society, by Dr. Elliot Coues. Also a vocabulary of the Kwakiutl Indians.



BOOK REVIEWS.

Eighth Annual Report of the Bureau of Ethnology, 1896-97. By J. W. Powell. Government Printing Office, Washington. 1897.

This report is composed of two very important monographs. The first is entitled a Study of Pueblo Architecture and Tusayan and Cibola, by Victor Mindeleff, second, a Ceremonial of Hasgeeti Dalgis, and Mythical Sand Paintings of the Navajo Indians, by James Stevenson. They are both splendidly illustrated and convey a vast amount of information. The Ethnological Bureau is certainly worthy of all the support which it gets from the government, for it is accomplishing a vast amount of work, work that could be carried out in no other way, and which needs to be done now, before there is any further invasion of the despoilers into this region. The interest in the cliff dwellers has increased within the past few years. Those who secure this volume will form a pretty clear idea of the Pueblos and of the changes which have occurred in their location during the past three hundred years. The description is confined to one particular locality, but the reader will have the opportunity of comparing the structures here and elsewhere by taking the different reports which have been published.

The Pilgrim in Old England. By Amory H. Bradford. New York: Fords, Howard & Hulbert. 1893.

The Pilgrims were the first settlers at Plymouth, Mass. They differ from the Puritans, who settled in Boston. It was the landing of the Pilgrims in 1620 that has made the date celebrated. This book is made up of various lectures before the students of Andover Seminary. It gives the principles which were early adopted by the Pilgrims, and for which they contended so strenuously. These principles were transferred to this country after their stay in Holland. The book is a history of their beginning in Old England. The author is a pastor of the church at Mount Clair. He was recently called to be the pastor of one of the largest churches in London. The publishers are well known and have furnished a very attractive book.

Nature, the Supernatural and the Religion of Israel. By Josiah Gilbert. New York: Hunt & Eaton; Cincinnati: Cranston & Curtis.

The first two chapters of this book are very suggestive. They show great originality, and it is a pity that the book could not have been carried out in the same line, for it shows the principles which lie at the basis of nature. The principles may have been exercised in the history of the Israelites, but

