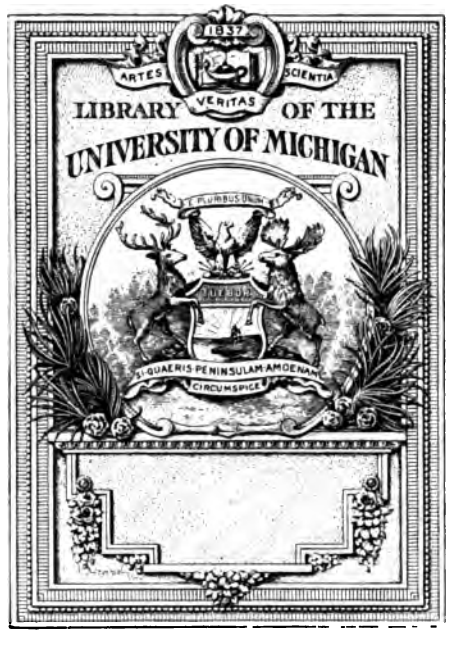
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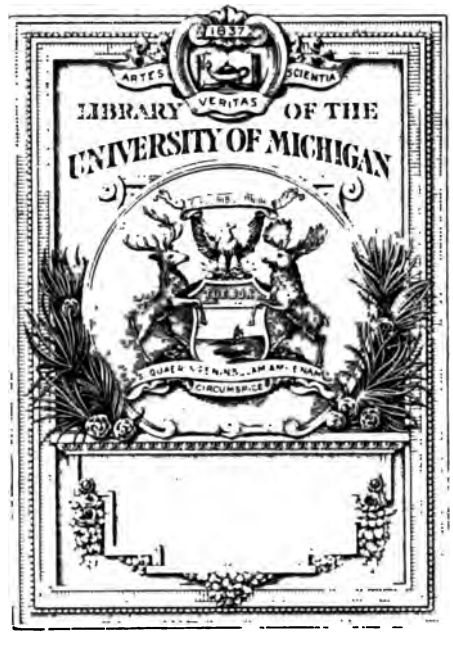
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TABLE OF CONTENTS.

VOLUME VII. NO. 1. JANUARY, 1885.

VOLUME VII. NO. 2. MARCH 1885.

VOLUME VII. NO. 3. MAY, 1885.

VOLUME VII. NO. 4. JULY, 1885.

VOLUME VII. NO. 5. SEPTEMBER, 1885.

VOLUME VII. NO. 6. NOVEMBER, 1885.

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THE RACES OF THE INDO-PACIFIC OCEANS.

POLYNESIANS.—SECOND PAPER.

It might be supposed from what has been said that the Polynesians are morose and savage in disposition, but on the contrary, their joyous and light-hearted manners are notorious. It is a common thing for the people of neighboring villages to exchange visits and spend days in merry-making. These seemingly contradictory qualities of the Polynesian depend upon a quick susceptibility to impressions. At one moment he expresses his joy in shouts and dancing; at another he is plunged into a deep melancholy, which often terminates in suicide.

They are not wanting in the higher intellectual gifts which find expression in poetry. That of a lyric order consists of lullaby songs for children, the songs which accompany and lighten every species of labor, and the battle paeans. Some are composed in metrical form, suitable to accompany dancing; while others differ from prose only in theme and style of expression. Under epic poetry may be classed a number of very old legends concerning the creation of the world and the fortunes of the first men. An interesting collection of those current in New Zealand has been made by Sir George Grey. They are told by the priests, and are composed in an antiquated language, no longer fully understood by the people. Dramatic representations, mostly of a comic character, and accompanied with mimetic dances, are performed at Tahiti.

The speech of Polynesia is divided into numerous dialects, but all bear the lineaments of close relationship. Its nearest kindred, so far as any can be traced, must be found in Malaysia and Indo-

China rather than in Melanesia or Australia. It is exceed simple in its structure, which would seem to indicate that it sundered from the parent stock before that had greatly d oped, and that subsequent isolation had prevented rapid ch in its character. It belongs to the agglutinative type, th raised little above monosyllabism. According to Frederick M ler its primitive phonetic system possessed only the sounds p, with their nasals; h, r, s, f, v, and the vowels a, i, u, e, o. lables can consist of a single vowel, or of a vowel preceded single consonant only. Relations are for the most part expre by separate words; but to some extent suffixes, prefixes, o fixes serve the same purpose. Root words are not determ parts of speech, and their characters must be inferred from context.

The religious tendency of the Polynesian mind was mar it displayed itself in the creation of a multitude of de myths and rites, which would require a volume to describe, of which we can here give only the briefest account. The universally recognized god, and the one approaching neares character of a supreme deity, was Tangaloa. He appear Hawaii as Kanaloa, in Tahiti as Taaroa, in New Zealand as garoa. While the other gods of the pantheon were picture magnified human beings, Tangaloa was more spiritualized, was thought of as a bird hovering over the universe. He too distant and too holy to be addressed in prayer, except o most important occasions. The myths regarding him much in detail, but in substance represent him as the cr and sustainer of the world. He himself sprang from prin night, and by his wife Papa ("rock") became the father o other gods. From these sprang the moon, stars, sea and w According to one story he formed men out of red earth, they ate red earth until they received bread-fruit from he Others said that he dwelt in a sort of muscle-shell, which he off from time to time and thereby increased the bulk of earth; or he was suspended from heaven in a huge egg, w was at length broken, and the islands were formed from fragments. He was in a special manner the lord of the sea, the myth is familiar according to which he attempted to dra the land from the bottom of the sea with hook and line. line broke just as the highest points reached the surface, an islands appeared instead of a continent. Another myth, significance of which will be evident farther on, relates tha islands Savaii and Upolu of the Samoan group were the land to project out of the waters, or, as one version has it, the first land to be thrown down from heaven. In New Zea a lower conception of Tangaloa prevailed. Though, as elsewl he was closely associated with the sea, he was one of n equals. He was the son of Rangi and Papa,—Heaven and Ear

and participated in creation, but was not the sole author of the universe. Next to Tangaloa, and appearing in a less shadowy form, is Maui, the sun-god. His myths are often confused with those of his rival, as when he fishes the land out of the sea. The Tongans say that the earth rests upon his body, and that its quakings are caused by his uneasy movements; hence, on such occasions they beat it with sticks to keep him quiet. In Samoa he appears under the guise of the man who found the days too short to finish his work, and who after many fruitless efforts succeeded in catching the sun in a noose and retarding his motion. He moves rapidly across the earth, is born from the sea and disappears in it at night. He brought fire from Bulotu, the Polynesian paradise, and stored it up in trees. All these are features of a sun myth.

A third night-born god was Tane. He had a wife and eight sons. In New Zealand he passed as the son of Rangi and Papa, and as the god of forests. The chief center of his worship was Huahine, one of the Society group. Under his special protection were canoe-builders and other workers in wood. He is the governor of the world of the departed spirits, and would draw all men to him at once, were he not restrained by Tangaloa and Maui. He is visible in the meteor flying across the sky. Other high deities were the war-gods, Tairi of Hawaii, Tearii of Tahiti, and Tu of New Zealand; the sea-god Rua-hatu, and the storm-god Lono, Roo, or Rongo. Below these chief gods are innumerable inferior divinities or demi-gods, and at the bottom of the scale are the souls of the dead. The general conception of the abode of the gods and of souls was that they dwelt apart, but much confusion existed regarding the exact location. The gods lived somewhere in the boundless heaven, while souls were taken to Bulotu (Samoan Pulotu) beneath the earth or beyond the western sea. Separate abodes were assigned to the spirits of swine and other animals, and even lifeless objects. Immediately after death the soul of an aristocrat was conveyed in a canoe to Bulotu, where he retained the same form and spent the time in the same pursuits as on earth. He had the power to revisit former scenes and aid or harm his friends at pleasure. Acting on this belief it was not uncommon for a man to commit suicide that he might gratify revenge for which there was no opportunity on earth.

The soul of a common man, or of a woman, after leaving the body was devoured by the bird Lota, which hovered about places of burial. It was essential to the peace of the dead that their bodies be buried. Those for whom this rite had not been performed might be heard around the houses at night piteously complaining of the cold. There is no thought of retribution in the other world, since punishment for wrong-doing is inflicted in this life.

The Polynesian reverence for the gods extended to the performance of certain external rites alone. The consciousness of sin and the demands of a moral law seem hardly to have been present to their minds. Religion was a bargain between man and the higher powers. The gods were virtually told: Give us food, health, victory, and we will reward you with rich offerings; but no service, no pay. Hence, when their plans miscarried they hurled maledictions at their gods, and broke their images or exchanged them for others. The greater power of the white men was ascribed to the superiority of their gods, a fact which contributed not a little to their ready acceptance of Christianity. They had many idols, but these were not regarded as the gods themselves, only as their more or less temporary abode; therefore to destroy an image did the god no bodily harm, but simply turned him out of doors. It was common to erect in the villages, especially near burial places, houses which were devoted to the service of the gods. In New Zealand sacred groves, in which were the graves of the chiefs, took their places.

The character of the priesthood differed somewhat on the various groups. In Samoa the office belonged to a particular family, descending from father to son. It was also hereditary in New Zealand. In Tonga any one who was inspired by the gods might become a priest, except the chiefs, who were themselves gods; still, these not infrequently employed priests. The duties of the priests were to present offerings and prayers, to declare the will of the gods as revealed by dreams or otherwise, to lay or remove *tabu*, to decide upon war, and to practice magic arts for the destruction of enemies or the restoration of the sick. Their persons were sacred, and their influence very great.

We will close this mere glance at the religion of Polynesia, which possesses extraordinary interest for the student of primitive beliefs, by a more particular description of the singular custom of *tabu* or *tapu*, to which we have more than once alluded. It had its ground in religion, but its application to almost every affair of life. It was a sort of universal police regulation with religious sanctions. It was laid on fishing-grounds, on the growing harvest and the ripening fruits; everything belonging to the gods—the temple, the idol, the offering, the ministering priests—was *tabu;* the warrior left his possessions under *tabu* when he went to battle; the forest was *tabu* while the hunters pursued their game; the husband might be *tabu* to the wife and the wife to the husband; the higher classes in society were *tabu* to the lower; the animal that was a totem to a family or tribe thereby became *tabu* to them. The working of the custom was sometimes extremely inconvenient, since everything touched by a superior became *tabu* to his inferior; hence a chief must be carried, when going outside his own inclosure, for the land, house, food, or other property of his subjects

became at once alienated by contact with his person. Priests and persons of rank only had the power to lay or remove *tabu*, which was done with various ceremonies. The breach of *tabu* was a crime almost unheard of, and punishable by death. When the act had been unwittingly done the gods were left to punish it, which they did by sending upon the unfortunate transgressor sickness or other misfortune. One of the arts of war was to lead the enemy to unconsciously break *tabu*. Connected with this practice was the existence in Tahiti of a society known as the Areoi. It claimed an ancient origin, and was devoted to the service of the god Oro. The members were distinguished by a peculiar tattoo, and their persons were sacred. They were nominally celibates, but in reality lived very profligate lives, and to conceal their shame regularly destroyed their offspring. Their occupation was chiefly that of strolling players and reciters of ancient legends, and, though their influence upon public morals was most debasing, they contributed somewhat to the development of literary culture.

Having now sketched the physical and mental characteristics, the customs and beliefs of the Polynesians, we have a few remaining words to say regarding their origin and migrations. Since European acquaintance with these islands began long ages after they were occupied by their present inhabitants, and since such native history as exists is little more than a series of confused myths and doubtful genealogies, a veil of almost impenetrable obscurity shrouds their past; and it is only by the combined aid of ethnic and linguistic science that we are able to form even a provisional judgment thereon. It is fortunate, however, that we can determine with much certainty the proximate point from which the Polynesians spread over the eastern Pacific. Both language and tradition point to Savaii, the largest of the Samoan group, as the first center of dispersion. All the principal groups have retained derived forms of the name. It is the Hawaii of the Sandwich, the Havaiki of the Marquesas, the Havaii of Tahiti, the Avaiki of Rarotonga, the Heawije of New Zealand, the Rai-vavai of the Austral, and the Habai of the Tonga islands. The Tahitians have a tradition that their people once came from an island lying in the west. We have already referred to the myth that Savaii and Upolu first emerged from the waters. The Rarotongans say that their island was peopled by a mighty hero who came from the island of Manuka, in the west—doubtless the Manua of Samoa. From Savaii there seem to have been two lines of migration; one eastward to Tahiti, which formed a second center of dispersion and colonized Hawaii, Marquesas and Paumotu; another through Tonga to New Zealand. The last migration seems to have been comparatively recent, and its principal features are still preserved in tradition.

Thus far we have traced the movements of the family with comparative ease, but when we attempt to follow them beyond this point, and find their early home and nearest kindred, the trail fades out almost entirely. However, taking all things into consideration, it seems probable that their ancestors wandered or were driven from some part of Southeastern Asia along the Malay Archipelago and the northern border of Melanesia until they reached the unoccupied islands which are their present home. The grounds for this conclusion we have not space to detail. The time of their migration must have been a distant past, since they were unacquainted with the manufacture of pottery, though it has been known all over Malaysia for ages. Moreover, the Polynesian dialects are at a low stage of development, compared with the Malay, and show no trace of Hindu influence, which made its mark upon the latter in the first centuries before Christ. Most writers have held that the Polynesians are an unmixed race, entirely distinct from the Melanesians and the other dark people of the Indo-Pacific Islands; but recently the Rev. R. H. Codrington, whose familiarity with the Oceanic races and languages entitles his opinions to respect, has maintained that the Melanesian, Malayan, and Polynesian languages are fundamentally related; hence, we infer that the people speaking them are likewise akin. Prof. A H. Keane, in a monograph on "The Relation of the Indo-Chinese and Inter-Oceanic Races and Languages," has put forth a view which in many respects meets the conditions of the problem. Recent explorations in farther India have made us acquainted with a people who, in their civilized condition, are known as Cambodians or Khmers. These, who represent a once powerful kingdom and high civilization, have a fairer complexion than the surrounding population, and speak polysyllabic languages. Mr. Keane believes that they are an off-shoot of the white, or Caucasian, race; and that a section of them, pressed southward by the yellow Mongolians, migrated to the Archipelago. Thence a part continued their wanderings whither the pressure was least until they arrived in the eastern Pacific; the rest amalgamated with the on-coming Mongolians, whence sprang a yellow-brown race, the typical Malays. This theory has the merit of explaining the splendid physique and almost European fairness of the Polynesians.

JOHN AVERY.

THE IROQUOIS SACRIFICE OF THE WHITE DOG.

The principal religious ceremony of the Six Nations, and a very remarkable one, was—and among the heathen portion of the confederacy still is—that which is known as "the Burning of the White Dog." It takes place at the season which they deem the opening of the year—in February, or early in March—when the approach of spring begins to be felt. I was present with some friends, by invitation of the leading chiefs of the Onondagas, on a recent occasion, when this ceremony was performed at the Council-House of the tribe, on the Canadian Reserve of the Six Nations. This Council-House, or "long-house," as they term it, is an edifice of hewn logs, a style of building which has taken the place of the bark structure of former times. It is rather picturesquely situated, in the midst of a large clearing, on an eminence overlooking a small stream.

We reached the place about noon. The dog had been killed, by strangling, before we arrived—had been decked for the sacrifice, and suspended in a small wooden shed which stood near the Council-House. About a hundred Indians, men, women and boys, were assembled in and about the building. I had seen a much larger number present at their dances and feasts. It was evident that, as in other lands, a religious ceremony was less attractive to the crowd than a festivity. We went to look at the dog, and found some young men just taking it down. They brought it into the Council-House, and laid it on a small platform of boards in the center of the room. This room, which occupied the whole interior of the building, was a large oblong apartment, about thirty-five feet long by twenty wide, open to the roof, with a rough plank floor, and with heavy wooden benches ranged along the sides and ends. The windows on one side were boarded up, as a defense from the cold, thus somewhat darkening the room. Two stoves, heated to redness by the wood which was crammed into them, stood near the two ends of the apartment, leaving a large space vacant in the center, where the ceremonies were performed.

The dog should have been entirely white, any spot being accounted a blemish. Probably such an animal was hard to find, as the one before us had spotted ears. It was a dog of medium size, with a slender body, long hair and large drooping ears. It was, we were told, a good specimen of the genuine "Indian dog." The creature was gaily decorated. Spots of red paint showed here and there on the body; a string of the precious wampum encircled its neck; ribbons of various colors—red, blue, green and purple—were fastened to the body, legs and tail, and bunches of colored feathers were attached to its neck.

A small cotton bag and some paper parcels, containing tobacco for incense, lay near it. This variety of the dog has always an inoffensive look, resembling in that respect the house spaniel. As the creature, with its harmless aspect, lay there, "a victim decked for the altar," in the center of the silent circle, one could not but feel an emotion of pity at the sight of an innocent animal which had been put to death, not for any fault of its own, but for the supposed spiritual benefit of its slayers. One could comprehend something of the feelings of regret and remorse with which the ancient nations—the Jews and Romans—regarded their sacrifices. It was doubtless a mingled emotion of compassion and piety which led them to decorate the animal they were about to offer for their sins.

The Indians, men, women and children, were now seated around the room in silence. The brother chiefs, George and John Buck, were present, and several others who had acted as leaders in the ceremonies of the harvest festival. A middle-aged Indian then arose and made a brief address in a low tone, looking on the ground, as is the custom in formal speeches of this nature. He said they were about to commence the annual ceremony in honor of their great deity, Hawenniyo, as it had been established by their forefathers. John Buck made a brief response, and then, with common accord, the people left their seats unceremoniously, but without disorder, and went out of the building. When we were outside, the object of the movement became apparent. A tall, good-looking Indian, dressed partly in the ancient costume, was about twenty yards from us, approaching from the east. This, we were told, was Abraham Buck, a younger brother of the two chiefs, but not himself a chief. On this occasion he was acting as a director of the ceremonies. He wore a hunting-shirt over ordinary trousers, a sash adorned with beads, a purple scarf descending across his breast from his right shoulder, and a circlet of some white metal like silver around his head, from which rose plumes of varicolored feathers. A string of wampum surrounded his neck, and lay upon his breast. Metal bracelets encircled his arms, and long shining pendants hung from his ears. As he approached, he was met and stopped by his brothers and a few other men, who appeared to be acting like him as directors of the proceedings, and who seemed to consult with him. Meanwhile, about twenty young men and boys formed in line, with shot-guns and rifles, and presently, under the leadership of George Buck, began firing salutes. They loaded and fired three or four times, irregularly, and with much boyish laughter when a piece missed fire or any misadventure occurred to amuse them.

Abraham now recommenced his progress towards the council house, chanting a song and moving with the peculiar measured step which they always use in their ceremonies, if they walk

while singing. At each step, the foot which is advanced is pressed firmly on the ground, and at the same time the whole body is moved slightly up and down, in harmony with the cadence of the song. The walk has thus a deliberation and something of solemnity, which accord with the character of a religious ceremony. Thus slowly advancing, he entered the building, followed by the throng. While the others seated themselves, he continued his progress, moving in a circuit around the victim, and still chanting his hymn. Presently he stopped, and one of the Indians said a few words to him, which, the interpreter told us, were a sort of confession of faith. Abraham then resumed his chant and his measured walk, which he kept up for some minutes, with similar interruptions. He moved at times in a circle about the dog, but more frequently in a straight line to and fro, along the side of the building, in front of about twenty Indians, chiefs and head men, who sat together on a bench, with their heads bowed down, and a look of deep solemnity on their composed features. As he chanted they responded, either with a few words sung in a high key, or with the usual chorus of assent "heh! heh! heh!" (equivalent to "amen,") frequently repeated. Every now and then one would rise and address the leader, as Abraham Buck might be termed, in a few words expressive of his faith in and gratitude to Hawenniyo, after which the chant and response would proceed as before.

This part to the ceremony being finished, the leader moved slowly, and still chanting, out of the house, all the rest keeping their seats. We heard him outside, gradually receding in the direction of the altar, if that name may be given to the pile of firewood a few rods north of the house, at which the sacrifice was to be completed. He appeared to make a circuit about the pile, still continuing his chant, and we heard him slowly returning. When he re-entered, two young men advanced and lifted up the victim. One of them bore it in his arms out of the house, all the people following. We thus came to the pyre, which, as has been said, was merely a low pile of firewood, regularly laid, about four feet square and two feet high, with a hollow in the center. It was already alight and beginning to blaze. The dog was laid near it, at the southwest corner. George Buck, who from that time took the lead in the ceremony, stood beside it and commenced a long chant, which he kept up, in brief staccato stanzas, for about a quarter of an hour. Abraham stood at his back, and all the rest arranged themselves round the burning pile, in a wide circle, the elders mostly with their hats off, and a serious, reverent aspect; but many of the younger men and boys seemed either careless or curious, like persons present at a show.

I obtained afterwards from the chief who sang, with the aid of the interpreter, a complete version of the hymn, which, he affirmed, was chanted by him precisely in the words that had

been handed down from the earliest times. The name of the divinity to whom the prayer was addressed, Hawenniyo, was rendered by the interpreter the "Great Spirit," in accordance with the usage derived from the intercourse of Europeans with Indians of other tribes. It means, however, literally, "He who rules," or, "He who is Master," and I have therefore rendered it in the following version, "The All-Ruler." On this divinity the chief, when he first came to the burning pile, called loudly three times to invoke his attention. He then continued in words which the interpreter rendered as follows.

"Lo, Hawenniyo, all we who are here assembled still adhere to the ancient laws made by thee for our race.

"Our people strictly abide by thy ordinance, in maintaining the mode of worship which our forefathers followed, and we will recognize this mode as long as our race exists.

"Now we elevate our thoughts to thy worship, in this solemn rite in which we are now engaged.

"Now we are about to offer this victim adorned for the sacrifice, in hope that the act will be pleasing and acceptable to the All-Ruler, and that he will so adorn his children, the red men, with his blessings, when they appear before him.

"Now, on the part of all the Indian race, I cast this victim into the fire, and its spirit will take its flight to him who made everything. It is in this mode that we wish to invoke thy blessing."

While singing the last stave, the chief took up the dog by the forelegs with both hands, held it for a moment, still chanting, and suddenly threw it into the midst of the flames, now very fierce. They at once enveloped it, converting it, with all its finery, into a charred mass, showing merely the black outlines of a dog, from whose head, for a few minutes, the grinning teeth protruded with startling suddenness, while a faint odor of burning flesh was apparent. The chief, meanwhile, continued his hymn without interruption:

"Now thy creatures have done their duty in offering this sacrifice, to express their devotion and their gratitude, and to implore thy blessing.

"They who compose this circle are fewer than they were wont to be in former times, but are not less devoted to thee.

"Now hear the voice of thy creatures on the earth. Thou art above in heaven, who made all us living creatures here.

"Though there be now few of us, we are just as true and earnest in asking thy blessing for all mankind. And we hope that thou wilt increase the faith of those who shall come after us.

"Now we beg and implore that all the witnesses and agencies around us, the light, the trees, the clouds, and all the rest, may enable us to bear all the toils and sufferings we have to go through, and that we may still adhere to thee when our next festival comes.

"And we ask particularly thy blessing, that we may be guarded from all evil throughout the year, and that we may show respect to the chiefs who have charge of the interests of the people.

"We now unanimously ask thy blessing to guard them from all harm, that they may establish the true well-being of their people.

"We also ask thy blessing upon the young men, our warriors. Give them strength, that they may be able to enjoy their life, and to do their duty in the way that is right and just.

"And we also ask thy blessing to guard and bless all our women. Give them cheerful strength, that they may be able to go through all their trials, and enjoy their health and all other happiness until the next annual festival.

"And we also beg the All-Ruler to bless the young children who are of age to run about, and those who creep, unable to walk, and those who are still in their mothers' arms. Give them health and strength, and cause them to grow until they are of age to understand their duties towards their maker.

"We particularly implore thee, we who by thy favor are still living, that thou wilt be pleased to remove all sickness and suffering from our people, and let them enjoy the health and strength needful for their worldly pursuits.

"And we ask the All-Ruler so to order and establish in accordance with his intention, that the world shall be quiet and peaceable, as he designed at the first creation.

"Thou, the Creator, who alone made everything, bless all the herbs, the medicines; give them strength for the use of mankind. Give them power to relieve all our diseases.

"We also ask that the approaching spring may bring us a pure and refreshing air and water, that so we may enjoy its blessings.

"And bless all the fruits that earth produces in the approaching summer, and all the trees of the forest that bear fruit for the happiness of men, that they may duly enjoy the fruits in their season.

"We also ask thy favor to cause all the larger game that thou hast created to flourish, and the smaller game, for the enjoyment and use of mankind. Cause the birds of the air to sing sweetly for the pleasure and delight of man; and that they may not diminish on the earth, but increase.

"Cause the approaching summer to bring forth all the planted seeds, the grain, the kinds of fruit. Cause abundance in due time, that men may gather plentifully for the use of the people, and for their sustenance here on earth.

"I now cast in the fire the Indian tobacco, that as the scent rises up in the air, it may ascend to thy abode of peace and quietness; and thou wilt perceive and know that thy counsels

are duly observed by mankind, and wilt recognize and approve the objects for which thy blessings have been asked."

This invocation, as it is repeated among the Senecas—substantially the same as is here rendered, but much briefer—is given by L. H. Morgan, in his excellent work, the "League of the Iroquois." The conservative Onondagas, who were the usual leaders in the public ceremonies of the Six Nations, have naturally preserved the chant in its complete form.

I have, for convenience, given this remarkable chant, or prayer, as though it had formed a continuous hymn. In fact, however, there were many interruptions. After the victim had been cast upon the fire, the chief presently suspended his song for a time, and it was taken up by one of the Indians in the circle. Walking to and fro, with measured step, along the side of the burning pile, opposite the chief, he chanted a few staves, and then returned to his place. The chief thereupon resumed his hymn, which was soon again interrupted, and the chant taken up in like manner by one of the attendants. Thus the ceremony continued, with alternate chants, until about a dozen of the men had declared their adhesion to the faith of their fathers, or expressed their gratitude to Hawenniyo. One of those who thus took part was a lad of about sixteen, who, with a manner in which the modesty of youth and a sort of religious enthusiasm were blended, walked slowly to and fro, chanting a few words, which, when translated, I found to mean merely, "what has been said," thus indicating his assent to the sentiments which the chief had expressed.

New wood was at length heaped upon the pile, burying the victim, which was slowly consuming. The chief, as he approached the close of his hymn, opened the parcels of finely cut tobacco, which were probably offerings presented for the occasion by different votaries, and, mingling the contents together, threw a handful in the fire. He proceeded with his chant, casting from time to time into the flames portions of the incense, to which he finally added the cloth and paper that had enveloped it, taking care to see that every fragment was consumed.

While this was going on, his brother chief, John Buck, and another Indian joined in the chant alternately with the leader. The words sung by the former were an appeal to the people to declare their assent to what had been said on this occasion of their annual sacrifice. Finally, one of the head men, speaking in his ordinary tones, expressed his hope that all who had taken part in the proceedings would lay to heart the good words which they had heard that day. The strange ceremony was thus concluded, the circle of attendants dispersing at once. The number present was smaller than usual, and was remarked upon by the chiefs as an evidence that the interest of their people in the sacrifice was waning.

Of the origin of the ceremony they could give no account. They merely affirmed that it had come down from the remotest times, as the chief religious observance of their people. One of them, who had acquired some education in the Mohawk Seminary at Brantford, made the ingenious suggestion, as a conjecture of his own, that possibly their ancestors, before they emigrated to the American continent, had been accustomed to sacrifice a sheep; and that when they came to a land where no sheep were found, they selected a white dog, as offering the nearest resemblance among the creatures about them to their original victim. Another and more probable conjecture is that the dog was selected merely as being the animal most prized by the Indians, and therefore most suitable for a sacrifice to their divinity. A white one would be preferred for the natural reason that among the Indians, as is shown in their wampum-belts and in other indications, white is an emblem and declaration of peace and good will. Whatever may be the origin or signification of the rite, it is undoubtedly one of the most curious and interesting of Indian usages.

Something further should be said in regard to the chant of thanksgiving, which formed the most striking part of the ceremony. As the Iroquois have enjoyed for more than two hundred years the instruction of zealous missionaries, both Catholic and Protestant, a natural supposition would be that the recognition of one supreme being in this chant, and also the singularly noble and benevolent sentiments, expressed in it, were due to the missionary teachings, which could hardly fail to make a strong impression even upon those hearers who refused to adopt their religious dogmas. So far as regards the name and the attributes of the divinity addressed, there can be little doubt that this supposition is correct. Remarkable as the tribes of the Huron-Iroquois family are for their intelligence, there is no reason to suppose that they had advanced to the conception of a sole all-governing deity —a conception which has proved too abstract for the great majority even of Christian nations. These tribes are known to have had many divinities, and it is doubtful if the name of Hawenniyo was given to any one of them. The most noted of their ancient deities was Heno (or Hinu), the Thunder-god—the Iroquois Thor or Jove—who, like his Aryan anti-type, was regarded as a powerful and kindly divinity, sending refreshing showers on the fields of his worshipers, and blasting with his bolts the malignant sprites, the monstrous serpents, and other preternatural enemies of man. Another deity, who seems to have been, in a special sense, the national god of the Iroquois, bore the stately name of Taronhiawagon—the "Holder of the Heavens." He was regarded by the Iroquois with a peculiar reverence, of which some remarkable proofs are mentioned in the Jesuit Relations; and he seems, in his attributes, to come nearest to their modern conceptions of Hawenniyo.

The latter name is believed to have originated among the Hurons, where the Jesuit missionaries are supposed to have heard it first applied as an epithet to one or other of the local divinities. It meant originally "the Great Ruler," the termination *iyo* having had anciently in that language the meaning of "great," which in recent times has been modified to that of "good" or "beautiful." The missionaries were struck with the epithet, and adopted it as the name of the sole omnipotent deity. As the word is properly a verbal inflection, its use in scripture versions was found to be perplexing; and after a time, by dropping the first half, it was reduced to the purely impersonal form of Niyo, or Niyoh, which is now employed by both Catholic and Protestant missionaries as the word for "God." The pagan Indians, however, have not received this word, which is to them unintelligible. They have retained the original form, which seems to have superseded, in their worship, all other names, and to be regarded now as that of their sole divinity, or at least the only one to whom adoration is rendered.

With regard to the sentiments expressed in the chant, the case is somewhat different. From the reports of the missionaries and other early investigators, it is certain that these Indians had in primitive times regular thanksgiving festivals, occurring at several seasons during the year, in which hymns of praise and gratitude were chanted. The Iroquois "Book of Rites," undoubtedly an ancient native composition, abounds in kindly sentiments similar to those embodied in the chant now recorded. That these sentiments have gained in refinement and elevation under the influence of missionary teachings is probable enough. But, after all, it must be remembered that proselytes will only assimilate the instructions which are congenial to their own feelings. The ferocious pagan persecutor of christians will, when converted, hear with delight the stories of Joshua at Jericho, of Samuel and Agag, and will become a ferocious christian persecutor of infidels. If the Iroquois, while still remaining nominally pagans, have preferred the gentle and gracious teachings of the New Testament, and have adopted them into their own worship, the fact must certainly be regarded as affording strong evidence of a naturally kind and peace-loving disposition.

CLINTON, Ontario. HORATIO HALE.

AGRICULTURAL WORKS AND EMBLEMATIC MOUNDS.

SIXTH PAPER.

The use of the emblematic mounds as religious works occupied our attention in the last paper. We now, by way of contrast, turn to a new phase of the subject, and purpose to consider the tokens of agricultural life, which are found among the mounds. One reason for taking this subject up at this present time is, that it brings us into closer contact with the actual life of the effigy-builders. One great difficulty in understanding the emblematic mounds arises from the remoteness of the people who erected them. This remoteness is owing, not merely to the age in which they lived, or to the obscurity which has come upon their history, but chiefly to the difference which existed between their customs and ours. A wide gulf separates them from us, and it seems almost impossible for us to cross or to enter into their state of mind and understand their habits. Agriculture, however, furnishes a bridge by which we can cross and come into contact with them. While their tribal organism, social customs and religious notions were very different from ours, their agriculture was very similar, and this furnishes a common ground on which we may stand. The custom of erecting effigies was so unique and singular that it obscures the life of the people, and we are therefore gratified when we find some custom which is familiar to us. It is a very suggestive topic, as it reveals the common life of the people and brings us into close contact with native society. We shall find that it opens to our view not only the industries which were common, but reveals the sedentary condition of the Mound-builders. We shall find the agricultural works frequently associated with villages, and shall see in them the varied features of village life. We shall discover in them also the religious customs of the Mound-builders, for the people did not banish their religion from their fields, but they brought their effigies into the midst of them as protectors and as divinities. We shall find that there were difficulties surrounding their agriculture which we do not experience, difficulties arising from the incursions of wild animals and the liabilities of attack from hostile people. Yet there were protections to these agricultural works which make the picture all the more familiar to us. We therefore turn to the topic with more than usual interest, expecting to find much information in reference to the people who erected the effigy mounds.

In treating the subject we shall first give a general review of the agricultural habits of the pre-historic people. Second, describe the agricultural tokens which are presented in Wisconsin

and neighboring states. Thirdly, speak of the association of these tokens with emblematic mounds; and fourthly, refer to the relative age of the different agricultural works. It is a broad subject, and we have found it difficult to condense it into the compass of a single chapter.

I. The evidence that agriculture prevailed in pre-historic times will first occupy our attention. It is well known that America was an agricultural country before its settlement by the whites. There were, to be sure, portions of the continent which were occupied by hunting races, where agriculture did not exist, but all that portion which was embraced between the great lakes and the Gulf of Mexico, and in fact all of the territory of the United States, was emphatically an agricultural region. There may have been a difference between the different portions of this territory, the southern half of it having been given more fully to the pursuit than the northern half, yet there are evidences that horticulture in one way or another prevailed throughout the whole land. It may have been in some places a rude kind of farming and the implements used, primitive, consisting of wood and stone hoes, with no plows and very few conveniences. Yet the extent of the fields cultivated was, in many places, quite astonishing, and the tillage was quite remarkable. The products of the soil were mainly corn, though in many places there were garden products, such as vegetables, beans, squashes and roots. It is said by some that there were domestic fowls, such as turkeys, and in the western parts of the country tame buffalo and tame elk; there is, however, no evidence that animals were ever used in tilling the soil. The men at times assisted in clearing the ground, and in the season of the harvest aided in securing the crops, but the work of tilling was mainly done by women. The cornfields surrounded the villages, and sometimes extended from village to village, several miles in length, but generally the gardens were adjoining the houses, though there are places where garden-beds are found somewhat removed from the habitations.

We now turn to the proof of these points. We shall cite the testimony of early travelers and explorers. We shall first refer to the agriculture which was discovered by the Spanish explorers. This was chiefly seen in the Gulf States, but extended as far north as the mountains of Carolina and Southern Tennessee, and prevailed west of the Mississippi River. Ferdinand De Soto passed from Tampa Bay in Florida through the whole breadth of the Gulf states, crossing the Mississippi between Natchez and Memphis, and finally reached the broad plains of the far west. From the historians of this expedition we learn that agriculture was prevalent all over these states. Great fields of corn were traversed by the army, and stores of grain were found in the villages. West of the river there were villages around which were extensive cornfields, and the winter supply in these villages was

abundant. The army, to be sure, at one time passed out beyond the agricultural* region and entered upon the great buffalo plains which extended from the borders of the Arkansas to the foot of the Rocky Mountains, but everywhere else they found the tribes depending mainly upon the products of the soil, and the wild life of the hunter was the exception. Following these Spanish explorers were the French navigators, such as Cartier and Champlain, who, with their vessels, struck into the continent through the mouth of the St. Lawrence, and with canoes penetrated into the vast interior by the water channels which were furnished by the chain of great lakes and the rivers of Canada. The descriptions furnished by Champlain are especially worthy of notice.

This heroic man traversed the northern borders of New England, penetrated the interior of New York, and extended his wanderings far north and west, toward the Georgian Bay and the east coast of Lake Huron. He made a record of his wanderings, which may be read with interest, as they furnish a picture of the condition of the country at the time as few narratives do. Here were extensive forests; the streams were large and the scenery was wild and picturesque, and it required great fortitude to enter and to traverse them, for there was great danger of being lost in the interminable woods, and the supplies for man were comparatively few, requiring the skill of the hunter to draw them from the wild retreats. We learn that here even the natives themselves were frequently upon the point of starvation, and that even the largest villages, such as that at Montreal, called Hochalega, and that near Quebec, called Tadoussac, at times were entirely deserted by their inhabitants, the natives finding the deep interior more favorable for subsistence during the long winter months.

Still the testimony of Champlain is that agriculture was practiced even in the midst of this wilderness, and that the villages were all of them surrounded with patches of corn and places where vegetables grew. Speaking of the inhabitants of Mount Deseret and the Penobscot, he says they were an agricultural race. "Patches of corn, beans, squashes, tobacco and esculent roots lay near all their wigwams." "Their mat-covered lodges could be seen thickly strewn along the shores, and the natives came out from bays and inlets to meet them in canoes of bark or wood." At Port Royal the party spent the winter, "enjoying the luxuries of the

*The reader will find an interesting account of De Soto's journey in the Conquest of Florida, by Theodore Irving, M. A.; Geo. P. Putnam & Son, New York, 1869.

The reader will find Parkman's volume, "Pioneers of France in the New World," instructive, as there are in it quotations from Champlain's journal, and many valuable references.

forest, the flesh of moose, caraboo deer, beaver, otter and hare, bears and wild-cats, with duck, geese, grouse and plover, sturgeon and trout, and fish innumerable." "At Quebec the natives, gorged with food, lay dozing on piles of branches in their smoky huts, where through the crevices of the birch bark streamed in a cold capable at times of congealing the mercury," and yet the same people were before spring-time reduced to a desperation by the famine and starvation. "The five confederate nations dwelt in fortified villages, and were all alike tillers of the soil, living at ease when compared with the famished Algonquins."

The Ottowas were upon the river which bore their name. On the borders of Lake Coulange was their chief seat. "Here was a rough clearing; the trees had been burned; there was a rude and desolate gap in the somber green of the pine forest. Dead trunks, blasted and blackened with fire, stood upright, amid the charred stumps and prostrate trees. In the intervening space the soil had been feebly scratched with hoes of wood or bone, and a crop of maize was growing, now some four inches high." At Lake Nipissings Champlain found another tribe. He visited "the Indian fields with their young crops of pumpkins, beans and French peas; the last a novelty obtained from the traders." At Thunder Bay he found the Hurons. "Here was a broad opening in the forests; fields of maize, idle pumpkins ripening in the sun, patches of sunflowers, from the seeds of which Indians made hair-oil, and in the midst of them the Huron town of Otouacha." "To the south and southeast other tribes of kindred race and tongue; all stationary, all tillers of the soil, and all in a state of advancement."

Here we have a picture of the two sections of country, north and south, and although the contrast is great, we find that agriculture was common in both. A similar picture is also presented to us by the English colonists. The historian, De Bry, has preserved for us certain descriptions or narratives from which we can draw. He has also given an engraving copied from the painting of the celebrated Wyeth. From the engraving and the records we learn that the villages along the Atlantic coast were, all of them, surrounded by fields of corn and garden-beds and other tokens of cultivation. The village of *Pomeiock* has been described, and pictures of it have been given. This village is represented as in the midst of a cornfield, which was itself surrounded by forests. There is in the center of the cornfield a lodge, and in the lodge a sentinel, placed there for watching the growing grain. In the forest there are wild deer. The cabins or huts of the natives are clustered together, making a village. Around each cabin are gardens full of vegetables of various kinds. In the midst of the village are two circles, one for dancing and the other for religious ceremonies. There are also

houses for the storing of grain as well as the house of the chiefs and the houses where the dead were deposited. The remark in reference to the gardens surrounding the houses is made by Captain Ribaut, in the discovery of Terra Florida, published in London, in 1563. "They labor and till the ground, sowing the field with a grain called *Mahis*, whereof they make their meal, and in their gardens they plant beans, gourds, cucumbers, citrons, peas and many other fruits and roots unknown to us. Their spades and mattocks are made of wood so well and fitly as is possible."

From these descriptions we learn that there were two kinds of cultivation; the one, in the field, which was conducted according to the native tribal system on a communistic plan; the other in the garden, which was more a matter of personal effort, and conducted by the individuals, the products of which belonged to the family.

Such was the agriculture seen by the southern colonists. That seen by the New England colonists was, however, similar. From the narrative of the Pilgrims we learn that agriculture existed in New England, although the country here had been depopulated by disease, and the natives were not as numerous or the villages as large as at the south. A party of Pilgrims spent the first sabbath on an island near which the Mayflower had anchored. Here they found pits or "caches" in which the natives had hid their corn, and on this they made their first meal.

At the landing at Plymouth Rock, the Pilgrims saw no Indians, but soon after a reconnoitering party found a quantity of corn and a copper kettle, which they "borrowed" and brought in as signs that the country was inhabited. We also read that they "found much plain ground, about fifty acres, fit for ploughing, and some signs where the Indians had formerly planted their corn."

Thus, even in New England, the archæological tokens of agriculture were shown and the descriptions given by the "Pilgrims" confirms those given by the explorers in other parts.

These districts are to be sure somewhat remote from the region occupied by the emblematic mounds, yet they help us to understand the agriculture which may have existed among them. There are no descriptions of fields or garden-beds or caches given to us by explorers, and we can not say that they were seen and that the owners of them were known. The missionary Marquette, who sailed through the water channel which crosses this state, and passed over the portage between the Fox and Wisconsin rivers, has described villages, but does not seem to have noticed cornfields or any other agricultural tokens. The early settlers found the Indians cultivating corn, but they were migratory tribes, differing from those which had formerly dwelt here, and were not the same people who built the emblematic mounds.

Still we learn from these settlers that there were many places whe corn had been raised, and from their descriptions we may not on become acquainted with the agriculture of the native India but from them we may infer what the system was which pro ably existed among the Mound-builders. The soil in W consin is easily cultivated, and there are many open places whi could be occupied without clearing, and many other circu stances which would favor agriculture. The evidences are th the country was permanently occupied. We cannot say that t prairies were ever covered with extensive fields, for there are evidences of this. The mounds and earthworks are general situated upon the streams and lakes, and not upon the prairi We do not know that agriculture here was any more extensi than Champlain found it to have been in Lower Canada or t regions about Lake Huron, yet, judging from the tokens left should say that the people occupying the region depended part upon the cultivation of the soil for their subsistence. The was undoubtedly the combination of the hunting life with t agricultural life, the people feeding upon the wild game in t forests, the fish in the rivers and lakes, the wild rice which gr in the swamps, the nuts and berries which were found in t openings and marshes, and the roots which grew in varic places. They probably fixed their villages upon the banks the streams and lakes, the men spending their time in hunti and fishing, leaving the women to plant the corn and attend the garden-beds. The ownership of the fields was probably co mon in the tribe, though each family may have had its own p ticular plot of ground. The harvest was probably gathered a was stored in caches near their villages, and then effigies plac near the caches to guard them from robbers. Among so tribes the grain was stored in cribs or granaries which were bu on posts about seven feet high. In other places it was stored the loft of the houses, but here it seemed to have been stored caches. The Indians kept the situation of their caches a sec for if found out they would have to supply every needy neighb "They lived in stockaded villages and had forts or castles n their corn grounds for refuge in case of eruption of small mara ing parties of their enemies." There may have been the sa system prevalent among the emblematic Mound-builders, for ma of the fields and garden-beds are found near the sites of anci villages, and there are many points of resemblance between t life of the two races, the building of effigies being the main ference. At the date of the arrival of the French the Miami Kickapoos, Winnebagoes, Outagamis or Foxes, and other tri were living in Wisconsin, while all south of this as far as to mouth of the Ohio was held by the Illinois and their alli among whom were a few villages of Shawnees. Among

these nations corn was cultivated in quantities and agriculture was common.*

We conclude, then, that the people who erected the emblematic mounds were agriculturists, for they were certainly as advanced as were the later tribes, and the evidences given by their works is that they were as permanent, and as likely to depend upon the products of industry as any of the tribe of Indians. There are many points which come up in connection with their works, which suggest this.

II—Our next point will include a description of the archæological tokens. It appears that there are many evidences of prehistoric agriculture in this state.

1. In the first place, there are many relics which could have been devoted to no other use than to agriculture. These relics are mainly of copper, and indicate a very considerable skill in manufacturing It is not known, for certain, whether these copper tools belong to the mound-builders or to the Indians, but they are interesting as illustrating the conveniences for agriculture, which were common. Some of these copper tools are made with sockets and a shoulder inside of the socket, and a blunt, short spade-like edge below the socket, as if the intent was to put them upon the end of a pole or handle and to use them as spades or plows. They are generally well wrought and interesting specimens of tool-making. They vary in size from two to four inches in length, two to three inches in width, and the thickness of the socket from one to two inches. They are superior to the tools which were used by the Indians of New England, and even superior to the stone hoes and spades which have been found in Tennessee and the Southern states.

Loskiel, speaking of the Delawares and Iroquois, says. "They used formerly the shoulder-blade of a deer or a tortoise-shell, sharpened upon a stone and fastened to a thick stick instead of a hoe."

We give a cut of a copper spade or plow (see figure 93,) as an illustration of the skill which the Mound-builders had attained in manufacturing agricultural tools. This particular specimen was found by Mr. Wm. H. Marshall, of Circleville, among the mounds of Ohio, but there are several specimens in Wisconsin which are

*For evidence on these points we refer to the "Mounds of the Mississippi Valley, Historically Considered," by Lucien Carr. References will be found in this monogram to many early explorers, including Goutell, Charlevoix, Tonti, Father Marquette, Father Membre, Carver, Lafitau, Hennepin, La Hontan, Du Pratz, Schoolcraft, De Laett, Vanderdonck, and many others, all of whom have described the habits of the northern Indians. The southern Indians differ from the northern so much that we cannot apply the descriptions given by the authors who were familiar with them as appropriate to Wisconsin, but there are enough descriptions of the tribes who dwelt in this region to furnish a picture of the habits prevalent without confounding the two sections in one general review.

identical with it, and we have chosen this because there are so many resemblances between it and the Wisconsin specimens. Several such specimens are at present in the cabinet of the Wisconsin

Figure 93.
Copper Spade, from Ohio.

Figure 94.
Stone Hoe, from Illinois.

Historical Society, and several others in the hands of private collectors, but they are all of exactly the same pattern, and are all beautifully finished, and are admirable for their symmetry and perfection.

Dr. Palfrey speaks of a hoe made of a clam-shell or a moose shoulder-blade, fastened into a wooden hoe or handle. Adair, speaking of the Catawbas, says that one of their cornfields was seven miles in extent, and thinks that the tribe "must have been a numerous people to cultivate so much land with their dull stone axes." Dr. Rau speaks of the agricultural tools found in the Western states. They are of two kinds. The first are spades, the second are hoes; the spades, oval-shaped, more than a foot in length, five inches in breadth, three-fourths of an inch thick; flat on one side and convex on the other, worked to an edge all around; the hoes semi-circular in shape, six inches across each way, an inch thick, the lower end round and worked to an edge, with two notches near the top for fastening the handle. (See figures 94 and 95).

Specimens of these agricultural implements have been found in various places. Dr. Snyder, of Schuyler county, Ill., discovered at one time 3,500 of these implements in a nest, and Squier and Davis mention a mound in which were more than 600 of them, arranged in two layers, one above the other, and Dr. Coy, at Racine, found about thirty such implements, showing that they were common in this region. Dr. C. C. Abbott says hoes and stone spades are not uncommon in New Jersey. Dr. Lucien

Carr and Mr. Henry Haynes, and Mr. L. M. Hosea have spoken of the agricultural implements of Kentucky. All of these auth-

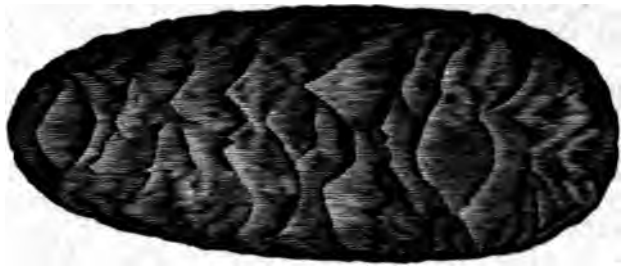

Figure 95.
Stone Spade, from Illinois.

ors show that agricultural tools were common, but none of them are equal to the copper specimens which have been found in the state of Wisconsin. (See figure 96.)

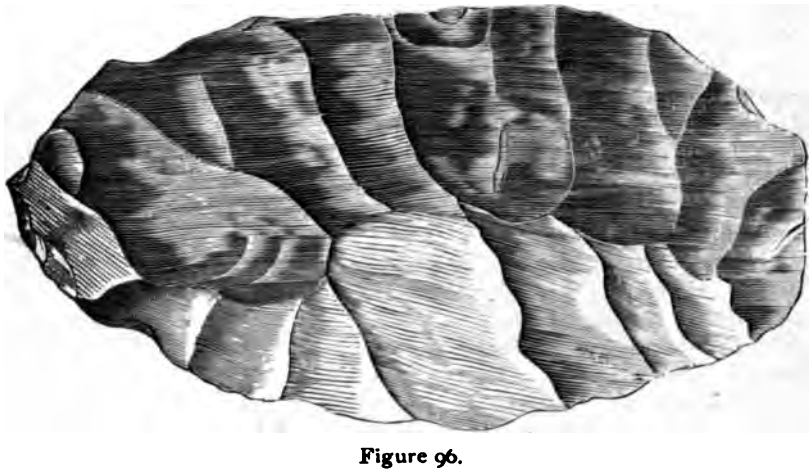

Figure 96.
Stone Hoe or Spade, from Kentucky.

2. The second class of tokens is the garden-beds. There are a few places where garden-beds have been found associated with emblematic mounds. These have been so nearly obliterated that very few traces of them are now discoverable. We are indebted to Dr. J. E. Hoy, of Racine, who has taken the pains to point out a series of these, still traceable near that city. Mr. W. H. Canfield has also described other garden-beds in the vicinity of Baraboo. Dr. I. A. Lapham has described beds as formerly existing near Milwaukee, at Mayville, at Theresa, in Dodge county, and several other localities. The best description of

them is one which was written by Hon. Bela Hubbard, of Detroit, and which was published in the first number of THE AMERICAN ANTIQUARIAN. These beds were in the state of Michigan, but were so similar to those found among the emblematic mounds that we take this description as an illustration, and shall quote freely from it.

Mr. Hubbard says: "Unusual importance is attached to these remains of a lost race, from the fact that they have been almost entirely overlooked by archæologists, and because those which were so numerous and prominent thirty or forty years ago have now nearly disappeared." The earliest mention of the garden beds is found in the report of Verandrier, who, with several French associates, explored this region before 1848. He found in the western wilderness "large tracts, free from wood, many of which are everywhere covered with furrows as if they had formerly been plowed and sown.

Schoolcraft was the first to give the world any accurate and systematic account of these "furrows." Indeed, he is the only author of note who honors this interesting class of the works of the Mound-builders with more than the most meagre mention. Observations were made by him as early as 1827. He gives figures of two kinds of beds, and he records the fact that the garden-beds, and not the mounds, form the most prominent, and by far the most striking and characteristic antiquarian monuments of this district of country. Another writer of early date, still resident of our state, John T. Blois, published, in 1839, in his "Gazeteer of Michigan," a detailed description, with a diagram of one kind of the beds.

The former speaks of "enigmatical plats of variously-shaped beds," and further, "nearly all the lines of each area or sub-area of beds are rectangular and parallel.

Others admit of half-circles and variously curved beds with avenues, and are differently grouped and disposed."

The latter says, the beds "appear in various graceful shapes. Some are laid off in recti-lineal and curvi-lineal figures, either distinct or combined in a fantastic manner, in parterres and scolloped work, with alleys between, and apparently ample walks leading in different directions.

Mr. Hubbard gives descriptions of eight different classes of beds, and quotes Mr. Schoolcraft, who says that "the beds are of various sizes, covering generally from twenty to one hundred acres." He says some are reported to embrace even three hundred acres, although he does not cite any particular place where they were as extensive as this. He refers to a number of old settlers who were familiar with them, and mentions the localities where they formerly existed.

"The so-called 'garden-beds' were found in the valleys of the St. Joseph and Grand River, where they occupied the most fer-

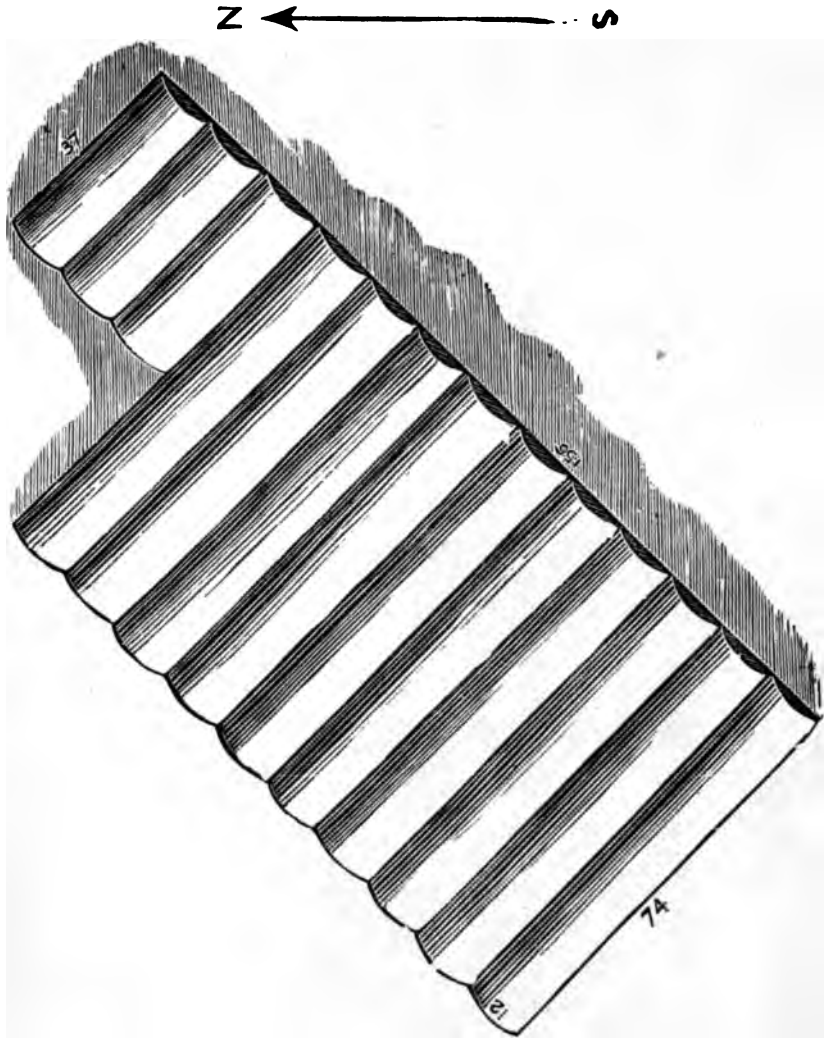

Figure 1. Scale 32 feet to 1 inch.

Ancient Garden Beds, Grand River Valley, Michigan.

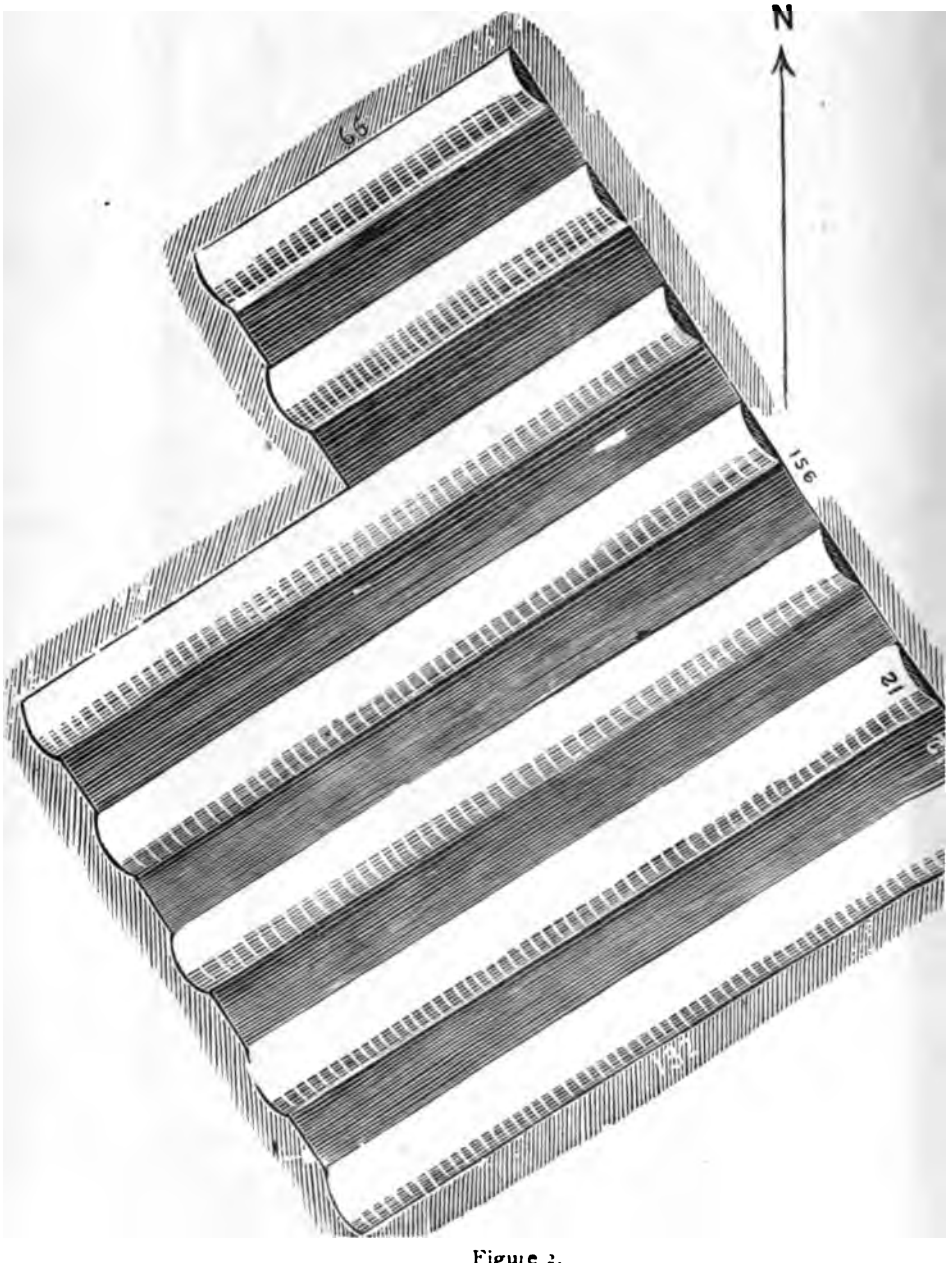

Figure 2.

Garden Beds, Grand River Valley, Michigan.

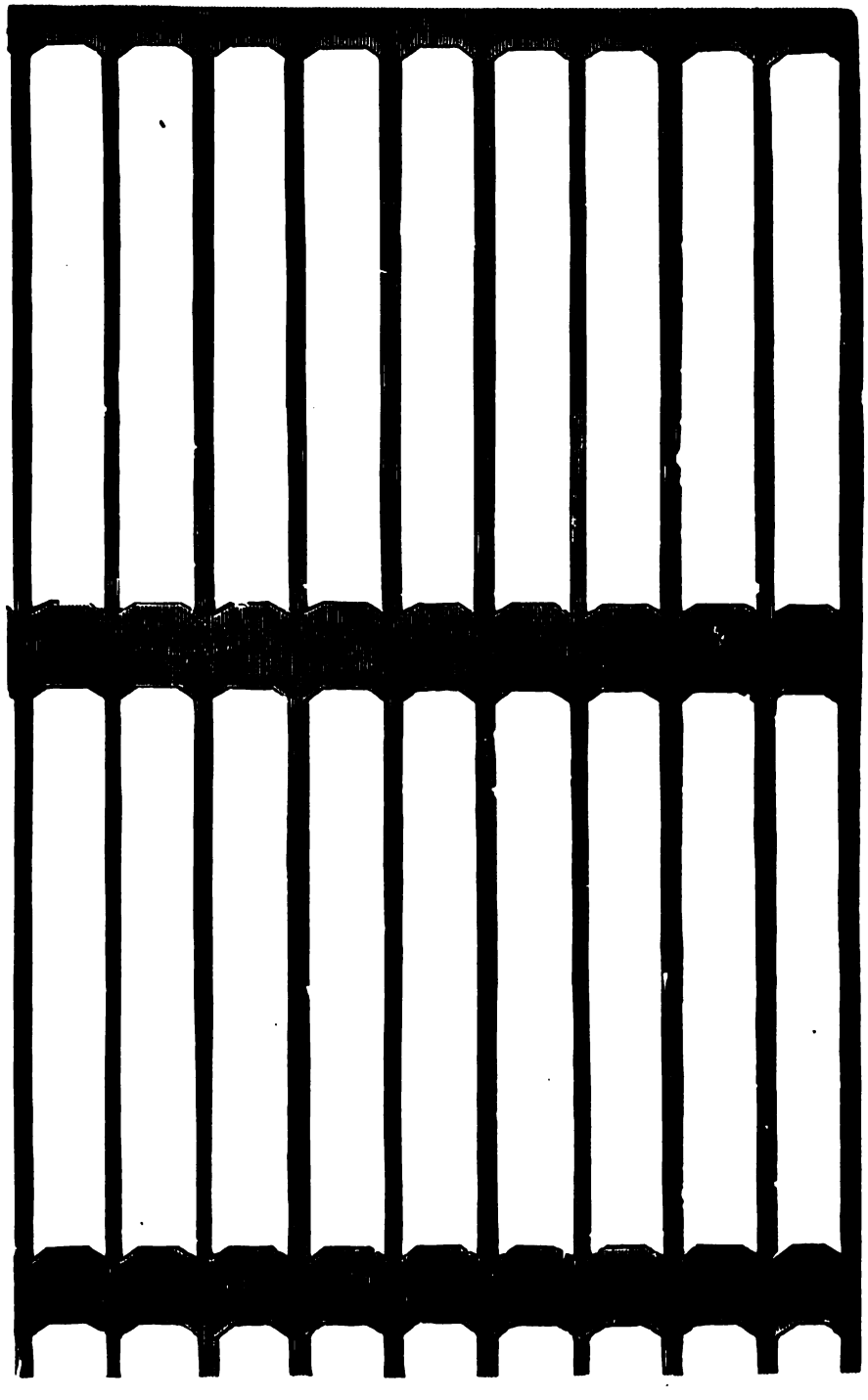

Figure 3.

Ancient Garden Beds, St. Joseph River Valley, Michigan.

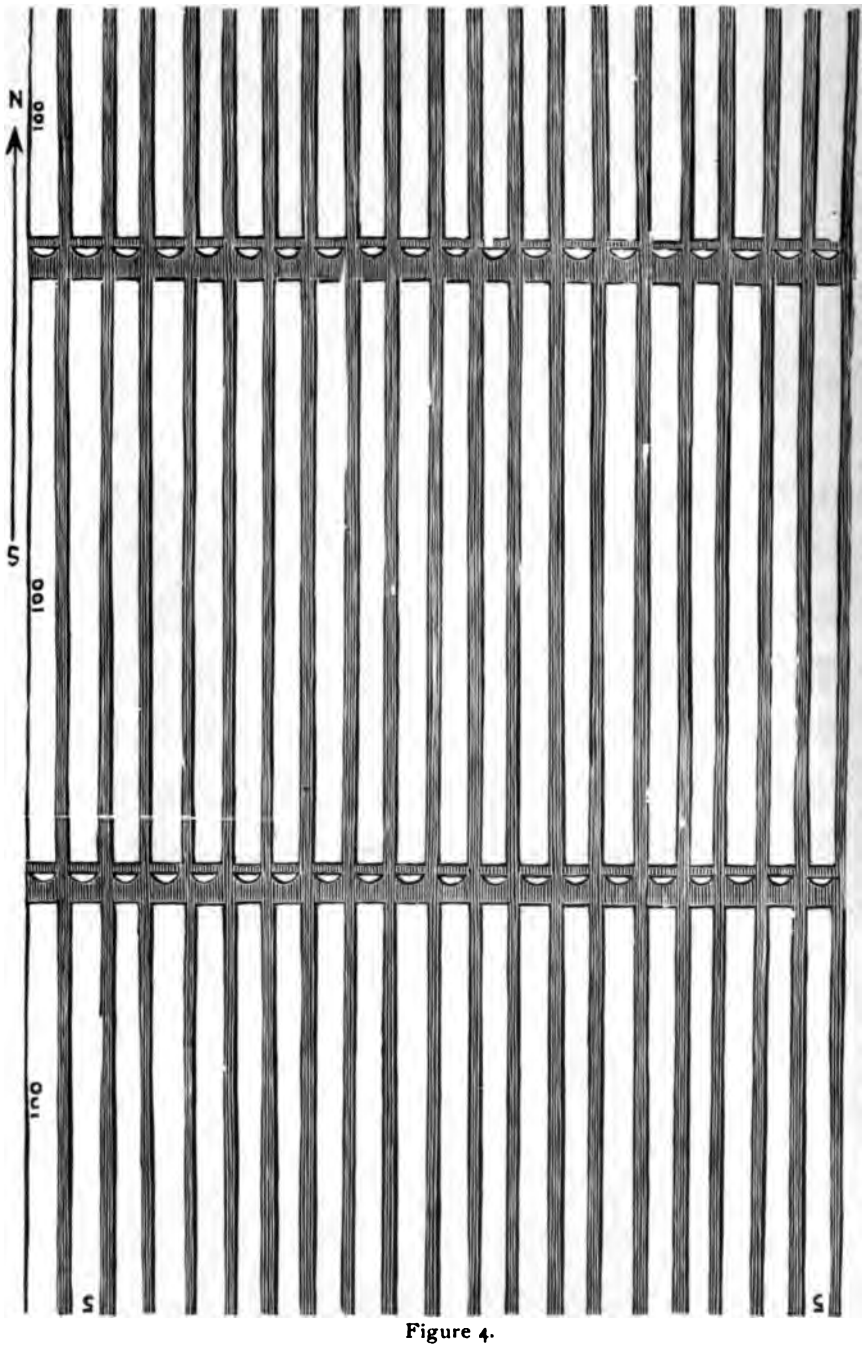

Figure 4.

Ancient Garden Beds, St. Joseph River Valley, Michigan.

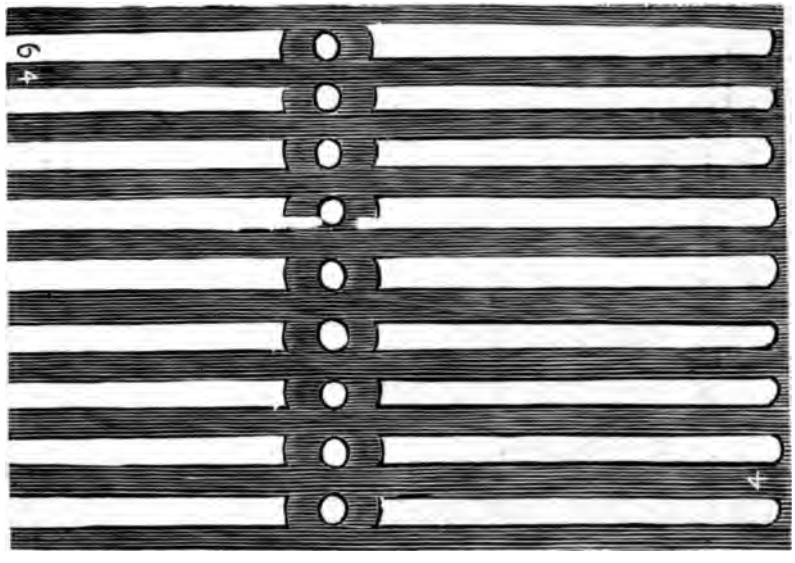

Figure 5.

Ancient Garden Beds, Western Michigan.

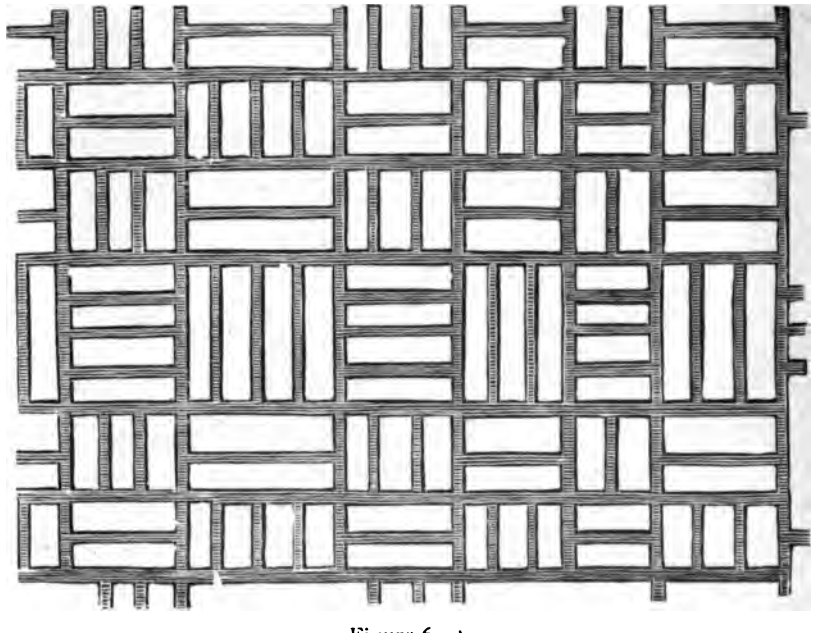

Figure 6—A.

Ancient Garden Plats, Kalamazoo County, Michigan.

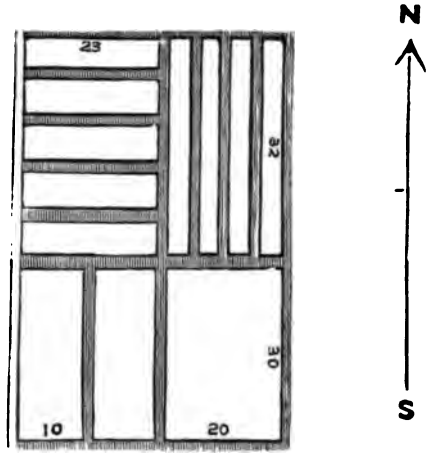

Figure 6—B

Ancient Garden Plats, Kalamazoo County, Michigan.

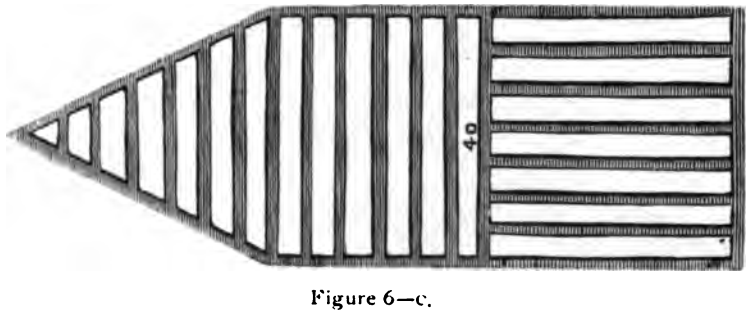

Figure 6—C.

Ancient Garden Plats, Galesburg, Michigan.

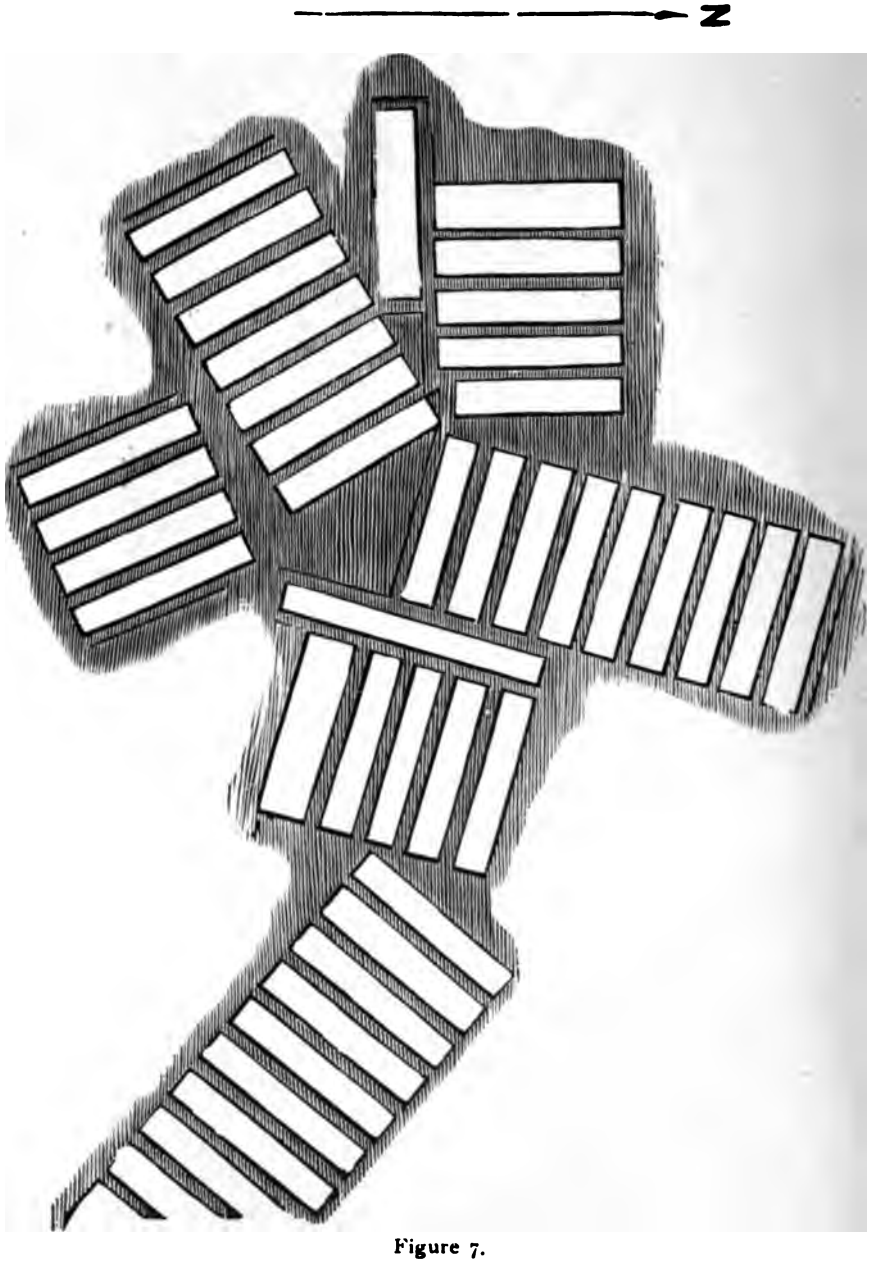

Figure 7.

Garden Beds on Prairie Ronde, Michigan.

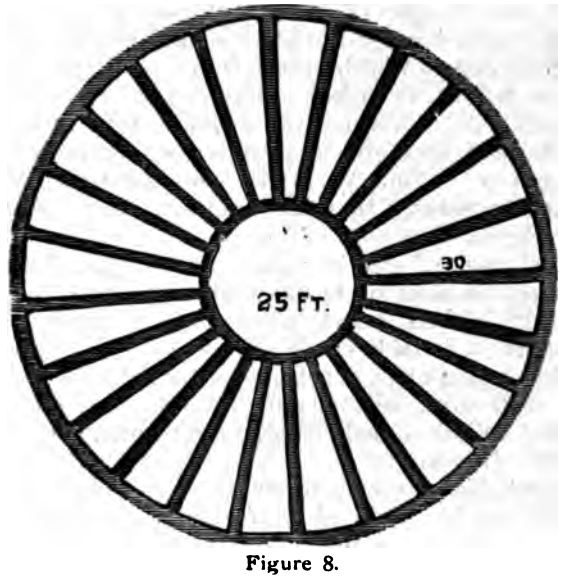

Figure 8.
Ancient Garden-Bed, Kalamazoo, Michigan.

tile of the prairie lands and burr oak plains, principally in the countries of St. Joseph, Cass and Kalamazoo. They consist of raised patches of ground, separated by sunken paths, and were generally arranged in plats or blocks of parallel beds. These varied in dimensions, being from five to sixteen feet in width, in length from twelve to more than one hundred feet, and in height six to eighteen inches. The tough sod of the prairie had preserved very sharply all the outlines. According to the universal testimony, these beds were laid out and fashioned with a skill, order and symmetry which distinguished them from the ordinary operations of agriculture, and were combined with some peculiar features that belonged to no recognized system of horticultural art. In the midst of diversity, sufficient uniformity is discernible to enable me to group the beds and gardens as in the following:

1. Wide convex bed in parallel rows, without paths, composing independent plats. Width of beds, 12 feet; paths, none, length, 74 to 115. (Figure 1).

2. Wide convex beds in parallel rows, separated by paths of same width, in independent plats. Width of bed, 12 to 16 feet; paths, same; length, 74 to 132 feet. (Figure 2).

3. Wide and parallel beds, separated by narrow paths, arranged in a series of plats longitudinal to each other. Width of bed, 14 feet; path, 2 feet; length, 100 feet. (Figure 3).

4. Long and narrow beds, separated by narrower paths, and arranged in a series of longitudinal plats, each plat divided from

the next by semi-circular beds. Width of bed, 5 feet; path, 1½ feet; length, 100; height, 18 inches. (Figure 4).

5. Parallel beds arranged in plats similar to class 4 but divided by circular beds. Width of bed, 6 feet; path, 4 feet; length, 12 to 40 feet; height, 18 inches. (Figure 5).

6. Parallel beds, of varying widths and lengths, separated by narrow paths, and arranged in plats of two or more, at right angles N. and S., E. and W. to the plats adjacent. Width of bed, 5 to 14 feet; paths, 1 to 2 feet; length, 12 to 30 feet; height, 8 inches. (Figure 6).

7. Parallel beds of uniform width and length, with narrow paths, arranged in plats or blocks and single beds, at varying angles. Width of bed, 5 feet; paths, 2 feet; length, about 30 feet; height, 10 to 12 inches. (Figure 7).

8. Wheel-shaped plats, consisting of a circular bed with beds of uniform shape and size radiating therefrom, all separated by narrow paths. Width of beds, 6 to 20 feet; paths, 1 foot; length, 14 to 20 feet. (Figure 8).

3. The third class of tokens to which we shall call attention is the cornfields which are found in great numbers in this region. Many of these were associated with emblematic mounds, though Dr. Lapham maintains that they belong to the later Indians rather than to the Mound-builders. On this point we would say that deference must be paid to Dr. Lapham's judgment, as he was an excellent observer and was very careful and conscientious in his statements. Yet we take the ground that the cultivation of corn existed at different periods, and was not peculiar to the Indians alone. Dr. Lapham makes four periods of occupation: first, that marked by the effigies; second, the period of the garden-beds; third the period of the cornfields; fourth, the period of modern settlement.

We have no doubt as to the successive occupation of the soil, but we question whether this division will hold, for the builders of the mounds were just as likely to have been agriculturalists as the Indians, and the people who built the garden-beds were very likely to have been the builders of the effigies. One argument has been used by Dr. Lapham which seems to have some force. He says that at Indian fields, near Milwaukee, there was a spot of ground where the mounds were covered with garden-beds, the rows which were seen upon the level having been continued over the mounds, and he thinks that the people who built the mounds could not have desecrated them by so placing the garden-beds upon their surface. We acknowledge that there was a sacredness to the effigies, but we doubt whether the pursuit of agriculture in their immediate vicinity would have been considered as desecrating them.

A still more forcible argument is taken from the presence of an effigy in a cornfield. This effigy was discovered by Dr.

Lapham at Milwaukee (Sherman's addition, block 33). (See figure 97.)

The description of it is as follows: "The ground is covered by the corn hills of the present race of Indians. In the midst of these hills was an effigy. It may be considered as a rude representation of a wolf or fox guarding the sacred deposits in the large though low mound before it. Both of these are of so little elevation as to be scarcely observed by the passer-by, but when once attention is arrested, there is no difficulty in tracing their outlines. The body of the animal is 44 feet and the tail 53 feet in length."

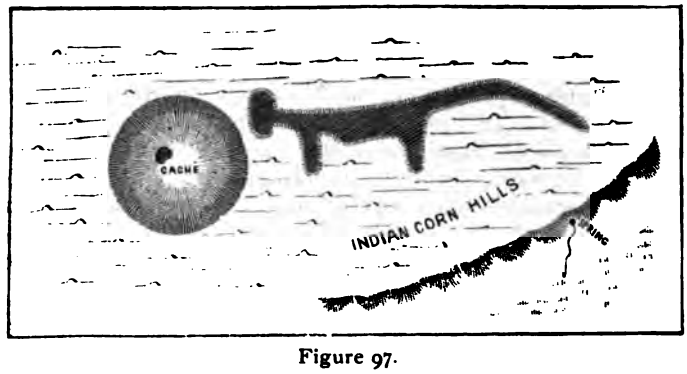

Figure 97.
Wolf in a Cornfield—Lapham.

This is a remarkable specimen, as it illustrates the fact that there was a succession of races. It has been maintained by some that the Indians were the same people as the Mound-builders. We do not deny that they were a similar race and that their mode of life resembled that of the preceding people, but the evidence is strong that they were not the same people. They may have cultivated the same spots of ground and buried their dead in the same tumuli. They may have occupied the same localities, and depended upon the same resources for their subsistence, but the builders of the effigies possessed evidently a different cultus. We, perhaps, would call them Indians, but they were Indians of an unknown tribe. The cornfields which covered and obscured this effigy are, at least, suggestive of this point.

It seems singular that this effigy should be in the midst of the field, and that it should be represented as guarding the mound wherein were placed the caches of the Indians, the corn hills having been placed upon the effigy, and the pits dug into the mounds, but it shows that the ideas of the people were different. The locality is one which illustrates the points of similarity and of difference between the two people. The Indians had no superstition in reference to the protective power of the effigy and did not hesitate to reduce it by cultivation. They ordinarily

depended upon secrecy for the safety of their grain. On the other hand, the Mound-builders placed effigies in the midst of their fields and erected mounds as places where they could store their grain, and depended upon the fetichistic character of the effigy to protect it.

There was, as Mr. Lapham says, little sense of the sacredness of the emblems, and a very different state of feeling in reference to them, among these later tribes. Our point is that these corn hills were the work of the later Indians, but the garden-beds were the work of the emblematic Mound-builders. On this point we refer to the fact that nearly all of the garden-beds are associated with emblematic mounds, but there are many places where cornfields are found and no mounds discoverable in the vicinity. The author has seen cornfields in a number of localities; at New London, on the Wolf river; at Madison, on the south bank of Lake Mendota; at Lake Koshkonong, and in several other localities. In all of these places the evidence was that the cornfields were the works of the later Indians. There are, to be sure, a few places where cornfields may be seen associated with effigies. One such was discovered by the author, near Kilbourn City. The field was overgrown by a forest of maple. There were in the vicinity a number of emblematic mounds, and the appearance of the effigies would indicate that the two were contemporaneous and were designed as guards or fences to the cornfields.

III. We turn, then, to consider the association of the emblematic mounds with the agricultural works. We shall treat this under several separate heads: 1st, the location of the garden beds and cornfields in relation to the emblematic mounds; 2d, the evidence that they were connected with the effigies as fields are with our modern villages; 3d, that there were provisions made for their defense by placing effigies in the midst of the fields, and 4th, that all of these furnish very striking illustrations of the real life of the effigy builders. The agricultural works of Wisconsin are very important, for they disclose the use of the emblematic mounds as nothing else can; but the points which we have made brings before us a new use of these effigies, and shows that there was a practical purpose served by them. The shapes and attitudes of the effigies have occupied attention in several papers. In some of them it was intimated that the effigies were placed as guards for villages and as screens for hunters, and in some were used as guards or protections to caches, but the connection of the effigies with the cornfields is even more suggestive.

There is no doubt but that these works were erected for some practical purpose, and that they are to be connected with the real life of the people who erected them. The strongest evidence that such is the case is furnished to us by the fact that there are so many tokens of an agricultural life found among these mounds.

This, to be sure, is only one feature. The other elements, such as game drives, village enclosures and defenses, present as clear a picture of the condition of society as these, but this is a feature which interests us on account of its familiarity, and because it discloses native life so fully.

1. The location of the cornfields and garden-beds is worthy of especial attention. There are three methods in which these beds seem to be connected with the effigies, and to each of these we shall call attention in their turn. We have referred to the garden beds at Racine. (See map.) Our impression is that these beds were connected with a village site; the village site having been upon the hilltop, near the bank of the river, and at such a place as to secure a defense from the natural situation of it. There are many mounds on this hilltop, some of them burial mounds, others defensive in their character, and still others mounds or circles which were probably used for dances. In connection with this group there are graded ways, showing that the people were accustomed to pass frequently from the hilltop to the valley of the stream below. These graded ways were guarded by circular walls and by effigies, and near them there were look-out mounds. The impression is gained from the locality that the villagers depended upon their location for defense, but that the subsistence was gained in part from these garden beds, which were not far away and access to which could be gained either by the river or by a trail. There are mounds on the points of the land surrounding this village, one of which seems to be a lookout. The bluff is precipitous, but on the summit of the bluff, opposite, a high conical mound is placed in just the spot where an outlook can be gained along the valley of the stream in both directions, as if the purpose was to defend the village site in that way. A corresponding look-out mound is also placed on the point of the bluff to the west, but commanding a view further up the stream. The garden beds are north of these in the valley of the stream.

Here are two groups of mounds. The one on the isolated hill abounding with effigies, and the other on the river bluff where only burial mounds are to be found. These two groups have been described by Dr. Hoy. He says, on "the point of the high bluff, marked 'A' on the map, is a mound six feet high, in connection with an embankment 235 feet long. This embankment is two feet high and 12 feet wide at the point nearest to the mound, and tapers gradually to a mere point at its western extremity, near a spring. I am informed that there were formerly other works connected with this, which have been obliterated by cultivation and other improvements."

"Lapham's Antiquities," pp. 16, 19, 27, 57, 61, 72. Plates IV, VIII, XXI, XXXVII.

"A little further east, on the same side of the river, is a single low mound, occupying the projecting point of a bluff. Opposite this, on the north bank of the stream, there is a cluster of mounds crowded into a small space, bounded on the east by a long mound, and on the west by a 'lizard mound' 80 feet long." "The remaining works, situated on the bluff north of these last-named, consists of three lizards, one oblong, and six conical tumuli, and three enclosures. The two semi-circular embankments are situated on an almost inaccessible bluff 80 feet high. The embankments are slight, not over one foot in elevation, and 10 or 12 feet broad, but perfectly distinct and well defined. There is some evidence that they formerly constituted *graded ways* leading to the river. They are tolerably well situated for works of defense, but without the addition of palisades could afford no protection. The small circle, from its size and position, could scarcely have been designed for a work of defense. The 'lizards' are much alike, from two to two and a half feet high; from 12 to 14 feet broad at the shoulders, the tail gradually tapering to a point. The longest is 130 feet and the shortest 80 feet in length." We excavated fourteen of the mounds—some with the greatest possible care; they are all sepulchral, of a uniform construction, as represented in figure 2. Most of them contained more than one skeleton; in one instance we found no less than seven." The author visited the locality in 1882, in company with Dr. Hoy, and formed the impression from the locality and the mounds that there were two periods of occupation, the one belonging to the effigy-builders and the other to a later people, the village of the emblematic Mound-builders having been placed on the isolated hill, but that of the later race having been on the bluff, where the cemetery now is. This may be a mere surmise. The mounds may all have belonged to one race, the village having been on the hilltop, and the burial place on the bluff. The location of the garden-beds is, however, suggestive. These were in a spot which was hidden away from observation on the rich bottom land on the south side of a high bluff. They were scattered over the surface, and among them there were traces of caches or pits where the products were stored. There were growing near them large elm trees. The trees may have been growing when the garden-beds were planted, but with the bluffs sheltering the spot from the cold winds and the rich soil favoring the products and the absence of all underbrush from the valley there would be no need for cutting down the trees, and the impression is that they were the garden-beds which belonged to the ancient village of the emblematic Mound-builders.

No description of these garden-beds was ever given, so that we do not know their dimensions or their shapes, but from the few plats which we have seen we should say that they were

very similar to those described by Mr. Hubbard, except that there were no circular or wheel-shaped beds. They cover the space of about half an acre.

Another locality where garden-beds have been seen is at Mayville. Here are many groups of emblematic mounds. The situation of the beds is similar to that at Racine. They are found in a rich valley just beneath one of the long ridges which constitutes a peculiar feature of this region. There are in the vicinity groups of effigies the object of which is at present unknown, but doubtless they all served the convenience of the prehistoric people. This is a region where wild game formerly abounded, as it is traversed by one of the branches of the Rock river, and is but a few miles away from Lake Horicon, where wild birds of all kinds are shot even at the present time. We shall not undertake to describe the effigies or to fix upon the object or use of any one of the groups, but we call attention to the garden-beds in the midst of the effigies. It would appear from this that the builders of the emblematic mounds, like the later Indians, led a mingled life. They both depended upon the agricultural resources and natural products, and so were hunters as well as agriculturalists. This group of mounds has been described by Dr. Lapham, and

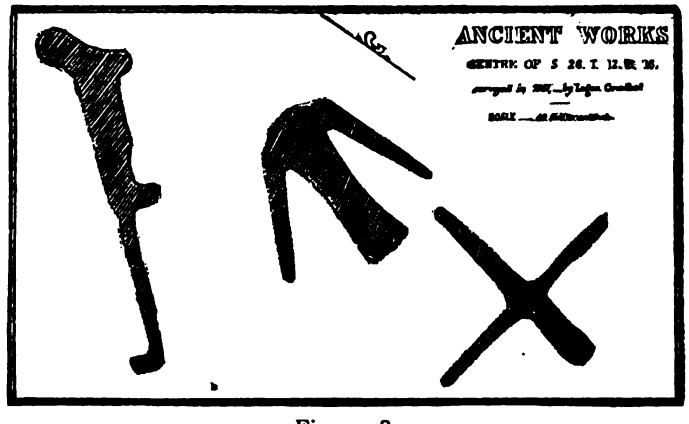

Figure 98.
Effigies at Mayville.

several plates devoted to it. We give a map of the region, and call attention to the relative position of garden-beds and mounds. We do not attempt to explain the groups, but would refer to them as evidence that here was the residence of a clan or tribe.

We give several cuts to illustrate the effigies which are found in the vicinity. One is the picture of a group of effigies which was situated on the opposite side of the river and two or three miles away from the garden-beds. The other two are effigies which were found in the midst of a large group which was upon the

same side of the river. Dr. Lapham's description is as follows: "Directly north of Mayville, on the northeast quarter of S. 14, T. 12, R. 15, on the eastern declivity, on the base of a ridge, I saw some traces of the former garden-beds, with intermediate paths. In one place where the beds were examined they were 100 feet long, and had a uniform breadth of six feet, with a direction nearly east and west. The depressions or walks between

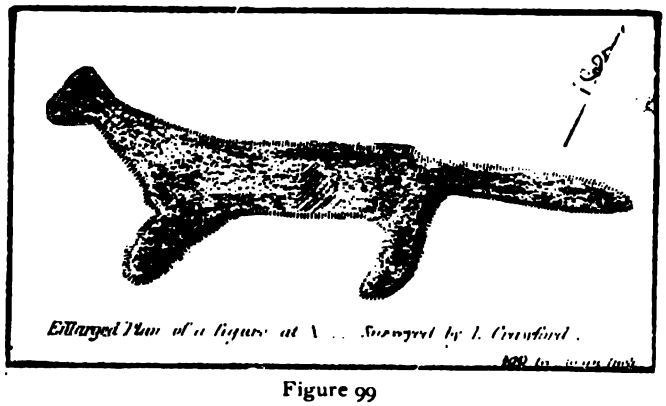

Figure 99
Fox at Mayville.

the beds are about 100 feet deep, and 15 inches wide. The next group of mounds noticed was at the northern extremity of a ridge near the lower dam and mills, northwest quarter of S. 14. There were five elevations, of a circular form; three of them with a projecting ridge, gradually extending to the extremity, being of the kind called "tadpoles." We here call attention to a note, which is as follows: "This form may possibly have been intended to represent the gourd, an ancient American plant, doubtless much used by the Mound-builders." On the adjoining tract, northeast quarter of S. 15, are some round mounds, among them some of larger dimensions than usual, being from 12 to 14 feet in height and from 60 to 65 feet in diameter. These several groups form a regular row a little west of Mayville. There is a similar arrangement the same distance south of the village, commencing at a group of these mounds near Sec. 26, which were very accurately delineated and surveyed by Mr. Crawford. This group is the one given in the cut. Mr. Lapham calls one bird a cross and the other the trunk and arms of the human body. The animal is 90 feet distant, is too near the man on the plate. It differs from most others of similar form in its slender body, rounded head and recurved cordal extremity. The body is for most of its length 2½ feet high, the legs, head and tail 1½ feet high, but the tail gradually slopes down to about six inches at the extremity. On the northeast quarter of S. 27 is a group of four mounds of which one has the unusual form represented in the cut.

"The next group is three miles southwest of Mayville, on the northwest quarter of the same section, and occupying the extremity of one of the remarkable ridges so often mentioned," and is represented by a cut. (See figure 21).

We quote again: "It will be observed that all the figures of this group have their heads in one general southwesterly direction, except the cross, which, as is almost always the case, has a course directly opposite. From the extremity of the highest mound, which is on the highest ground, a general view of the whole is obtained, and this may perhaps be regarded as the watch-tower or look-out station. It is 400 feet high."

As to the question whether garden-beds and emblematic mounds were contemporaneous we have this to say, that they generally seem to be contemporaneous. As an example of the association of the two classes of works, we would refer to the series of works which Dr. Lapham has described.

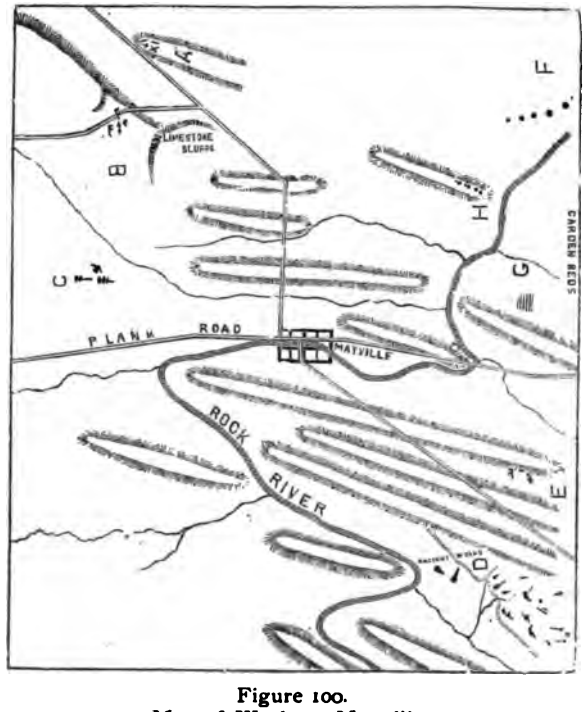

Figure 100.
Map of Works at Mayville.

The situation of the garden-beds in the midst of this series of effigies suggest the idea that there was a permanent village residence in this locality, and that the inhabitants resorted to the various hilltops for their burial places, but placed their cornfield and garden in the valleys. The groups may have been, some of them, used for game-drives, and others for places of assembly.

We call attention to the map and the cuts, for they give indications that here was a residence of a clan. (Figure 99 and 100).

It will be noticed that there are in this locality many groups of mounds, but they are all connected; the distance between them not exceeding five miles. The topographical character of the country is peculiar. The region is somewhat isolated, but there is a communication between the different parts of it by way of the valleys which intervene between the ridges and along the channels of the river and its branches, so that it would seem that it was the abode of one particular class of people, and on the supposition that the mound-builders were like the Indians in a tribal state, we should say that here a clan once lived. We do not pretend to say what the object of the different groups of effigies was, but we have no doubt that they marked the localities where the customs of this clan were carried out. Probably there was a village site here, and near the village a burial place (H), there were also hunting grounds (D) and places where religious ceremonies were performed (B); there were provisions for defense, such as look-out stations (A), and along with these was the field where the clan raised its vegetables and garden products (G), the garden-beds being clan property and conducted on the communistic system. The effigies may have been clan tokens, but under the peculiar religious system which prevailed they may have served also a practical purpose, the mechanical contrivance and the fetichistic character of the effigies having conspired to make them useful in two ways. In reference to the garden-beds there was but one use: They were erected for horticultural purposes. On this point all will agree.

The effigies are expressive of the totem system of a clan. The fox and wolf, being the predominant form, there is no doubt that it was the settled and permanent abode of some clan which bore a name known to the clans surrounding.

3. The next point we shall refer to will be the assoication of the emblematic mounds with garden-beds, with a view to the defense which the effigies secured.

The protection of the garden-beds from the incursion of wild beasts would be an object with people who dwelt in the midst of the forest. We have been informed by the early settlers that one of the great hindrances of agriculture in a new country comes from the incursions of wild animals. There are many animals which come out from the forests and commit great ravages. These depredations do not come from the wood-chucks alone, but the bear and coon and many other creatures. It was the custom with the Indians to place rude hedges or brush fences around the cornfields, but with the Mound-builders there seems to have been a more permanent arrangement. The association of the garden-beds with the emblematic mounds was partly for defense.

We give a map of a locality which has been referred to before, namely, that at Indian Prairie, a few miles north of Milwaukee. The name is taken from the fact that there were cornfields here, and that the Indians were accustomed, even after the settlement of the country by the whites, to return to the ground and camp here. There are in the vicinity, the traces of former cultivation, and in the midst of these, groups of effigies the location of which suggests the idea that they were placed here with a view to defense. The peculiarity of the spot is that there was an open prairie here in the midst of a forest, showing that it had been long occupied, and that the fields were not merely the fields of the Indians, but of the Mound-builders as well.

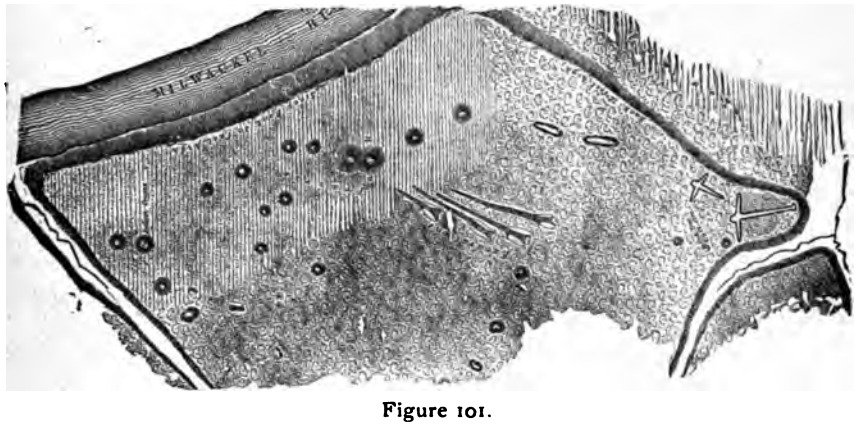

Figure 101.
Map of Works at Indian Prairie.

Dr. Lapham describes it as follows: "We next find in S. 29 and 30, in T. 8, R. 22, on the west side of the river, at a place usually known as Indian Prairie, about five miles north of the city of Milwaukee, a very interesting system or group of works. They are situated on a beautiful level plain elevated about thirty feet above the river, which runs along the eastern border. The bank of the river is nearly perpendicular, forming a safe protection against attack from that direction. It may be seen from the map presented, that these works are further protected on the north and south by deep ravines. The works are all included within these natural defenses. Whether they were ever protected on the west seems doubtful. No trace of embankment or ditch could be found nor any indication of other modes of defense usually adopted by uncivilized nations. There may have been defenses of wood long since decayed. There are two principal mounds situated near the middle of this space. They are both fifty-three feet in diameter at the base, where they almost touch each other, and eight feet high. The southern one has a level area of twenty-five feet in diameter at the top. It often occurs in a group of works like this that one mound is erected on the

highest position, from the top of which the whole may be seen. These may be called the 'observatories,' a name that in this case belongs to the mound with the level area. It may also have been the place of sacrifice or altar mound; but of this we can only judge from the analogy in form and position to similar works, which elsewhere were undoubtedly used for that purpose. Surrounding these were numerous tumuli of a circular form, the exact relative positions of which were ascertained by survey, and represented on the map. No definite system or order of arrangement was observed, as will be evident on inspection. But what marks this locality as one of peculiar interest is the discovery of five works of excavation of regular form, being the reverse of the usual works. Instead of an embankment of earth thrown up we have here a cavity in the ground. Four of the excavations lie in a southwest direction from the two larger central mounds. In approaching the former from the latter a small trail or path is discovered, which gradually becomes larger and deeper until it leads into a sunken area, composed, probably, of the earth thrown out of the earth at the excavation. Upon looking back it is perceived that this pathway goes direct to the mounds. (See figure 101.) There are usually three curved entrances to each excavation, as shown in the figures. One excavation in the group differs from the rest in that it lacks the long guarded way or approach leading toward the mounds, though the principal openings are toward the "observatories." With our present limited knowledge of the people who constructed these works it would be idle to attempt to conjecture to what purposes they were made."

The description by Dr. Lapham is given at length, because the locality is an important one, and because it illustrates the point which we have in mind. We connect the effigies with the garden-beds, Dr. Lapham says, "that the mounds were covered with these peculiar signs of cultivation," and thinks that this proves the garden-beds to have been of a different age, but the association of the Intaglios with the beds illustrates our point. The cornfields were remote from the Intaglios, but the garden-beds were in the immediate vicinity, and we think were contemporaneous. We consider that the object of the pits was to protect the garden-beds, and that they were placed in the midst of the field, with their accompanying observatories, for this purpose. We hold that the protection of the beds was secured in this way.

We have referred to defense of agriculture as one object when speaking of the mounds near Kilbourn City. The same may have been the object of placing the effigies around the edge of the bluff at Honey Creek. These effigies surround enclosures which may have been occupied for cornfields. They would answer the purpose of walls or fences, but there was another method of protecting the fields, and that is by digging pits in the midst of them where hunters could conceal themselves and watch

the wild animals as they made incursions upon the crops and then shoot them.

By this means they would not only secure their crops from the marauding denizens on the forest, but would also secure game, without the trouble of hunting for it. Nothing shows the stupidity of certain animals, such as the bear and the coon, as the persistency with which they will return to cornfields in order to satisfy hunger. Other animals can be driven away and hedged out, but nothing will keep off these depredators. The only way is to watch for them and shoot them. A cornfield is to them what a sheep fold is to the wolf, and a pig pen is to the panther. Early settlers know what boldness all of these animals of the forest have when their appetite is tempted. The explanation of the pits or Intaglio effigies is found here. It is well known that Intaglio effigies formerly existed in various parts of the state.

Figure 102.
Intaglio Effigy at Indian Prairie– Lapham.

The description of the works by Dr. Lapham confirms the point, but we add our explanation. The map will exhibit the arrangement of the effigies in relation to one another and to the surrounding region. The accompanying cut will also illustrate the manner in which these intaglios were constructed. (See figures 102 and 103.) It will be noticed that there are excavations which reverses the order of construction of the effigies. The shapes of the animals are clearly seen, but the effigies are intaglio rather than bas relief. They are as correct in their imitations of animal shapes as are the embossed effigies, but they are altogether below the surface of the ground. There are, to be sure, embankments which rise above the surface, but these embankments only assist in bringing out the figure, as they make the relief more distinct. The embankments, however, served a double purpose. They made the effigy more distinct, and at the same time served as screens to persons who might be hiding in the pits. The imitative character of these intaglios are very marked. If an animal had been placed upon its side and pressed down into soft ground, and then taken up again, the mould which would be left would represent the form of the body and head and

tail, there would be a portion of the mud displaced, and this would project above the surface, forming a slight ridge around the body, but the tail would not displace anything. Such is the appearance of the effigies; the earth mould retains the shape of the animal, but the embankment is without any definite form. The intaglio is as purely imitative as if it was a mould, but the wall is merely a fragmentary heap of earth. The distinctively fetichistic character of the pits may be seen in the care with which the effigies were constructed. The mechanical contrivance was also admirable. The hunter could hide himself in the excavation and place his head at the openings between the embankments, and there watch the animals as they passed over the adjoining plats

Figure 103.
Intaglio Effigy at Indian Prairie.

of ground. The connection of the pit with the observatory would indicate that the hunter was in the habit of standing on the summit of the mound and watching the animals as they came out from the forest, but while the animals were passing down into the valley and up the hill he would go down the path and hide himself, so that the field would be apparently unoccupied. The number of the intaglio effigies would indicate the fact that more than one hunter was engaged in watching the game, and that a number of animals were in the habit of visiting the place. The shape of the effigies would indicate the kind of animals which were in the habit of committing depredations. The panther and bear are seen in the Intaglios. The same is true of the locality at Ft. Atkinson. Here, however, the Intaglio is in the shape of a panther and the mound is in the shape of a bear. The bear did not require as much secrecy, and was not as dangerous. Here the hunter was in the habit of running out and hiding behind a long mound or ridge, making the ridge a screen, but in the other place the whole process was conducted with stealth and by the excavations only. The protection of the garden-beds we consider to be the main object of the Intaglio effigies. S. D. P.

CORRESPONDENCE.

FOOTMARKS IN KENTUCKY.

Editor American Antiquarian:

The following information was given me by Prof. J. F. Brown, of Berea College, Ky., who personally examined the locality. It may prove of some interest: Sixteen miles in an easterly direction from Berea, Ky., on what is known as Big Hill, in Jackson county, one of the spurs of the Cumberland Mountains, is a strata of carboniferous sandstone on the very summit. A wagon road now crosses it, and in ancient times a trail crossed the hill in the same locality. Recent removal of *debris*, consisting of dirt and leaves, exposed a new section of this ledge, and showed very distinctly marked in the stones a series of tracks. Two of these are the tracks of a human being, good sized, toes well spread, and very distinctly marked; one or more bear tracks, and two resemble the tracks of a horse of large size.

E. A. ALLEN.

CONICAL MOUNDS IN EUROPE.

[Translated by A. S. Gatschet.]

Editor American Antiquarian:

Being an attentive reader of your AMERICAN ANTIQUARIAN, I beg you to accept some published studies upon some conical hills, frequent also in Europe and Asia. In one of these Schliemann pretends to have discovered Troy. Between these cones and the mounds, cones and pyramids of America there exists a connection, and it is of the highest importance to establish the natural and casual connection between these structures of *both* hemispheres. But the classical (Roman and Greek) archæology is moving in a too narrow circle, never lifting its horizon above the two classic countries. America was never discovered for our philologists! They are deaf for everything brought to light by prehistoric archæology. Even prehistoric archæology is still tied up to the belief derived from the Old Testament, that the largest part of the earth's surface had to be peopled by emigration. Nobody knows how often a country may have changed its inhabitants before the beginning of history; but all these nations have left relics of their manufacture on the soil. Our business is to classify this material with correctness, and divide it with its historic periods. Europe does not study enough what is discovered in America in this respect; men, beasts and plants may have immigrated from there into our European countries.

I propose to institute a comparison between our conic hills, tombs and pyramids with those of America, and would be much obliged to you for sending materials for the purpose. What I have sent is destined for publication in the AMERICAN ANTIQUARIAN, and more of my writings will follow. The *Museum Journal* (inclosed) contains in each of its bi-monthly numbers a summary of all publications of the best known archæological periodicals. E. BOETTICHER.

BERLIN, GERMANY, March 5, 1884.

BANGS AMONG THE INDIANS.

Editor American Antiquarian:

The article in your valuable periodical for March, with above title, may be further developed by consulting "Emory Report United States and Mexican Boundary Survey, Vol. I, 1857," also, "Contributions to North American Ethnology, Vol. III, 1877." In Emory's Report we find types of several Arizona tribes figured, including the Yumas, Cocopas, Pimas and Papagos. They are represented with the hair cut square across the forehead, just as the "bangs" of the more civilized Caucasian, the hair hanging down over the ears and behind. The Yumas are also represented holding large sunflowers in their hands, just as American girls did two years ago.

In "Contributions to North American Ethnology, Vol. III," by Stephen Powers, we find nine figures of California Indians, all with well-cut bangs, and hair otherwise like that of the Arizona Indians; but the California Indian faces are all represented as tattooed. We thus find that the civilized adopt fashions from the barbarians.

G. C. BROADHEAD.

PLEASANT HILL, MO.

ROCK PILES AND ANCIENT DAMS IN THE KLAMATH VALLEY.

In traveling through the Klamath Lake country one continually sees rocks piled up one upon the other in the most grotesque and singularly simple manner. They assume all kinds of shapes, and it is almost impossible to dislodge them, they are so stationary. The common form is where several flat and at the same time rounded rocks, the size of a hat or larger, are placed on each other to the number of four or five. We should say that the piling process is generally upon large boulders. There is quite a pretty story or legend connected with this rock-piling. Mr. O. C. Applegate says that some of the Indians claim that it is done by the children; that it is an emblem of bravery; that the children do it after dark, and that the one who goes the farthest from the lodge and erects a pile of rocks is considered the most brave. Others say it is done as a religious rite; and still others hold that it is done to mark a camp and show that it has been occupied. One thing that gives us reason to believe it is a religious rite is, that under no circumstances will any other camp or tribe disturb them. We found evidence of a race of people, of whom the present Indians at Klamath know nothing, who inhabited

the Klamath Lake country many years ago. All that remains are the ruins of dams, one of which is located on Link river, within a stone's throw of Linkville, and a number of others, notably, one on Lost river. The Indians claim no knowledge of the formation of these dams, and their symmetry of architecture show that they are not freaks of nature. We can not describe as well as we could wish the shape of the dam at Linkville. It is a semi-circle, pointing down stream, with a narrow channel extending some distance down stream.

The water barely covers the wall, but its outline is plainly visible. The only surmise we can make is that channels were used to put willow or reed nets in, and that the dam was built for fishing purposes. There is another very peculiur feature about Link river, and that is that it is occasionally blown dry. This must seem astounding to our readers, but such is the fact. It is caused by a steady wind blowing from the south and up the river—this through a seemingly canyon—and the waters of Big Klamath Lake roll up towards the north, and the water is literally all blown down toward the northern end of the lake, and there being but a shallow outlet into Link river, and the water being blown up the lake, leaves no water, and so the river runs dry. The shallow outlet of Big Klamath Lake has been caused by the aforesaid Indians, who wish to confine the waters of the lake for the sake of the tule lands. There is a movement on foot to remove these obstructions at the mouth of Link river. Such being done would decrease the depth of the lake a foot or so, and make thousands of acres of land arable that are now nothing but tule.—*Wm. J. Clarke, of Willamette Farmer.*

NEW VOCABULARIES SECURED.

Editor American Antiquarian:

According to your wish I send the following: August 8th I was sent to the Siletz Reservation, Oregon, to obtain linguistic and other information relating to the tribes at that place. I remained there from August 19th to October 29th, in which time the gains were as follows: Vocabularies of the languages or dialects of nineteen tribes and sub-tribes, ranging from 150 to 3,000 entries, exclusive of phrases, paradigms and a letter (epistle) dictated in the Tutu or Tutu tunne dialect (with an interlinear translation). A fragment of a Creation myth of the Tce-me tunne or Joshua gens told in English. Parts of it were told in Chinook and English by a man of the Mal-tun-ne tunne gens of the same tribe. The names and (approximate) locations of 270 villages, extending from the south side of the Klamath river, California, at the south, along the coast and the streams flowing into the Pacific, as far north as the Siletz river. A map of Western Oregon and Northwestern California, scale three miles to the inch, will soon be ready for the insertion of the locations of these villages. The names of the vocabularies follow:

Athabascan Family.—Smith River, (California) dialect, Chetcoe dialect of the Tutu, Johua and cognate gentes of the Lower Rogue River Indians, Naltunne tunne dialect, Mi-kwu-nu tunne dialect, Yu-kwi-tce or Euchre dialect, Kwa-ta-mi or Sixes dialect, Upper Coquille dialect, Applegate Creek dialect, Galice Creek dialect, Chasta Costa, *Shista kkhwu-sta dialect. II—Siuslaw dialect, Dialect of Umpqua Valley, nine entries, ditto of Umpqua Bay—over 600 words; Alsea dialect, Yaquina ditto. III—Mul-luk or Lower Coquille. IV—Ta-kel-ma or Upper Rogue River. V—Sas-ti or Shasta. VI—Klikitat. The Upper and Lower Coquille belong to

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*Ci-sta Kqwu-sta in *official* notation.

distinct stocks; the same may be said of the Upper and Lower Rogue River Indians, and, probably, the Indians of the Upper and Lower Umpqua. They have been confounded.

Recapitulation of the villages whose names have been gained:

I—California Tunne (Athabascan family)		14 villages
Oregon Tunne:	Chetcoe (on Chetcoe river)	9 villages
	Tutu, etc. (partly on Lower Rogue river)	34 villages
	Chasta Costa (on Rogue river or a tributary)	33 villages
	Upper Coquille (on Coquille river)	32 villages
II—Siuslaw (on Siuslaw river)		34 villages
Umpqua (on Umpqua bay and river)		21 villages
Alsea (on Alsea river)		20 villages
Yaquina (on Yaquina river)		56 villages
IV—Upper Rogue River		17 villages
Total		270 villages

Further details must be reserved for a future letter.

Yours, J. OWEN DORSEY.

RELICS OF COPPER FROM EASTERN PENNSYLVANIA.

Editor American Antiquarian:

In addition to the copper relics from Eastern Pennsylvania, mentioned by Mr. E. A. Barber in his article on "The Lenni Lenape Indians in Pennsylvania," on page 387, No. 6, Vol. VI. of THE AMERICAN ANTIQUARIAN, which are indeed rarely found, the writer would direct attention to a few known to him, and not noted by the above author. As native copper has been found in pieces weighing several pounds along the Connecticut river, and also in the state of New Jersey, it is not certain that they were brought here from the copper-producing region of the West, as Mr. Barber supposes.

Several of the specimens known to the writer are much corroded, caused, as they were found on the surface, by the action of the elements. No doubt many brought here have been obliterated in this manner.

The first is a small celt-like object, much oxidized, found by Mr. H. L. Illig, on the surface, near Millbach, Lebanon county, Pa. It is now in the collection of the Smithsonian Institution. For further description of the same see AMERICAN ANTIQUARIAN, No. 2, Vol. II, page 154. Copper is found in its native state in the Cornwall mines. A wonderful deposit of iron and copper are in the same county, although not in pieces large enough to produce implements.

No. 2 is the lowest or broadest part of a celt or chisel, much changed by the elements. It was found on the surface on a farm about four miles south of Reading, Berks county, Pa. At the base, or where its edge should be, it has a thickness of one-eighth of an inch. Its length may have been about three inches, with a width at cutting edge of about one and three-quarter inches. What now remains of it is two inches long; enough to show what its shape once was. If restored it would nearly resemble in shape a copper celt, shown by Mr. Charles Rau, as figure 126, on page 61 of No. 287,

Smithsonian Contributions to Knowledge. It is now in possession of W. J. Hoffman, M. D., of the Bureau of Ethnology, Washington, D. C., to whom it was given by the writer.

There is in possession of a farmer living several miles south of Reading, on the banks of the Schuylkill river, a gouge-like copper implement which the owner found on the surface on his farm, situated on the banks of the same river. It is over six inches long; its greatest breadth is in the middle, and it tapers almost equally toward both ends. It is said to weigh over a pound, and is in an almost perfect condition. Mr. D. B. Brunner has shown it as figure 92, page 147, in his "Indians of Berks County, Pennsylvania," with cutting edge upwards. He also mentions two more copper objects, found not very far from where the gouge-like relic was obtained, on the opposite side of the Schuylkill river, consisting of a chisel two and a half inches long, three-eighths of an inch wide at the top, gradually decreasing in width toward a fine edge. Another, a knife-like object, three inches long, with a projection opposite its cutting edge, for hafting purposes. Its edge is said to be convex, which, with the handle attached, resembles a knife indispensable to saddlers in their vocation. According to description given by the finder it must somewhat resemble a form shown by Mr. E. G. Squier as figure 56, page 179, in his "Aboriginal Monuments of the State of New York," which is a part of Volume II, "Smithsonian Contributions to Knowledge." This object was obtained by Du Paix and was "part of a deposit of two hundred and seventy-six, of like character, found buried in two large earthern vases, in the vicinity of Oxaca, and are of alloyed copper and cast." It is said that these objects were "exacted as an annual tribute from the various departments of the Mexican empire."

A person named Hankey obtained a copper axe, found on the surface near Friedensburg, a village about nine miles southwest of Reading, Pa. It passed into the cabinet owned by a Dr. Bertolette, from the same place. After his death the collection was taken from the county, and no one now knows what has become of it. So Mr. Brunner reports.

Here also are picked up, one might say, thousands of interesting stone objects. They are mostly found by the owners of farms and their help, who retain them for the sake of curiosity, not knowing how to preserve them. It is with much trouble, and only now and then that one scientifically interested in the antiquities of the aborigines is fortunate enough to possess them.

Last, but not least, is the finest object ever handled by the writer. It is a finely-wrought celt, or chisel, still showing marks of hammering, and was found on the surface on Chamber's Island, in the Delaware river, separating Pennsylvania from New Jersey, four miles above the Delaware water-gap, by Mr. John C. La Bar, in the year 1810, in whose possession it remained until his death, when it passed into the hands of his son Samuel, who retained it until he died, which event occurred in 1882. Mr. A. A. Shumway, of Philadelphia, then became the owner, and to him the writer is indebted for this interesting information, so kindly given. With the relic were

found at the same time beads and other small objects, perhaps the contents of a grave.

The writer is unable to say to which state the island belongs, or whether on the line which divides the two states. The implement, perhaps, did as much service in one as the other, and as it was discovered so near the line, its mention here would surely not be out of place. It is three and five-eighth inches long, and one and one-quarter inches wide at the top, and gradually increasing in breadth to its edge, where it measures two inches. Its thickest part is also at the top. Here it measures seven-sixteenths of an inch and tapers down equally on both sides to its cutting edge. It weighs nine ounces. A quarter of an inch above its cutting edge, on each side of its four angles, are cut into the implement, on one side, eleven notches, on the opposite edges twelve have been so produced. Perhaps this was done by the owner to add to its beauty. It is in perfect condition. Many stone objects in the writer's cabinet show such nicks, and they may have been cut into them by their makers to commemorate some incident. Perhaps this is also the reason for the creases in the celt. A. F. BERLIN.

THE GREAT SERPENT MOUND.

Editor American Antiquarian:

The series of effigy works, known under the name of "The Great Serpent Mound," is located on the land of J. J. Lovett, entry 1010, Brattain township, Adams county, Ohio The entire surrounding country is hilly, and the soil is poor, save a narrow strip of land bordering Brush Creek. There is a good, solid roadway leading from Sinking Springs to Locust Grove, and passing within three miles of the works. All the other roads are rough, hilly and bear but few indications of having ever been worked. These lands have received the storms of centuries, and instead of having received the benefit of the age of ice, were washed by the water as it poured forth from the terminal Moraine which passes through the northern part of the township (Brush Creek immediately north of Brattain. Hence the whole face of the country presents a continued series of hills and ravines, with the great knobs of Pike and Highland counties for a background.

I first visited the works during the month of June, 1883, in company with Prof. A. B. French. We did not go to make an examination, but simply sight-seeing. During the month of May, 1884, assisted by Rev. Jacob Tener, I made a survey of the whole work. By the direction of the Bureau of Ethnology, in company with T. E. Crider, C. E., Superintendent of Hamilton City (O.) waterworks, I made another survey, October 20, 1884. We were accompanied by Mrs MacLean, who made an oil painting of it for the Bureau.

As my first survey differs so little from the second, I here follow the notes made on the spot. The works are located, for the most part, on a tongue of land which may be likened to a crooked finger This spur is formed by the junction of a ravine with the main branch of Brush Creek, and rises to a height of about one hundred

feet above the latter. In form it is irregular on the surface, and bent crescent-shaped, with the point resting towards the northwest. On the east, the hill is steep, has a swelling curve, and admits of cultivation. On the west it is concave, and formerly was cultivated about one-third way down the declivity. When first discovered the whole was covered with forest trees. In 1860 the trees were blown down by a hurricane. For several years after, the land, for the most part, was cultivated, but the effigies bear no trace of having been disturbed by the plow.

The works are neither bold nor massive, and are so located as not to be seen until one is upon them. Even a view can not be obtained from the adjacent hill to the north which overlooks them. In order to take a complete view, it is necessary to pass along the entire length, from point to table land. Four different positions could be selected from which, put together, the works might be seen.

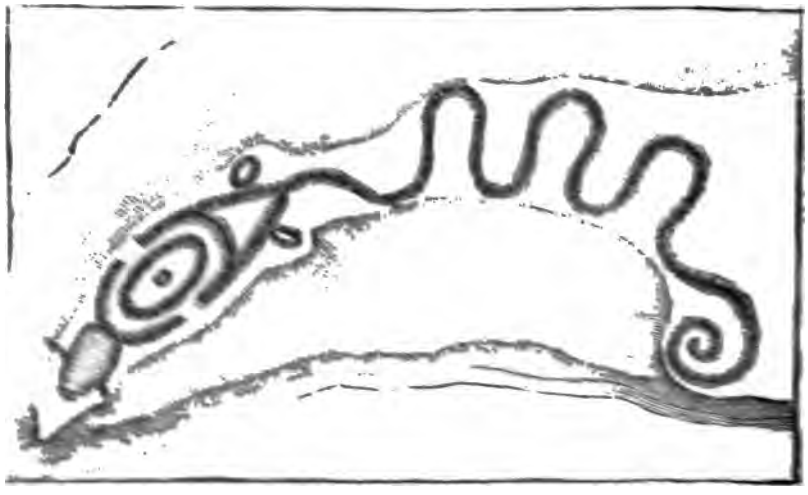
Commencing at the extreme northern part, we have a very sharp point of land, denuded, with the rock rising to a perpendicular height of forty feet above the bottom land. Thirty feet from the point of the rock is the end of the nose of the frog. The frog is in the act of leaping; the hind legs stretched backward, the fore legs outward and forward, the body drawn up at the back, and the head depressed. Those who have observed the frog leap will readily recognize the description. The apparent height is perhaps three and one-half feet. The head is fifteen feet long by twenty feet broad. It is considerably destroyed. The length of the body is forty-six feet. The right foreleg extends down the slope. For eleven feet it is bold. The left foreleg has been destroyed by denudation, except for a distance of five or six feet. The hind legs extend backward fifty feet. Between the two hind legs, and removed a distance of seventeen feet, the egg-shaped wall is inserted. This wall is about two and a half feet high, with no outlet, and the bank seventeen feet across at the base. This wall or egg is oblong, the length one hundred and thirteen feet, and the greatest breadth from bank to bank fifty feet. The interior is hollow. In the center is a low mound fifteen feet in diameter at the base. It has been disturbed. A hole in the center reveals burnt stone. The opposite end from the frog extends into the mouth of the serpent effigy. From the top of the bank of the egg to the same forming the mouth of the serpent is twenty-four feet. Calculating from the extreme point of the jaws the egg extends into the serpent's mouth a distance of sixteen feet.

The head of the serpent is hollow, and the height of the various banks is the same as the egg. The bank connecting the two extreme points of the jaws is one hundred feet long. The length of the head is seventy feet, followed by a neck seventy-five feet in length. The entire length of the serpent from the mouth embankment to the end of the coil is eleven hundred and sixteen feet, and the entire length of the whole series, from the point of the frog's nose to the end of the serpent's tail, is thirteen hundred and thirty-one feet. Leaving the neck we find the body makes graceful curves and undulations. Measuring through the center of the curve, and from bank to bank, the following distances were obtained: Fro

first to second curve, fifty feet; second to third, fifty feet; third to fourth, fifty-two feet; fourth to fifth, forty-six feet; fifth to sixth, fifty-two feet; sixth to seventh, fifty-two feet. The last curve is sixty-five feet long, rising to the main body, and passing into a triple coil, which measures seventy-five feet across. From the point of the neck, where the first curve forms, the land descends in both directions. The fifth and sixth curves are in the lowest depressions, about twenty feet lower than the coil, and perhaps fifteen lower than the head. The coil is on the table land, and tilts to the south. To the west it is on the edge of a bluff.

The summit of the tongue of land is entirely covered by the effigy. The curves reach from edge to edge, and the back of the frog is but the termination towards the summit. The hill does not have the appearance of having been graded for these works.

So far as the wings on either side of the serpent's jaws are concerned, they are clearly defined, and like the serpent are composed of a different earthy matter from the surrounding soil. Stone appears in various places throughout the works. The whole series apparently represents the following: A serpent is on the mainland, resting in a coil, hid by a slight depression, and protected by declivities at two points of the compass. While in this position it beholds a frog sitting near the point of land beyond. The serpent unfolds itself, glides along the edge of the mainland until it reaches the tongue or



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employed engravers know full well the difficulties experienced in obtaining correct cuts. All the errors were pointed out from a proof of the negative. The right foreleg should be thrown forward, similar to the left. The first curve after leaving the neck should be more acute. The coil should cover the entire space. The hips of the frog should be more prominent; the terminus of the tail points directly to the serpent's head. Otherwise we have a very good cut of the works. J. P. McLEAN.

HAMILTON, O., Dec. 25, 1884.

ERRORS IN THE LOCATION OF TRIBES.

Editor American Antiquarian:

The importance of greater exactness in American ethnology will, I hope, be my sufficient excuse for speaking of some inaccuracies in this respect in your November number:

Mr. Gratacap places one of the centers of Maya national life in Nicaragua (p. 372). This is an error. There was not a single Maya nation in that province. Those to whom he refers on page 374 were Nahuas, of pure blood and language. So, also, were the Pipiles of Guatemala, whom he mentions on the same page. Neither should appear, therefore, in a discussion of Maya civilization, both belonging to those three or four Nahuatl colonies who at some period not very long before the conquest emigrated to the South.

On page 385 Mr. Barber assigns the Susquehanna Valley to the Lenape. This, too, is an oversight. The researches of Dr. Shea and Prof. Guss have conclusively shown that the Lenape never possessed that valley. It was owned entirely by tribes of the Iroquois stock, whatever Heckewelder said to the contrary. Hence the pictographs, to which Mr. Barber alludes, are not of Algonkin origin, and this is an important point in their study, as the Algonkin and Iroquois pictographic systems differed.

D. G. BRINTON, M. D.

MEDIA, PA., Dec. 15.

EDITORIAL.

NOTES ON ENGLISH ARCHÆOLOGY.

A VOTIVE TABLET from the Temple of Baal, at Carthage, is in the possession of A. C. Bryce, of Duffryn, Eng., who purchased it at Tunis.

PROF. A. H. SAYCE has gone to Egypt to spend the winter, this year as last. It is not to be expected that he will come back empty-handed. The third edition of his work, "The Principles of Comparative Philology," is now in the press.

MR. W. S. RAMSAY has returned from his successful explorations in Phrygia, and is now busily engaged in sifting and arranging the material he has collected. He will be resident in Oxford next term, and will probably deliver a course of lectures on some branch of Greek antiquities.

DR. WARD.—*The Independent* learns from a note of President Washburn, of Roberts College, left Constantinople full of hope for the success of his expedition to Assyria. Mr. Haynes, of Robert College, and Dr. Sterrett, of the Athens School, joined him; and the party, at last accounts, were at Marash, examining the Hittite relics there. Dr. Ward was treated with all possible consideration by the authorities of Constantinople, and received all the papers necessary from the government to secure the ends he has in view.

THE NEW HALL of the British Museum, specially constructed within one of the inner quadrangles, and occupying almost the last morsel of its site hitherto uncovered, has been opened to the public officially; practically everybody has for a long time past been able to see it. This hall, which ranges with the Elgin room and the Egyptian gallery, contains the whole of the fragments of the Carian Mausoleum brought to England by Mr. Newton, now arranged in a very convenient manner and in complete order for inspection and study. The fragments of the chariot of Mausolus, its wheel of marble in particular, have been reconstructed in a very effective and correct fashion.

THE new departure at Cambridge, Eng., in establishing lectures on archæology and in the opening of the Museum of Archæology, under Dr. Waldstein, has stirred Oxford up to doing something of the same kind. The Arundel and Pomiret marbles will be arranged with better light in the university galleries, and some space in the Ashmolean Museum is to be devoted to the display of the vases, terra-cottas and other small classical antiquities. This museum has now a vigorous and competent advocate of reform in the new keeper, Mr. Arthur Evans, who did good work last summer in deciphering the now famous Brough inscription. A professor of archæology will be appointed in the spring.

THE EXCAVATIONS AT ZOAN.—Mr. James R. Lowell has been elected vice-president of the Egypt Exploration Fund. Mr. Petrie is to continue his investigations at Zoan. M. Naville has finished his book "Pithom," and is soon to search for "Raamses," the other Store City. Subscribers to this fund are entitled to the reports, and $8,000 is needed for the coming year.

COPE WHITEHOUSE.—The irrepressible Cope Whitehouse has undertaken to overthrow the Egyptian Exploration Fund. In the *Churchman* he has published a letter in which he gets the Canal of Joseph, the Serbonian Bog, the Site of Zoan, the Treasure-house of Pithom, and Heracliopolis terribly mixed up—on both sides of the river; no one knows where. Of course every one calls him authority on the subject.

XENOPHON.—The accuracy of this famous historian is illustrated by the fact that the very ridges and hills which are now recognized as prominent features in the geological strata of the otherwise level alluvial tracts of Babylonia, were described by him in his Anabasis so that they can now be identified. One hill alluded to by Xenophon is at present marked by the Khan or caravanseri called Iskanderia. The "battle of Cunaxa" was fought near this place.

ARMLETS—In a case appropriated at South Kensington Museum to the display of recent purchases from the Castellani collection, is a considerable quantity of ancient goldsmith's work of extraordinary beauty. Among these examples is the so-called Græco-Bactrian armlet, bought for £1,000, and one of the most precious examples of its kind in the world. It was found on the banks of the Oxus, and is attributed to the second or third century B. C. Recently the companion armlet, which retains in its decorations a small portion of the colored enamel to which much of its original splendor was due, has been placed in juxtaposition with the recent purchase.

PALEOLITHIC IMPLEMENTS AT READING.—The last number of the journal of the Anthropological Institute contained an article by O. A. Shrubele, on paleolithic implements from the gravel at Reading. He says: "How comes it, we may ask, that a great part of the deposit gives little or no sign of man's existence?" Yet, he goes on to say: I have not thrown away any flint, however slightly it may have been worked, if it has appeared to me to indicate intelligent intent and purpose. These do not find their way into museums, or much attract the notice of collectors. The author then gives a series of rude specimens, consisting of scrapers, knives for cutting tools, and wedges. Eleven specimens are depicted in the plate: one, a saw; three, a convex scraper—more likely knife; four, hand-polisher—more like a drill; five, wedge—a nondescript; six, multiplicable-grooved polisher—probably a scraping tool—no implement form in it; nine, double grooved polisher—a flaked fragment; ten and eleven, planes for working, cylindrical surfaces—mere accidental chipped flints; also, two fragments of the radius of Bos, showing work done by cutting tool at each end.

REV. W. S. LACH, Szyrma, has some notes in the *Antiquary* of December, 1884, on the survival of clan customs in Cornwall, Eng. Among them he mentions animal names, such as "Gulls," "Goats," "Hakes," or "Hoggs," as nicknames for the inhabitants of Mullion, Zennor and St. Ive, in Cornwall. Nature worship he recognizes in certain May customs, and in the midsummer fires, in honor of the solstice; exclusion from tribal privileges in the custom of burning in effigy certain obnoxious persons; in the "Peter-tide fires." The December number of the *Western Antiquary* contains a frontispiece which reminds one of certain idols in Guatamala, and may also be considered as illustrating the animal-headed divinities of the ancients perpetuated in christian symbols. It represents a baptismal font, on which are animal figures with their mouths open, and inclosing the heads of children below.

NEW DISCOVERIES.

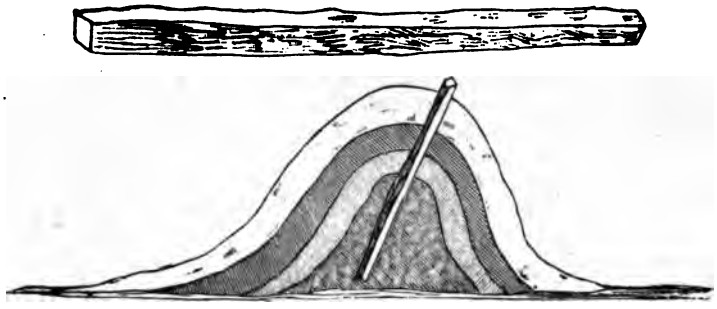
LAKE DWELLERS' RELICS.—The collection of relics from Lacustrine villages, belonging to Dr. Gross, of Neuchatel, is particularly rich in relics of the bronze period. The Swiss federation has no museum, but it is under debate whether this collection shall not be purchased.

ANOTHER CATECHUMEN'S CROSS.—Dr. D. C. W. Durgin, president of Hillsdale College, Michigan, sends us the outline of a silver double-headed cross, which was recently plowed up near a small lake in the southern part of Michigan. There are two letters (R. C.) on the cross, but no date.

MR. C. M. SHAW, an amateur photographer, has taken a trip into the Gila country and has photographed some cliff-dwellers' ruins in a cave four miles west from Hot Springs. The cave is in a cliff on the side of a deep narrow gorge. It has but one entrance, but the rooms extend back into the cave, passing through several rooms.

GREEK OSTRAKAS of the times of Augustus, Tiberius, Nero, Domitian Trajan, Hadrian, and Antoninus, have been found in Egypt. These ostraka are receipts, generally for taxes. They are written on potsherds. The potsherds were found in Egypt, at Thebes, in the ruins of an old Koptic village, near the Temple of Karnak. They had been placed between the bricks of the buildings for the purpose of hardening the sun-dried clay. The bricks have crumbled and left the inscribed fragments of pottery. No remarkable fact of history has been disclosed, but the names of some of the gates of the temple at Abydos have been learned, and some other items which are of interest to scholars. The proceeding of the Society of Biblical Archæology for November contains the translation of many of these from the pen of Prof. A. H. Sayce, who has been fortunate in securing the potsherds for the British Museum.

A STONE GRAVE-POST IN A MOUND.—A letter from Mr. W. M. Canfield describes a mound which he excavated in the year 1856, near Baraboo, which was stratified and contained a stone standing upright and projecting through the strata and through the surface of the mound. The object of this stone is unknown. It is unique, and we therefore give a cut of it, thinking that our readers possibly may furnish an explanation of it, or may know of some custom which corresponds to this.



DISCOVERIES IN NEW MEXICO.—Mr. Amado Chaves, superintendent of public schools for Mexico, has discovered an ancient building near San Mateo. It is a wall extending 200 feet, built up with lime mortar three feet thick, and very solid, containing five rooms, one 25 feet long and 12 feet wide, and other small rooms; the building, two stories in height, a quadrangular structure with a plaza in the center. Stone hammers and grooved axes, corn cobs, dried up squashes, pottery, beads of red coral, and a skeleton of a woman with fine light chestnut hair were found among the ruins.—*Kansas City Review, for February, 1884.*

ANTIQUITIES OF OHIO.—Mr. Henry A. Shepard, of Hillsboro, Ohio, has sent several papers containing extracts from his forthcoming history of Ohio. These extracts are mainly upon the antiquities of the state, and are descriptive of the earthworks at Cincinnati, at Circleville, at Newark, and other places. The last article descriptive of the works at Cincinnati is a valuable one. The works here were very extensive, but they have been destroyed, and the descriptions of them, which were published by Dr. Daniel Drake and by Col. Winthrop Sargent and others, are becoming scarce. Col. Sargent was governor pro tem. of the Northwest Territory, in 1794. Dr. Drake described the works in 1813. Gen. William Henry Harrison described them as he saw them in 1793. No complete survey was made of them, however. In our opinion the works were similar to those at Chillicothe and Paint Creek—composed of a circle and a square, and parallel walls, etc.—and the walls referred to were the fragments of the circle. Those who saw them not having the idea of the form of them, and not having made a complete survey, have only left a record of the fragments. If Mr. Shepard would furnish the cut found in Drake's Cincinnati, he would be conferring a benefit on archæology. We hope that he will be encouraged in his work, and may be able to publish his history, for we have no doubt that it is a valuable one.

JEWISH AND ZULU CUSTOMS.—A paper received from Natal Africa, contains an article by Rev. Josiah Tyler on the similarity of Jewish and Zulu customs. Among them we mention several: The feast of first fruits, rejection of swine's flesh, right of circumcision, the slayer of the king not allowed to live, Zulu girls go upon the mountains and mourn days and nights, saying, "Hoi! Hoi!" like Jephthah's daughter, traditions of the universal deluge, and of the passage of Red Sea; great men have servants to pour water on their hands; the throwing stones into a pile; blood sprinkled on houses. The authors' belief is that the Zulus were cradled in the land of the Bible. Certain customs are mentioned which may be ascribed to the primitive tribal organism. These are as follows: Marriages commonly among their own tribe; uncle called father, nephew a son, niece a daughter; inheritance descends from father to eldest son. If there are no sons it goes to the paternal uncle. A surmise has been advanced by some that the relics of the Queen of Sheba's palace may be found in certain ancient ruins described by Peterman, Baines and others, and the Ophir of scripture has been located at Sofala, an African port.

A LARGE INDIAN MOUND near the town of Gastersville, Pa., has recently been opened and examined by a committee of scientists sent out from the Smithsonian Institute. At some depth from the surface a kind of vault was found in which was discovered the skeleton of a giant measuring seven feet two inches. His hair was coarse and jet black, and hung to the waist, the brow being ornamented with a copper crown. The skeleton was remarkably well preserved. Near it were also found the bodies of several children of various sizes, the remains being covered with beads made of bone of some kind. Upon removing these, the bodies were seen to be enclosed in a net-work of straw or reeds, and beneath this was a covering of the skin of some animal. On the stones which covered the vault were carved inscriptions, and these when deciphered, will doubtless lift the veil that now shrouds the history of the race of people that at one time inhabited this part of the American continent. The relics have been carefully packed and forwarded to the Smithsonian Institute, and they are said to be the most interesting collection ever found in the United States. The explorers are now at work on another mound in Barton county, Pa.

MONOLITHS IN CENTRAL AMERICA.—Mr. W. T. Brigham has recently brought before the American Academy of Art and Science, Boston, a description of some monoliths which he has discovered near Quirigua, in Eastern Guatemala. They are situate in a dense forest in the valley of the Mota, about two miles from that stream, in alluvial soil, often flooded, and wholly unsuited for human habitation. While other places in Central America, where sculptured stones are found, have also remains of buildings, whether pakices or temples, at Quirigua are found only monoliths and ruined mounds. At the northern end, which alone Mr. Brigham visited, there are five erect stones, averaging four feet front, three feet depth, and from sixteen to twenty-three feet in height. One of the largest is much inclined, and must be buried four or five feet in soft soil. The smaller

stones stand on slabs of the same soft sandstone, from which all the remains are quarried; and the quarries are about a mile distant. On the front and back of each monolith are carved human figures, with decorations covering the entire surface. On the sides are hieroglyphic inscriptions resembling those at Copan and Palenque, but apparently not identical. A death's head is sometimes placed above, sometimes below, the human figure; and well designed puma and jaguar masks seem to indicate the lordly rank of the person these columns are intended to commemorate. Besides these obelisks, are two strange bowlder-like masses of stone, bearing at present no geometrical relation to any of the columns. These are generally grotesquely sculptured in likeness of a reptile-head, and they bear various inscriptions in a smaller character than that on the monuments. One very remarkable head is cut in high-relief, about life-size; and this is capped by another face, bearded, and crowned with a circlet of bullace (*chryso phylium*). Several explorers have called these altars, but their great size (seven feet high and twelve long) and peculiar shape would seem to preclude that use. While the sandstone is soft, it has been protected from the weather, not only by the closely overshadowing trees, but more perfectly by the mosses and ferns that completely covered the surface until two years ago, when Mr. W. P. Maudsley, of England, cleaned them for the purpose of taking casts. —*Science for December.*

NOTES FROM THE FAR EAST.

BY PROF. J. AVERY.

ANCIENT INTERCOURSE OF CHINA WITH FOREIGN NATIONS.—The researches of Baron von Richthofer led him to conclude that the ancestors of the Chinese once lived in the basin of the Tarim river, where they were in contact with the Aryans and Scythians about the Pamir plateau. Whether this be true or not, it is tolerably certain that the Chinese, coming from the northwest, first spread over the northern provinces of China. While the Aryans were founding empires in India, Persia, and farther west in Europe, the Chinese, shut off from the rest of the world by the sea on one side and lofty mountains or barren steppes on the other, lived in seclusion for very many centuries, and developed on their rich, alluvial plains a peculiar civilization.

The beginning of the Great Wall, in 240 B. C., as a defense against Tartar hordes in the North, proved, contrary to intention, the beginning of intercourse with the outside world. In the same century Buddhism was introduced from India, though it was not formally sanctioned by the state until the deputation sent to the home of Gautama by the emperor Ming-ti returned in the year 65 B. C., laden with books and relics. In this period, also, Chinese caravans first attempted to trade with western countries across the Pamir plateau. In the following century Hippalus, a Greek pilot from Egypt, taking advantage of the trade winds, rounded the penin-

sula of Malacca and reached Annam; and in 166 A. D. an embassy from Marcus Aurelius visited the emperor Hwan-ti. Chinese junks ventured as far west as Ceylon in the fourth century, and to the Euphrates in the fifth. In the succeeding centuries the frequent visits of Arab and Persian voyagers made it possible for them to exchange their silks and other productions nearer home, and Chinese sailors were no longer seen in the West. In the meantime the empire was extended westward over Central Asia, until it reached the basin or the Tarim, and even made tributary some of the kings or India. At the same time Islam was making rapid strides eastward. It had already conquered Persia, and was threatening the Tartar tribes, who appealed to China for protection. In 763 the Chinese in turn were obliged to call in the aid of a Turkish tribe to help defend them against the restless hordes on their northwestern border, which act opened the way for the spread of Mohammedanism in Northern China. In the preceding century the Buddhist monk, Hieun-tsang, had traveled and studied in India, and had left that record of his observations which is so much prized for the history of his time. While the pilgrim was absent in the interest of Buddhism, Christianity was first preached in his native land by a Nestorian bishop, in A. D. 636. He was succeeded by seven other missionary bishops, but the new faith was prohibited by imperial decree, in 841. The population of Central Asia continued to grow in strength and boldness until in the thirteenth century the Mongols, under Chenghiz Khan, conquered China and founded an empire stretching from Japan to the Black Sea. The union of so many countries under one rule was favorable for intercourse between the East and West, which flourished until the Mongols were expelled, in 1368 A. D., and a policy of seclusion was readopted and strictly maintained down to modern times.

THE KUBUS OF SUMATRA.—This tribe represents, if we can judge from a recent description by Mr. H. O. Forbes, a very low order of the human family. They inhabit the central and southern parts of the island, and wander through the forests along the Musi and Batang Hari rivers. The Dutch government succeeded, after much effort, in persuading a few families to adopt a settled life as agriculturists; but the greater part of the tribe have persistently secluded themselves in deep forests, far away from civilization, and it is the opinion of Mr. Forbes that no white man has yet seen them in their wild state, except in hasty flight from his presence. They wear no clothes, or only a scanty bandage of bark-cloth about their loins; and their dwellings are temporary huts, constructed of branches of trees and covered with a leaf thatch. They subsist on the fruits, grubs, reptiles, or larger animals of the jungle, when they can kill them. They manufacture nothing, and depend for their knives and spears on the barter of gutta-percha, beeswax and other forest products with the Malays. When a trader wishes to deal with them, he approaches their vicinity and beats a gong to give notice of his arrival. While he stops at a distance, the people collect and lay on the ground whatever they have to dispose of, and, giving a like signal, hide in the forest. The trader approaches, and places opposite what he regards

as an equivalent in cloth, knives, or whatever they value; then, beating his gong, he retires, and the natives emerge and consider the terms. If these seem equitable, they take their share, and disappearing, leave the trader to gather up his own. If the offer seems below the mark, they set apart so much as they deem a fair equivalent for it, and submit it to the other party; and so the matter goes on reciprocally until some agreement is reached. The Kubus have a rich olive-brown skin, and jet black hair. The average height of seven males examined by Mr. Forbes was five feet three inches, and of five females, four feet ten inches. Those who frequent the villages speak corrupt Malay, but they are said to have a language of their own. Their only government is the advisory control of the elders of the community. In their wild state they leave the dead on the ground unburied, and have no idea of a future life. Mr. Forbes was able to procure one entire Kubu skeleton and the skull of another, which has been pronounced by competent authority to exhibit decided Malay rather than Negrito affinities. There is also a close resemblance between the skulls, which, if true of the tribe generally, indicates long isolation from other races.

PTOLEMY'S GEOGRAPHY OF INDIA AND SOUTHERN ASIA.—The celebrated mathematician and geographer of Alexandria was the first of the ancients to apply latitude and longitude to the determination of places, and came nearer to a correct treatment of this part of geographical science than any other scholar of his own or much later times. In his "Outline of Geography," consisting of eight books, the first four chapters of the seventh book are devoted to India and Southern Asia. The writer makes no attempt to describe the places named, otherwise than to catalogue them and give the latitude and longitude of each.

Several attempts have been made to identify the places named in Ptolemy's Indian list, notably, by Lassen, Vivien de Saint Martin, and Col. Yule. Recently a new and critical study of the subject has been made by Mr. J. W. McCrindle, who is publishing his work in current numbers of the *Indian Antiquary*. The writer first translates several introductory chapters, in which Ptolemy describes his method of dealing with geographical questions, and then the Oriental portion from the seventh book. To each section are added copious notes, which are designed, to use the writer's words, "first, to show, as far as has been ascertained, how each place named by Ptolemy in his Indian tables has been identified; second, to trace the origin or etimology of each name, so far as it is possible to do so, and, third, to notice very concisely the most prominent facts in the ancient history of the places of importance mentioned."

WORD-TRANSFORMATION IN SINHALESE.—We sometimes observe children at their plays distort their words and laugh at the oddity of the sounds produced. This, doubtless, occurs in all lands, but nowhere does it seem so serious a practice or one so regulated by fixed laws as among the Sinhalese. We derive the following account of it from the *Orientalist*, published in Ceylon: It is called *perelibase* (transformation language) and consists in an interchange of syllables in a word or sentence according to rules well understood by th

natives. The expressions subject to metamorphosis may be a single word, or several words, generally not exceeding four or five. These are regarded as one whole for the purpose, and are divided into two parts, of which the first begins the sentence and the last begins with the second accented syllable. They are the first syllable of the parts that interchange; thus: *ara ima* become *ira ama*, and *loku aliya* are pronounced *aku loliya*. The transformed expression may be meaningless, or have a signification different from that of the original words; thus: *ara bat* (that rice) and *bara at* heavy (hands). The custom is believed to have been handed down from remote times, since its existence is presupposed by the form of certain ancient "triple-riddles." The problem consists in finding synonyms of two given words, which, transformed according to the rules of *perelibase*, shall result in a given expression. For example, given: *kele balala* (wild cat), to find *gal vaduva* (stone hewer). One thinks of *val gaduva* as synonymous of the first words, which transformed, give the desired answer. So completely does this practice conceal the true meaning of sentences that foreigners who have a good practical acquaintance with the language are continually nonplussed by hearing what they suppose to be new words, but which are really old ones in a new guise. So expert are natives in this metamorphosis that they apply it to English and other languages in the presence of foreigners, who have no idea that they are listening to their own tongues.

THE AMERICAN SCHOOL AT ATHENS.—The American School at Athens has not been so well attended during the last year on account of the cholera scare. The first volume of papers of the school will be published during the winter. Prof. A. Harkness, of Brown, is to be the director for 1885-'86.

NOTES ON CLASSICAL ARCHÆOLOGY.

A. C. MERRIAM.

THE latest discoveries reported by Kabbadias from Epidaurus are as follows: The head of a small Telesphorus, the god of convalescence, represented exactly as upon the coins of Pergamus, that is, as a diminutive figure enveloped in a heavy mantle reaching to the knees, with the cowl drawn up over his head, as if to protect from every draught. 2. A bearded portrait-head larger than life, a fine work as well in expression as in the execution and fullness of the beard. It is the head of the Epidaurian Euanthes, whose name appears on the base of his statue, which was also found. This statue was of superhuman size, and undoubtedly belongs to the head just described. It wears the well-known short toga of the Roman period. 3. The headless statue of a woman, likewise of Roman times.

PROF. ISAAC H. HALL has been the fortunate discoverer of an important Syriac manuscript of the New Testament in this country. It has been for some time in the possession of Mr. R. S. Williams, of Utica, N. Y., to whom it had been sent by his brother, Rev. W. F. Williams, missionary to Mardin and Mosul. The importance of the manuscript is due to the fact that the Peshitto or common Syriac version of the New Testament lacks, besides Revelations, the second Epistle of Peter, the second and third Epistles of John, and the epistles of Jude, all of which epistles are contained in this manuscript. The printed Syriac version of these Epistles rests upon two manuscripts only, while the present one will add a third, with various readings, and some valuable marginal notes.

POMPEII.—Here the imprint of a body was recently found, and a cast of it taken by filling with plaster the cavity occupied by the skeleton. A crouching Venus has also been discovered, broken into several pieces, which can be easily reunited. It is a work of much beauty. Some frescoes represent a banquet where the guests are eating, drinking and singing, though one has become so intoxicated that he has to be held up by a slave. In another room a Leda is to be seen carrying a swan upon her right arm. The execution is admirable. Another chamber is richly adorned with decorative subjects, in one of which Narcissus is seen admiring himself in the water—a favorite subject at Pompeii.

A FINE mosaic has been discovered at Brindisi, in a good state of preservation and measuring about 11 x 17 feet. It represents the Cretan Labyrinth with the meanders in rectangular lines. In the center is a square space in which the artist has represented the combat of Theseus and the Minotaur. The hero holds in his raised right hand a club, with which he is on the point of finishing the monster, already fallen on his knee, as he is usually depicted, except in the most archaic delineations of the scene where he is still standing. Ariadne frequently appears in the scene, sometimes holding the ball of thread forming the clew, sometimes it has slipped from her hand to the ground while she holds the thread only. She is not seen in this mosaic. Around the Labyrinth rise a number of perches on which birds are set. These are thought to indicate the automatic birds fabricated by Daedalus.

THE Governing Committee of the AMERICAN CLASSICAL SCHOOL AT ATHENS held its annual meeting at Princeton on the 21st of November. Prof. Van Benschoten, the present director, reported the growing success of the school. The library now contains 2,000 volumes of valuable works relating to classical study, and all the leading archæological journals are regularly received. The advantages of the library are thrown open to American residents. Prof. Harkness, of Brown University, has been elected director for the ensuing year, and his directorship will be followed by the appointment of Prof. D'Ooge, of the University of Michigan. The committee wish it to be understood that the opportunities offered by the school are at the disposal of all American students traveling in Europe, but membership must be procured in the regular way provided by the committee, namely, by application and examination.

THE ARCHÆOLOGICAL INSTITUTE OF AMERICA.—This institute has recently reorganized itself upon a new basis. It has relinquished into the hands of such local societies as might be formed in the United States under its auspices a chief part of its functions, and has replaced its committee by a council, which shall consist mainly of representatives of these societies. The number of representatives is to be determined by the size of the local societies. In accordance with the new regulations a Boston society has been formed, numbering one hundred and ninety members, a Baltimore society with fifty members, and one in New York with seventy members. The institute has just issued its second volume of papers, American Series, a volume of 326 pages, containing the Report of an Archæological Tour in Mexico in 1881, by A. F. Bandelier.

SALAMIS IN THE TIME OF SOLON.—Every reader of history remembers that stirring event in the early life of the great Athenian law-giver, when he rushed into the market place and recited a poem, in which he called upon his countrymen to wipe out the disgrace of being called Salamis-losers, though Athenians, and so incited them by his words and his own enthusiasm that they joined him in an attack upon the island, and wrested it from the Megarians. Plutarch tells us that 500 volunteers engaged in this expedition, under the stipulation that, if they were victorious, they should hold the island in property and citizenship. Upon this expression of Plutarch's Grote remarks: "The strict meaning of these words refers only to the *government* of the island; but it seems almost certainly implied that they would be established in it as Kleruchs or proprietors of land, not meaning necessarily that all the pre-existing proprietors would be expelled." This supposition of our historian has just received a remarkable confirmation from an inscription published with a keen-sighted commentary by Ulrich Koehler in the *Mittheilungen des Deutschen Archæologischen Institutes* of Athens, 1884, p. 117. The inscription

was found in the recent excavations on the Acropolis, and is made up of four fragments, which fit together, filling up probably about one-half of the original, on the left hand. It is complete at the top and bottom and on the left, and was composed of twelve lines, the first six of which were written *stoichedon*, *i. e.*, with the letters in perpendicular as well as horizontal lines; in the remainder this arrangement is not observed. The letters are archaic, and show at once that they belong to the sixth century B. C. The contents of the first half are fairly made out, and consist of a decree of the people in relation to the occupation of Salamis by the Cleruchs, and their rights and duties towards Athens. They shall pay taxes and serve in the army, but if any do not take up residence on the island, they are to lease their allotment of land, doubtless to the old inhabitants, as Grote supposed, the lessee to pay a sum to the public treasury.

In point of epigraphy, the inscription stands between the famous Sigean inscription, which is earlier, and a dedication on an altar from the time of the rule of Hippias, 527-510 B. C. The former has usually been placed about 535, but Sigeum had been in possession of the Athenians from a considerably earlier period, according to Duncker since 610 The capture of Salamis falls between 575 and 559, according to the same authority. Hence, one important conclusion from the present inscription is that the Sigean must be set back nearly to the beginning of the sixth century, and Athenian epigraphy gains a foothold almost as early as the Ionian, in the inscription of the mercenaries of Psammitichus, carved upon the legs of the colossal rock-hewn statues of Ramses II., at Abu Simbel, in Nubia. Nor does the important bearing of the inscription rest here. It presents an example of an Athenian decree of the people, earlier by nearly a century than any heretofore known, and for this reason its formulas are exceedingly interesting to the student of language and valuable to the historian. The earliest known example of the Athenian Cleruch system was that of the 4,000 settlers sent out to occupy the lands of the Eubœans, after the defeat of the latter, not long subsequent to the expulsion of the Pisistratids. But this inscription proves its existence upon the subjugation of Salamis, and apparently in a form very similar to the later usages. The opening formula is striking for its simplicity, and, if Koehler is right in his conception of the missing portion, for the statement that, "It is resolved by the people (demos)," without mentioning the Senate. Koehler concludes that the Senate had not yet assumed the leading position which it obtained after the reforms of Clisthenes.

THE EXCAVATIONS at Olympia, conducted by Dimitriadis, have yielded among other things, some fragments of the pediment group of the temple of Zeus. In the Piræus the foundation walls of a large structure of the Hellenic period have been laid bare. From the inscriptions found, it appears that here was the site of the local cult of a guild of Dionysus worshipers. The French school at Athens has resumed its excavations on the site of the temple of Athena at Elatea, already mentioned in THE ANTIQUARIAN.

THE EGYPT EXPLORATION FUND.—A general meeting of this association was held in London in November, and Mr Petrie was present to make his report upon the sites which he had especially explored, with a view to undertaking explorations during the coming season. He had carefully examined twenty of these sites, three of which promised to yield important results. One of them was so covered with early Greek pottery of all ages that the potsherds crackled under the feet as one walked over it. Besides pottery, statuettes in marble and alabaster were found. He regarded such a site as of the first importance in the study of Greek archæology, and it had never before been visited by Europeans, as far as was known. Another place of interest was the site of a royal mausoleum, on the side of a desolate mound of dust, chips and bones, containing an immense sarcophagus of red granite, 14½ feet long. The mortuary chapel in which the coffin had stood had been burnt for lime, but the pavement of red granite remained beneath the coffin. He believed that this was the sepulchre of one of the Pharaohs of the Delta, which could be easily cleared and determined. On another side of the mound lay a portion of a sphinx, apparently carved by the Hyksos, so that the remains went back to the early ages. Another site was in the midst of a flat field beside a little village, where a large hole had been dug by the people for

water. At only about eight feet below the surface there were found the lintel and one jamb of a magnificent gateway, carved in red granite, by Amenemhat I., the founder of the Twelfth Dynasty. At Zoan the main object of the excavations had been the discovery of remains of the Hyksos period, and their failure in this hitherto had been due simply to the immensity of the area, which rendered it impossible to guess where to dig to find such remains. The whole area, however, had been probed by pits to the depth of ten, twenty and thirty feet, so that there was not a space of more than three hundred yards in any part untouched by excavations. In some places they had reached remains which probably went back to the Hyksos period; but in most of the pits Greek and Roman remains were met with.

The fund for the coming year amounts to £2,162, of which £260 had been received from 171 American subscribers through the exertions of Rev. W. C. Winslow. An English student of Egyptology had been found, who was to be sent out to assist Mr. Petrie in his labors. A selection of the antiquities collected by Mr. Petrie was presented to the British Museum, to the Boston Museum, and the Museums of Bristol, Bolton, York, Liverpool, Sheffield, Edinburgh, Geneva, Bulak, to Charterhouse School, and to Miss Edwards for a college. Mr. Lowell was present at the meeting, and accepted the gift for the American supporters of the fund.

AN ANCIENT KING OF TELLO.—In the March number of THE ANTIQUARIAN for 1884, Mr. O. D. Miller gave an account of the discovery of a text of Nabonidus which carried back the date of Sargon I. to about 3800 B. C. The announcement of a still more ancient King of Tello was made to the French Academy of Inscriptions in February last, by M. Heuzey, and the inscription from which this was drawn has since been translated by M. Oppert. It enumerates the grand works undertaken by the king, the temples that he built, the canals that he dug for irrigation, etc. Finally it adds a text containing an invocation to an inferior deity, who is besought to intercede with a superior god. The inscription is written in the Linear Babylonian character, and its comparative age is determined by this. It is only known from a squeeze, obtained by M. Sarzac in Babylon, but it is expected that the original will soon find its way to Europe, where its money value will be considerable.

THE TEMPLE OF ÆSCULAPIUS AT EPIDAURUS.—Kabbadias has succeeded not only in defining the site of this structure, but has discovered some of the sculptures of the pediments at both the eastern and western ends. Hitherto nothing was known of the subjects of these pediments, or of the period of their sculpture. The eastern end represented the battle with the Centaurs. Here a fairly preserved head of a Centaur was found, and some fragments of a female figure, and other pieces. The western face yielded more generous results. The battle with the Amazons was the subject of the sculptures, and several female figures on horseback were found of considerable size, though the heads and feet were gone. Other heads, however, appeared among the mass of fragments. Of their workmanship as a whole, Kabbadias says: "Although the statues described are broken and the marble considerably marred, still one can easily see at first sight the workmanship to be that of the highest point of Greek art. The modelling of the forms is something wonderful, especially that of a victory, and that of a spirited horse of an Amazon, even though the size of this horse seems to me to be too large for the figure mounted upon it. The pose and disposition of the figures is choice, the expression in the heads most happy, as the masculine and almost athletic character of the head of the Amazon, the melancholy in another, the death agony in a third, and the evident suffering in that of the groaning Centaur. Finally, the management of the folds of the garments is most graceful and effective." From all the indications, Kabbadias concludes that the temple must have been built after the Parthenon, about the close of the fifth and beginning of the fourth century B. C, by artists belonging to the school of Pheidias, to which school Thrasymedes must also have belonged, who, Pausanias says, was the sculptor of the statue of Æsculapius in the temple, though later writers, as Athenagoras, attributed it to Pheidias himself."

REPORTS AND MAGAZINES.

THE YOUNG MINERALOGIST AND ANTIQUARIAN is a monthly which has just been started by Theo. S. Wise, designed mainly for collectors. It contains correspondence and notes and news, and promises to be a familiar and free journal for the collectors in which to ventilate their opinions. We wish it well in the work it has undertaken.

THE WESTERN ANTIQUARIAN is a high-toned magazine, published in Plymouth, Eng.; edited by W. H. K. Wright. It is valuable for its local character and shows that English gentlemen are taking great interest in the archæology of their country.

THE CRITIC for November 29 contains an excellent review of Gatschet's Creek Migration Legend, written by some one who is evidently familiar with the Indian tribes of the South. We take pleasure in commending this literary paper, as it always contains something good.

THE ORIENTALIST.—This monthly journal, published at Kandy, in Ceylon, is the latest addition to the list of magazines devoted to Oriental learning. In size and make-up it is a close imitation of the *Indian Antiquary*, and its range of subjects is much the same. It is designed, however, to specially represent researches into the literature, antiquities, and folk lore of Ceylon; and, possibly, to put results into a rather more popular shape. It is now at the end of its first year, and has thus far ably fulfilled the promises of its founder. The price is about one-third that of the *Antiquary*.

BOOK REVIEWS.

Lectures on the Origin and Growth of Religion, as Illustrated by the Native Religions of Mexico and Peru. Delivered at Oxford and London, April and May, 1884. by ALBERT REVILLE, D. D., Professor of the Science of Religions at the College de France. Translated by Philip H. Wicksteed, M. A. 8vo., pp. 256.

This volume presents to us the "Hibbert Lectures" for 1884, a liberal course, usually of high character. These before us form no exception to that rule. It will be seen from the title that the lecturer takes up the study of the American religions not as the superstitions of savages, but as illustrations of the growth or evolution of the religious sentiment in man as a race. This broad and eminently just view gives his treatment of the subject a far wider claim on our sympathies than that narrow one which regards them as mere "heathenisms."

This philosophical grasp of his topic is admirably supported by the author's opinions on ancient American history. He is clear-minded enough to see that the alleged evidence which would trace ancient American civilization to colonies from the Old World is fallacious, and that the very fact that this civilization was wholly indigenous makes it tenfold more valuable to the ethnologist for purposes of comparison. As he strikingly remarks, the study of ancient America is in this respect as if we had succeeded in making a journey to some other planet, and enjoyed the opportunity to study there a race of men which had developed itself under conditions radically dissimilar from ours.

He is also unquestionably correct and in accord with the latest researches in denying all connection between the culture of Mexico and Peru. Each was a separate growth, and borrowed naught of the other.

While in these broad principles Dr. Reville may justly claim our cordial commendation, he betrays in a number of details that insufficient acquaintance wtih minutiæ which comes from a too hasty study of his theme. Thus

he confounds in the most extraordinary manner the Mayas with the Nahuas, evidently thinking them one and the same people. In his identification of the Nahuatl divinities he follows Bancroft in several serious errors, and is plainly unacquainted with the recent and more thorough researches. He refers to the latter with respect, but has not read them. He depends too much on Mr. Bancroft and Muller, both of whom are totally insufficient authorities on American religions. He falls far short of appreciating the Peruvian theology, and shows no familiarity with the latest writers on it. His plan, therefore, is excellent, but its execution far from adequate. D. G. B.

A Migration Legend of the Creek Indians; with a Linguistic, Historic and Ethnographic Introduction; by ALBERT S. GATSCHET. Vol. I. D. G Brinton, Philadelphia, 1884. pp. 257.

Mr. Gatschet's work is to comprise two volumes, of which the first (forming No. 4 of Dr. Brinton's Library of Aboriginal American literature) is now published. The appearance of a work in successive volumes or parts, though not very usual in this country, is common in Germany, particularly in the case of historical and scientific works, where each portion is, to a certain degree, independent of the other. Such is the case, to a large extent, in the present instance. Mr. Gatschet's first volume contains the "linguistic, historic and ethnographic introduction," which is promised in the title page. The contents, it should be stated, are somewhat more varied and extensive than might be supposed from the title. This might lead the reader to expect merely an account of the Creek Indians, and perhaps of the tribes ethnologically allied to them. The author, however, has made his work a full compendium of information respecting the tribes that formerly inhabited the Southern States, from the Carolinas and Georgia to Western Louisiana. In fact, the history of the Creek, or Maskoki, tribes—which brought them, at different times, into alliance or collision with all the neighboring nations—fairly warrants, and almost necessitates, this method of treatment. The main portion of the work is, of course, devoted to the tribes of the great Maskoki family, comprising the Yamassi, Yamacraw, Seminole, Apalachi, Hitchiti, Alibamu, Chicasa, Chahta, and some minor divisions; but, besides these, we have descriptions of the Timucua, Calusa, Kataba, Yuchi, Cheroki, Arkansas, Naktche (or Natchez), Pani (or Pawnees), Shetimasha, Atakapa, and several less known native communities.

The author has performed his task with great care and scientific thoroughness. His materials have been derived partly from the publications of early writers and partly from the results of his own personal investigations. His studies of the languages belonging to the Maskoki stock, and his account of the forms of government and social usages of the nations of this family, are particularly full and interesting. It is hardly necessary to say that his classification of the various tribes is based on language, which is always the only sure—and with American Indians the only possible—basis of an ethnographic arrangement. All other methods, whether based on locality, physical traits, or social characteristics, are delusive, and lead only to endless confusion. The map, which was to have accompanied the description, is deferred to the second volume; and in that volume, also, we are to have an explanation of the very curious "Migration Legend," which gives its name to the work.

This legend describes the origin of the Creek nation, which, after issuing from the earth somewhere in the west, commenced a series of wanderings "toward the sunrise," which brought them, after many wars and various adventures, to the region in the east where they finally settled. How much of this is mythology, and how much is genuine history, can probably never be fully known. Such an explanation, however, as can be furnished with the means now at command may be expected in the forthcoming volume.

Mr. Gatschet's book comprises the first scientific account of the southern tribes which has appeared since the publication of Gallatin's "Synopsis," in 1836. That great work was, for its time, a marvel of thoroughness and accuracy; but it left many vacancies to be filled, and not a few problems to be solved. During the period of nearly fifty years which has since elapsed, our means of information have been considerably enlarged, though certainly not to such an extent as might have been expected. In fact, the pursuit of ethnologic and linguistic science, for which our continent offers perhaps the best

of all existing fields, has been, until of late years, sadly neglected. A new interest appears now to be aroused in the study. A work like this of Mr. Gatschet, at once comprehensive and accurate, giving the results of the latest investigations in a readable and attractive form, will be welcomed by all students of ethnology and of American history.—H. H.

Marcus Aurelius Antoninus, by PAUL BARRON WATSON. New York: Harper Bros., 1884.

Marcus Aurelius was the most interesting character in Roman history. He lived at the time when Christianity was coming into power, but was a Roman in all respects, and the best representative of Roman culture. This fact has awakened interest in him with those who are living at the present day. The question has been raised whether the type of character developed under Christianity is equal to that which was developed under the Roman system of culture. Lecky, in his "History of European Morals," has drawn a contrast in favor of the Roman, and makes Marcus Aurelius his great hero. The stoic religion is by him made superior to the Christian. The position taken by Lecky is not, however, endorsed by Watson. Watson does not answer it, but merely takes off the edge of Lecky's reflection, and leaves the reader in suspense. He introduces him as superior to most Pagans, but still lacking the consolation which Christianity gives. He does not say whether the development of his character was or was not owing to the influence of the Christian faith. There was a stateliness, and an elegance and repose about the noble person of the Roman Emperor which few Christians of this day possess. And in this respect he contrasted with most Christians of our day. This was owing, however, to the circumstances of his life. He had the advantage of the best of Roman training. His home was in the palace, and his companions were the best and most distinguished men of the Roman Empire. He was the Charles V. and the Prince of Wales of his day. The education of these three distinguished men had many points of resemblance, and their characters were very similar. It is singular that the three periods of Christianity should have been represented by three such characters. But we may ascribe this largely to the influences which prevailed at the time, and which especially surrounded the individuals in their home life. Marcus Aurelius was a nephew of the celebrated general, Titus, who conquered Jerusalem, and afterward became Emperor under the title of Antoninus Pius. Hadrian, who was the mildest and the most peaceable of all the Roman Emperors, adopted him as a successor, and was interested in his training and early education. He had the influence of his mother, who was a cultivated woman, and the best of instructors. The Stoic philosophy may well be proud of such a character; still this would not lead us to choose Paganism rather than Christianity. We admire Marcus Aurelius, but are not captivated by his life, or led to take him to be our model. Arnold's "Light of Asia" has brought before us a character which is as attractive as that of Marcus Aurelius, and, if we take the portrait to be a correct one, more Christlike. The influence of the Roman Emperor is in favor of serenity and equipoise, but would never lead one to heroic self-denial or to the life of Christian benevolence. If stateliness, self-control and composure of spirit are the highest virtues, to be magnified above the Christlike traits, then Marcus Aurelius may well be our model. It is a style of character which the so-called "Pagans" of our day admire supremely. It is a singular fact that the worst Emperor which ever cursed the throne was Commodus, the son of this Stoic philosopher and model Emperor. This may be owing to the fact that his education was left to tutors, and that the public life of the Emperor kept father and mother so much away from the palace and engaged in the affairs of state, to the neglect of the boy. The suffering of Marcus Aurelius is hinted at. His health was poor, and he had to bear up under a great weight of responsibility, and had very little support or sympathy in reality, from his wife or any one else, and we wonder at the fortitude of the man. If one is satisfied to go through the world without the consolation of religion, when he knows that Christianity is in existence and has proved powerful in giving support and comfort in the midst of trials, afflictions and many burdens, let him read the life of Marcus Aurelius. The style of the book is charming. The reader is interested with the first sentence, and the interest continues to the end. Curiosity is at times balked with the long

disquisitions on law and the condition of the German tribes, but it holds on until the view of the Emperor in his relation to Christianity and in his "thoughts" is completed. There is one incident in the life of Marcus Aurelius which illustrates the condition of Christianity at the time. The Roman army was in conflict with the Marco-manni. There came on them a famine of water, and they were in great distress. Marcus had a legion, the soldiers of which were brought from Melitene, and were all Christians. When Marcus heard this he desired them to pray to their God. As soon as they did so God immediately heard them, and beat down their enemies with lightning, while the Romans He refreshed with rain; at which Marcus, being greatly astonished, favored the Christians with an edict, and ordered that the legion should be called the "Thundering Legion." For this we have the authority of Dion Cassius, Nicephorus, Gregory Nazienzen, Turtullian, Justin Martyr, and even the poet Claudian, though he ascribes the victory to Chaldean magicians and the Emperor's prayers, and he says nothing about the Christians.

Mr. Watson says: "One can not rise from a study of these thoughts without a feeling of intense depression." "I believe it would be impossible to find another book outside of Christianity in which the reader meets with so much that is truly pathetic as in this." "The thoughts of Marcus Aurelius present us with the picture of a noble, earnest soul striving to reach the solution of the problem for which his religion and his philosophy are quite inadequate." "He is groping in the dark for a consolation which even in the end he is not fully able to secure." "It is a humiliating lesson that is forced upon us by a study of these 'thoughts,' and it is a lesson that is all the more strongly felt by reason of the similarity between the times of Marcus Aurelius and our own."—S. D. P.

Truths and Untruths of Evolution, by JOHN B. DRURY, D. D. New York: Anson D. T. Randolph & Co., 900 Broadway, corner Twentieth Street. Price $1.00.

Dr. Drury's lectures were delivered before the students of the Theological Seminary and Rutger's College, at New Brunswick. They are evidently lectures delivered from an outside point of view. The author says: We have seen from the discussion of evolution and its applications, that its truths and untruths inhere in the form of theory which is held. It has throughout been my endeavor, in developing what of truth there is in evolution, to emphasize the necessity of a providence continuously directing and controlling, as much as a creator planning and producing, a universe. This author treats the doctrine from the dualistic conception. Mr. Fiske treats the subject with a monistic view. To scientific men, the monistic view will be most acceptable and yet reach the same point.

The Study of Origins; or, the Problems of Knowledge, of Being, and of Duty, by E. DE PRESSENSE, D. D. New York: James Pott & Co., 12 Astor Place, 1884.

There are three sources of knowledge, three ways of looking at things: a religious, a metaphysical, and a scientific. These correspond to the three parts of man's nature, the spiritual, mental and physical. The great difficulty at present is that these three spheres of thought have been confounded and made to be identical. The author of the book, "A Study of Origins," draws the lines distinctly, and shows that a system of psychology can not be built up a material philosophy, and that those go astray who fail to notice the differences between these sources of knowledge. The book is a metaphysical one, but is extremely clear, and is very valuable to all persons who would seek for religious truth. The difference between this book and Mr. Drummond's, is that this treats on the laws of thought and mental phenomena, but the book on "Natural law in the spiritual world" considers all laws in the material, mental and Spiritual World as identical. We consider that E. De Pressense has struck at the very foundation of things, and, although his book is not as popular or as fascinating, it is much more powerful and profound than Mr. Drummond's. The two books, taken together, show what strength the theologians have when they strike out into these great depths, and when they seek to grapple with the hard problems. They are both exceedingly suggestive.

Natural Law in the Spiritual World, by HENRY DRUMMOND, F. R. S. E.; F. G. S. New York: James Pott & Co., 1884.

The criticism of this book is that it makes the laws of nature and the laws of mind identical, the very position which materialists want to adopt. The author also takes it for granted that the opinions of scientific men on the great problems of life and material growth have reached a final point of conclusion: they are all fixed, and no change can be expected. Otherwise than this, the book is a most excellent one. It is probable that no work on science has produced more effect on the religious world than this. The illustrations are interesting and to the point. The subjects under consideration are varied. The thought is very fresh and clear.

The Destiny of Man Viewed in the Light of His Origin, by JOHN FISKE. Boston: Houghton, Mifflin & Co. New York: 11 E. Seventeenth Street, 1884. Price $1 50.

It is delightful to know that the evolutionists are thinking through their own system, and coming out to the same point which religious men have occupied. Mr. Fiske says: We have here seen that "the doctrine of evolution does not allow us to take the atheistic view of the position of man." He says that the materialistic assumption that there is no future state, and that the life of the soul accordingly ends with the life of the body, is, perhaps, the most colossal instance of baseless assumption that is known to the history of philosophy." We are very happy to recommend this book.

Universalism in America. A History, by RICHARD EDDY, D. D. Vol. 1. 1636–1800. Boston: Universalist Publishing House, 1884.

The history of Universalism in America is not a local history, and yet this has all the minutiæ of private conversation and personal incident, without the discriminating taste which most local histories have. There is a singular volubility in the style which may make pleasant reading, but which is hardly appropriate for history. A denomination like the Universalists does not need to borrow of the Moravians, Congregationalists, Episcopalians, as the writer of this book seems to do. If there was an origin to the denomination, it should have been put in an independent way, and not ascribed to any other. The work lacks any definite or positive statement. It is mainly negative. The author is the President of the Universalist Historical Society, and has spent many years in the preparation of the volume. The appearance of the book is attractive, and the contents may be satisfactory to those who are interested in the details of personal biography and are not particular about the philosophical treatment.

Brahmoism; or, History of Reformed Hinduism, by RAM CHANDRA BOSE. New York: Funk & Wagnalls, 1884, pp. 222.

This book is a collection of lectures which were delivered at various times and places in India, and which together form a connected history of the doctrines and working of the Brahmo Somaj from the organization of the Society by Rajah Ram Mohun Roy, in 1830, down to the death of its chief apostle, Babu Keshub Chunder Sen, a year ago. The author is a native Christian missionary at Lucknow, and, though not writing as an active sympathizer with the Brahmos, is fitted by birth to understand a movement so peculiarly Indian. This interesting, but in point of numbers quite insignificant, religious reform, has at times excited much attention among Christian people; and this is due more to the fascination of its two chief personalities than to anything that the Somaj has done or is likely to do for the regeneration of India. The brilliant imagination and the glowing rhetoric of Mr. Sen has blinded some generous but superficial minds to the absurdity of his pretensions and the meagreness of his achievements. We trust that the book before us will serve as an antidote to these misapprehensions and overestimates. Mr. Bose has devoted himself not so much to the externalities of the Somaj as to its fundamental doctrines; and has shown in an exceedingly able and convincing manner the inadequacy of these as the basis of a grand religious renovation. It is hazardous to forecast the future, but we are inclined to think that at least the two oldest branches of the Somaj will prove to be another example of the excrescences that have often appeared on the body of Hinduism only to be ultimately reabsorbed into its mass.

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ERRATA.

Page 84, paragraph (3), line 8, omit seven words after "California." Page 90, line 40, read "sort of arm," instead of fort of arms. Page 108, line 3, read most instead of mose. Page 109 and 111, running title, spell Grammar instead of Grammer.

points, which necessarily arise in the discussion, are now generally conceded.

First, That we have no historical or other evidence, unless it be derived from the antiquities themselves, that any other race than the Indians occupied the region under consideration previous to discovery, at the close of the fifteenth century.

Second, That the Mound Builders did not belong to one great nation, but to several distinct tribes or peoples, differing as widely in their ethnic relations as the Indian tribes found inhabiting the country.

Third, That the Indians of this section, when first encountered by the whites, were, to some extent, a sedentary people,

*The first article of the series is in the March number, 1884.

having fixed villages and depending largely for subsistence upon the products of the soil.[1]

Fourth, That the argument in support of the great antiquity of these works, drawn from the assumed fact that they are always found on the older or upper river terraces, has been abandoned, since it has been ascertained that the rule does not hold good even in a majority of cases. I may also add in this connection that as it has been ascertained that the rings of growth in trees do not furnish a sure indication of age—one with eight hundred rings in the latitude of Ohio being more likely under than over four hundred years old—this test of antiquity must also be abandoned.[2]

Fifth, That the historical evidence that some of the southern tribes were in the habit of building mounds is conclusive.

As this country was inhabited at the time of its discovery by Indians, and we have no knowledge of any other people having occupied it previous thereto, every fact which indicates similarity between the Mound Builders and Indians, in arts, customs, religion and mode of life, is an argument in support of the theory that the Indians were the authors of these works. And the greater the number of striking resemblances, the greater the probability that the theory is correct, so long as we find nothing absolutely irreconcilable with it.

As a complete comparison would require more space than can be given to the subject in a single article, or even a series of articles, I must content myself with reference to such as appear most striking, and to somewhat general statements.

THE CUSTOM OF REMOVING THE FLESH FROM THE DEAD BEFORE DEPOSITING THEM IN THEIR LAST RESTING PLACES.

This custom appears to have been followed quite generally, both by the Indians and Mound Builders.

That it was followed, to a considerable extent, by the Mound Builders of various sections, is proven by the following acts:

The confused masses of human bones frequently found in mounds, show, by their relation to each other, that they must have been gathered together after the flesh had been removed, as this condition could not possibly have been assumed after burial in their natural state. Instances of this kind are so numerous and well known that it is scarcely necessary to present any evidence in support of the statement.

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[1] Prof. Carr appears to have overlooked the mention by Lallemont—*Jesuit Relations* for 1640, p. 35—of twenty-nine tribes living south of the lakes, as sedentary and cultivators of the soil.

[2] The only true and satisfactory test of the theory is to cut down trees whose ages are known, and count the rings. The evidence so far obtained in this way is overwhelmingly against the theory.

The well known instance referred to by Jefferson in his "Notes on Virginia," is one in point. "The appearance," he tells us, "certainly indicates that it [the barrow] has derived both origin and growth from the customary collections of bones and deposition of them together."

Notices of similar deposits have been observed as follows: In Wisconsin, by Mr. Armstrong;[1] in Florida, by James Bell[2] and Mr. Walker;[3] in Cass County, Ill., by Mr. Snyder;[4] in Georgia, by C. C. Jones;[5] etc. Similar deposits have also been found by the assistants of the Bureau of Ethnology in Wisconsin, Illinois, Northern Missouri, North Carolina and Arkansas.

Another proof of this custom was observed by Mr. Middleton and Col. Norris, in Wisconsin, Northeastern Missouri and Illinois. In numerous mounds the skeletons were found packed closely, side by side, immediately beneath a layer of hard mortar-like substance. The fact that this mortar had completely filled the interstices and, in many cases, the skulls also, showed that it had been placed over them while in a plastic state, and as it must soon have hardened and assumed the condition in which it was found, it is evident the skeletons had been buried after the flesh was removed.

As another evidence we may mention the fact, that the bones of adult individuals are sometimes found in stone graves (in mounds) which are so small that the body of a full grown person could not, by any possible means, be pressed into them. Instances of this kind have occurred in Tennessee, Missouri and Southern Illinois.

From personal examination, I conclude that most of the folded skeletons found in mounds were buried after the flesh had been removed, as the folding, to the extent noticed, could not possibly have been done with the flesh on, and the positions, in most cases, were such that they could not have been assumed in consequence of the decay of the flesh and settlement of the mound.

The partial calcining of the bones in vaults and under layers of clay, where the evidence shows that the fire was applied to the outside of the vault or above the clay layer, can be accounted for only on the supposition that the flesh had been removed before burial.

Other proofs that this custom prevailed among the Mound Builders, in various sections of the country, might be adduced, but this is unnecessary, as it will doubtless be admitted.

That it was the custom of a number of Indian tribes, when first encountered by the whites, and even down to a comparatively modern date, to remove the flesh before final burial, by

[1] Smithsonian Rept., 1879, p. 337.
[2] Smithsonian Rept., 1881, p. 636.
[3] Smithsonian Rept., 1879, p. 398.
[4] Smithsonian Rept., 1881, p. 573.
[5] Antiq. So. Indians, p. 193.

suspending on scaffolds, depositing in charnel houses or otherwise, is well known to all students of Indian habits and customs.

Heckwelder says, "The Nanticokes had the singular custom of removing the bones of the deceased from the old burial place, to a place of deposit in the country they now dwell in."[1]

The account of the communal burial among the Hurons, by Brebœuf, is well known.[2] The same custom is alluded to by Lafitau.[3] Bartram observed it among the Choctaws.[4] It is also mentioned by Bossu,[5] by Adair,[6] by Barnard Romans,[7] and others.

BURIAL BENEATH OR IN DWELLINGS.

The evidence brought to light by the agents of the Bureau of Ethnology, of a custom among the Mound Builders of Arkansas and Mississippi, of burying in or under their dwellings, has been given, in part, in an article published in the Magazine of American History.[8] That such was also the custom of the southern Indian tribes is a well attested historical fact. Bartram affirms it to have been in vogue among the Muscogulgees or Creeks,[9] and Barnard Romans says it was also practiced by the Chickasaws.[10] C. C. Jones says that the Indians of Georgia "often interred beneath the floor of the cabin, and then burnt the hut of the deceased over his head,"[11] which furnishes a complete explanation of the fact observed by the Bureau explorers mentioned in the article before alluded to.

BURIAL IN A SITTING OR SQUATTING POSTURE.

It was a very common practice among the Mound Builders to bury some of their dead in a sitting or squatting posture. The examples of this kind are too numerous and too well known to justify me in burdening my pages with the proof. I may add that the yet unpublished reports of the Bureau, and other explorers, show that this custom prevailed, to a certain extent, in Wisconsin, Iowa, Illinois, North Carolina, Missouri, Ohio and West Virginia. Instances have also been observed elsewhere. That the same custom was followed by several of the Indian tribes is attested by the following authorities: La Hontan,[12] Bossu,[13] Lawson,[14] Bartram,[15] Adair,[16] etc.

THE USE OF FIRE IN THE BURIAL CEREMONIES.

Another respect in which the burial customs of the Mound Builders corresponded with those of the Indians, was the use of fire in the funeral ceremonies. The evidences of this cus-

[1] The Indian Tribes of North America, p. 75. [2] Jesuit Relations for 1636. [3] Mœurs des Sauvages, Vol. II. 420–435. [4] Travels, p. 516. [5] Travels through Louisiana, p. 298. [6] Hist. Am. Indians, p. 183. [7] Nat. Hist. Florida, p. 90. [8] February, 1884. [9] Travels, p. 505. [10] Natural His'. Florida, p. 71. [11] Antiq. So. Indians, p. 203. Georgia and Florida, Jones' Antiq. So. Indians, pp. 183-5. [12] La Hontan. [13] Travels, I, p. 251. [14] Hist. Carolina, p. 182. [15] Travels, p. 515. [16] Hist. Amer. Ind., p. 182.

tom are so common in mounds as to lead to the supposition that the Mound Builders were in the habit of offering human sacrifices to their deities. Although charred and even almost wholly consumed human bones are often found, showing that bodies or skeletons are sometimes burned, it does not necessarily follow that they were offered as sacrifices. Moreover, judging from all the data in our possession, I think the weight of evidence is decidedly against such conclusion. But the discussion of this question is not involved in the present argument, hence I omit it.

Among the Indians, fire appears to have been connected with the mortuary ceremonies in several ways. One use was to burn the flesh and softer portions of the body, when it was removed from the bones.[1] Brebœuf also mentions its use in connection with the communal burial of the Hurons.[2] According to M. B. Kent,[3] it was the ancient custom of the Sacs and Foxes to burn a portion of the food of the burial feast, to furnish subsistence for the spirit on its journey.

Picket says[4] the Choctaws were in the habit of killing and cutting up their prisoners of war, after which the parts were burned. He adds further, in reference to their burial ceremonies,[5] "From all we have heard and read of the Choctaws, we are satisfied that it was their custom to take from the bone house the skeletons, with which they repaired, in funeral procession, to the suburbs of the town, where they placed them on the ground in one heap, together with the property of the dead, such as pots, bows, arrows, ornaments, curious shaped stones for dressing deerskins, and a variety of other things. Over this heap they first threw charcoal and ashes, probably to preserve the bones, and the next operation was to cover all with earth. This left a mound several feet high." This furnishes a complete explanation of the fact that uncharred human bones are frequently found in southern mounds, imbedded in charcoal and ashes.

Cremation was practiced to some extent among the tribes of the Pacific slope, and is supposed by some to have been practiced, to a limited extent, by the Indians of the Mississippi Valley and Gulf States, and also to have been a common custom among the Mound Builders.[6] If we accept this opinion as correct, it furnishes an additional argument in favor of the view here advanced, still I am inclined to doubt its correctness as applied to either the Mound Builders or Indians, but will not stop to give my reasons for this opinion at this time.

Several other points might be mentioned in which the burial

[1] Barnard Romans, Nat. Hist. Florida, p. 90. [2] Jesuit Relations for 1636, p. 135.
[3] Yarrow's Mortuary Customs N. A. Ind., 1st Am. Rep. Bur. Ethn., p. 95.
[4] Hist. Alabama, 3d Edn., I, p. 140. [5] I, p. 142.
[6] Dorman, Origin of Primitive Superstitions, p. 171. Wilson, Prehistoric Man, II, p. 211.

customs of the Indians and Mound Builders resembled each other, but we will have occasion to allude to most of these in another connection.

SIMILARITY OF THEIR STONE IMPLEMENTS AND ORNAMENTS.

In addition to the special points of resemblance between the works of the two peoples, of which a few only have been mentioned, we are warranted in asserting that in all respects, so far as we can trace them correctly, there are to be found strong resemblances between the habits, customs and arts of the Mound Builders and the Indians, previous to change by contact with Europeans. Both made use of stone implements, and so precisely similar are the articles of this class made by the one people, to those made by the other, that it is impossible to distinguish one class from the other. So true is this, that our best and most experienced archæologists make no attempt to separate them, except where the conditions under which they are found furnish evidence to guide them. We find even Dr. Rau, whose long and careful study of articles of this class, both of Europe and America, would certainly enable him, if any one, to decide in this case, thus frankly stating his opinions: "In North America, chipped, as well as ground, stone implements are abundant; yet they occur promiscuously, and thus far cannot be referred to certain epochs in the development of the aborigines of the country."[1]

The European classification into *Paleolithic* and *Neolithic* is wholly out of place and confusing, when applied to the stone articles of America, and the term "stone age" has no chronological signification here.

Instead of burdening these pages with proofs of these statements, by reference to particular finds and authorities, I call attention to the work of Dr. C. C. Abbott, on the handiwork in stone, bone and clay, of the native races of the Northern Atlantic seaboard of America, entitled "Primitive Industry." As the area embraced in this work, as remarked by the author, "does not include any territory known to have been permanently occupied by the so-called Mound Builders," the articles found here must be ascribed to the Indians, unless, as suggested by the author, some of a more primitive type, found in the Trenton gravel, are to be attributed to a preceding and ruder people. Examining those of the first class, which are ascribed to the Indians, and to which much the larger proportion of the work is devoted, we observe almost every type of stone articles found in the mounds and mound area.

Not only the rudely chipped scrapers, hoes, celts, knives, spear and arrow heads, but also the polished or ground celts, axes, hammers, chisels and gouges. Here we also find drills,

[1] Smithsonian Arch. Col., p. 7.

awls and perforators; slick-stones and dressers; mortars, pestles, and pitted stones; pipes of various forms and finish; discoidal stones and net sinkers; butterfly-stones and other supposed ceremonial objects; masks or face figures and bird-shaped stones; gorgets, totems, pendants, trinkets, etc. Nor does the resemblance stop with types, but is carried down to specific forms and finish, leaving absolutely no possible line of demarkation between them and the similar articles attributed to the Mound Builders. So persistently true is this, that had we stone articles alone to judge by, it is probable we would be forced to the conclusion, as held by some writers, that the former inhabitants of that portion of the United States east of the Rocky Mountains pertained to one nation, unless, possibly, the prevalence of certain types in particular section-should afford some data for tribal districting.

This strong similarity of the stone articles of the Atlantic coast to those of the mound area was noticed as early as 1820, by Caleb Atwater, who knowing that the former were Indian manufactures, attributed the latter also to the same people, although he held that the mounds were the work of the ancestors of the civilized nations of Mexico and Central America.[1]

MOUND AND INDIAN POTTERIES.

The pottery of the Mound Builders has often been referred to as a proof of a higher culture status, and of an advance in art beyond, that reached by the Indians. I am inclined to believe that some writers have been led to this conclusion by an examination of the figures and drawings, without a personal inspection of the articles. That all mound pottery is comparatively rude and primitive in type, manufacture and material, must be admitted. It is true that specimens are frequently found which indicate considerable skill and advance in art, as compared with that of other barbarous people, but there is nothing to remind us of the better ware of Peru, Mexico and Central America; and so far as my examination extends, I have not seen a single piece that is equal in the character of the ware to some of the old Pueblo pottery. The finest quality of mound ware I have seen is a broken specimen, [evidently aboriginal], pertaining to an intrusive burial, in a Wisconsin mound, and, strange to say, the ornamentation, which is rather unusual, is almost exactly like that on some pottery found in mounds of Early County, Georgia.

The vase with a bird figure, found by Squier and Davis, in an Ohio mound, is presented in most works on American archæology as an evidence of the advanced stage of ceramic art among the Mound Builders, but Dr. Rau, who examined the collection of these authors, says, "Having seen the best speci-

[1] American Antiquarian Soc., Vol. I, p. 3.

mens of mound pottery obtained during the survey of Messrs. Squier and Davis, I do not hesitate to assert that the clay vessels fabricated at the Cahokia Creek were in every respect equal to those exhumed from the mounds of the Mississippi valley, and Dr. Davis himself, who examined my specimens from the first named locality, expressed the same opinion."[1] The Cahokia pottery which he found along the creek of that name, (Madison County, Ill.), he ascribes to Indians, and believes it to be of comparatively modern origin.

Most of the mound pottery, as the reader is probably aware, is mixed with pulverized shells, which is also true of most Indian pottery.[2] Du Pratz says, "The Natchez Indians make pots of an extraordinary size, cruses with a medium sized opening, jars, bottles with long necks, holding two pints, and pots or cruses for holding bear's oil;"[3] also, that they colored them a beautiful red by using ochre, which becomes red after burning.

As is well known, the bottle shaped vase with a long neck, is the typical form of clay vessels found in the mounds of Arkansas and southeastern Missouri, and is also common in the mounds and stone graves of Middle Tennessee. Those colored or ornamented with red are also often found in the mounds of the former sections. It is also worthy of notice in this connection that the two localities—near St. Genevieve, Missouri, and near Shawneetown, Illinois—where so many fragments of large clay vessels used in making salt have been found, were occupied for a considerable length of time by the Shawnee Indians. As will hereafter be shown, there are reasons for believing this pottery was made by the Shawnees. I will only add here, that by the treaty of Ft. Wayne, (June 17, 1803), the United States agreed, in consideration of the cession by the Indians of the "Great Salt Springs, on the Saline Creek, near the mouth of the Wabash," to deliver to the tribes who were parties to it, "one hundred and fifty bushels of salt annually." From this I infer that the Indians were in the habit of procuring salt at this locality.

The statement so often made, that the mound pottery, especially that of Ohio, so far excels anything made by the Indians, is a mistake, and is not justified by the facts. We find Wilson, carried away with this supposed superiority of the Ohio mound pottery, going so far in his comparisons as to ascribe the ornamented ware found in the mounds of Mississippi to the "red Indian," yet asserting in the same paragraph that it "suggests no analogy to the finer ware of the Ohio

[1] Smithsonian Rep. 1866, p 349.
[2] Dumont, Mem. Hist. La., II, p. 271, 1753; Adair, Hist. Am. Indians, p. 424; Loskiel, Gesch. der Miss., p. 70, etc.
[3] Hist. La., p. 179.

mounds."[1] On the other hand, Nadaillac affirms that the pottery of Missouri, that found in the southeastern part of the State, "is superior to that of Ohio."[2] So far as I can ascertain, the supposed superiority of the Ohio mound pottery, maintained by so many writers, is based wholly on the description of *two vessels* by Squier and Davis.

BOTH CULTIVATED MAIZE AND USED IT AS FOOD.

A resemblance between the customs of the Mound Builders and Indians is to be found in the fact that both cultivated and relied, to a certain extent, upon maize or Indian corn for subsistence. That this was true of the Indians when first encountered by Europeans, has been shown by Prof. Lucien Carr, in the work referred to in our previous article, and will doubtless be admitted by all. That the Mound Builders must have relied, to a large extent, upon agricultural products is conceded, and that maize was their chief food plant is generally admitted; but this is not left to conjecture, as we have proof of it from the mounds and ancient works. Not only do we find the prints of cobs on many clay vessels, but lumps of clay which have been pressed around the ear of corn, and then burned, have recently been found by the agents of the Bureau of Ethnology in some of the Arkansas mounds. From these, we judge the variety to have been what is known in the south as "Gourd seed corn." Charred ears, cobs and grains have been found in mounds and in pits or caches, which appear to be the work of the so-called "Veritable Mound Builders."

We may also mention in this connection another fact which, though negative in character, appears to form an argument in behalf of the view we are attempting to maintain. Although *metates* are and, from time immemorial, have been in common use among the Central Americans, Mexicans and Pueblo Indians, not one has been found in connection with the ancient works east of the plains, and so far as I can learn, only two or three have been found in this entire area. These were dug or plowed up in Missouri, not far from the Missouri River.

The Mound Builders used stone mortars for grinding paint and for other purposes, but few, if any, of those found appear to have been adapted to grinding maize, at any rate they bear no resemblance to the metate. It is, therefore, more than probable that they made use of the wooden hominy mortar, just as the Indians were accustomed to do.

I am fully aware that some of the customs alluded to are common to barbarous or uncivilized nations, and that it is probable any other people in the same stage of civilization, had they occupied the region under consideration, would have

[1] Preh. Man, II, p. 23, Edu. 18.
[2] L'Amerique, Prehistorique, p. 171.

adopted similar customs, but the fact that the Indians are the only aborigines known to have inhabited this region must be constantly kept in mind. Hence, as heretofore stated, every resemblance in customs, habits, arts, etc., is an argument in favor of the theory advanced. But, what is more conclusive, the particular types of these customs indicated, as will be apparent to the close observer, tend more and more to exclude from consideration the Mexican and Central American nations.

CYRUS THOMAS.

SOME CHARACTERISTICS OF THE INDIAN EARTH AND SHELL MOUNDS ON THE ATLANTIC COAST OF FLORIDA.

The sand and shell mounds raised by the ancient Indian tribes on the eastern coast of Florida, are distributed very evenly along the greater length of that seaboard. From Fernandina through to the St. Johns, and thence to Matanzas Inlet they occur with great frequency; from that point to Mosquito Lagoon the shell mounds may almost be called continuous, and again they are found less abundantly to the head of Bay Biscayne. The whole of this range of coast has an external line of coast or sea beach, varying from a few yards to five miles in width, separated from the main land by a parallel line of lagoon, which constitutes an inland waterway, and which would be continuous but for the intervention of an occasional neck or isthmus a few miles, sometimes yards, in extent, linking the outlaying promontory to the main land. These lagoons receiving on the west the drainage of the entire length of the eastern water-shed of the peninsula, and by inlets the tide water from the east or Atlantic side, have, from the time of their formation or upheaval, supplied vast quantities of shell fish, and constituted the favorite resort of the aboriginal occupants of the Peninsula. Throughout the extent of this lagoon, on the one side or the other, appear the shell mounds or ridges left by the Aborigines in consuming shell fish during a vast period of years. Equal in frequency, but vastly inferior in dimensions, the sand mounds keep pace with the shell mounds, but the former rarely appear upon the outlying beach, while the latter usually found there frequently appear, when that beach is narrow, upon the western shore of the Lagoon. It can hardly admit of question that the same people constructed both kinds, and the greater or lesser age of the shell mounds finds a counterpart in an equivalent era of the different sand mounds. Whether these tribes were permanent occupants, or at certain seasons, say for three months of the

winter, left their fresh planted fields in the interior, to subsist upon the shell fish of the coast, till their crops matured, as some believe, is a question as yet undetermined. Laudonniere, who has given an exceedingly minute and apparently truthful account of their customs, states that in the winter they retired to the forests for shelter from the winds, and engaged in hunting. If the former idea is correct, we can only wonder at the vast period of time required to raise these enormous piles to whose construction but a quarter of each year was devoted. It is quite possible that the sand mounds, even if built by the same people, may have been sufficiently near to their permanent villages to have answered their needs. In that case so far as these sand mounds are concerned, it is indifferent whether their occupation of such shell sites was permanent or temporary. The River St. Johns divides the northern half of the Peninsula of Florida longitudinally, leaving the narrowest section of the State to the East. The strip left between that river and the Atlantic coast lagoons, varies in width from three miles at its head waters, to twenty, and occasionally even more, further northward. When divided into many communities of limited size and more or less independent, such as existed at the time of the Huguenot settlement, their permanent villages no doubt existed on all the fresh water streams flowing seaward through this strip, which was capable of easy cultivation, and the sand mounds erected with rare exceptions in the neighborhood of such streams near their outlet, would have subserved the purpose desired, whether considered as adjuncts to the Shell mounds, or to the settled residences of their constructors. Most of the shell mounds on the coast are progressive in their construction, and exhibit this very markedly when carefully examined. On the South Matanzas river, twenty-five miles south of St. Augustine, this characteristic is very beautifully shown in Dupont's Mound. This Shell Mound extends from the sea coast westerly to the interior lagoon. Its length is about half a mile, and its width the same. On the sea coast it has been abraded by the surf, and some years since, its precipitous bank fifteen feet in height, afforded the best facility for examining its successive layers of shell debris. The black lines showing the hearths dark with burnt shell and mingled with fragmentary pottery, indicated successive stages of occupation. Mingled sparsely with the surrounding shell could be extracted bones of fish and fowl, of turtle, alligator and deer. From the stratification of the shell could be inferred the preference of the natives for this or that shell fish. The conch, the clam and oyster, the minute donax, the large sea snail, were sometimes intermingled in the layers, but occasionally one or the other kind preponderated; the donax sometimes appearing in strata six inches in thickness. The oyster, how-

ever, was most abundant. The growth of this mound was evidently from East to West, and we could inspect at this portion of its bed its most ancient strata. Where the sea had abraded it, the perpendicular height, including three feet of superincumbent soil, was twenty feet, and it was based upon a low outcropping of Coquina or shell conglomerate. The surface of the mound was rather rolling than level, stretching along in easy undulations, covered for some hundred feet with a thick growth of the Spanish bayonet and scrub palmetto. This again gave place to a heavier growth of live oak and cedar, bay and wild orange; the surface became more irregular, outlying moundlets of shell started out from the marsh, linked to the parent mound by a low shell ridge. The mound was now encroaching upon the area of the lagoon and still had reached but half its length. The surface generally dropped to a lower level and became more hillocky, the undulations were steeper and shorter; at length it resembled a gigantic honeycomb. We were threading pits about fifteen feet in diameter, flanked and separated by ridges of from six to eight feet in height. Gaps in these ridges allowed passage between the several pits. It required but a small stretch of the imagination to imagine each wigwam nestled in its separate enclosure, its occupants lounging about the fire or crowding through the convenient pathways, while day by day the shell ridges grew in height and threatened to fall in and crowd out the tribe. At this point some calamity has swept them away forever, steadily, surely but slowly, vegetation closes over the scene, centuries pass, and the shells are buried far out of sight in a soil which nurtures the most massive trees, under whose shade we pass out from the cluster of hillocks directly upon the bank of the lagoon. I know of no shell mound in Florida which tells its own story so eloquently as this Dupont's Mound. Immediately opposite this mound Pellicere's Creek opens out on the western side of the lagoon, and following up its course about three miles we reach on the north bank, Rhotan Landing, where a shell bank and field indicate an early Indian village. Three-quarters of a mile westward from this landing is a sand mound known in my records as Rhotan Mound. The distance between this and Dupont's Shell Mound is about five miles, about one and a half miles of which constitute the breadth of the Lagoon. This was the first Indian mound I had the opportunity of exploring. Its form was that of a truncated cone, with unusually steep sides, rising at an angle of forty-five degrees. Its height above the trench at its base was twenty-two feet, and above the natural level of the old fields in which it stood, eighteen feet. The summit was a slightly convex plateau of thirty feet in diameter, and the diameter of the mound at the base was eighty-five feet. It was composed of a fine cream-colored silicious sand, and at the

time I visited it, it was covered, both summit and sides, with a moderately thick growth of trees, some of them fifteen inches in diameter. The sand composing this mound had evidently been taken from the trench at its base, but it was now doubtless reduced in depth by the washings from above, during the lapse of centuries, and it melted so gradually and imperceptibly into the remote level of the plain that it was impossible to determine where the excavation terminated. The trench in its course about the mound was interrupted by three undug strips of the original level, equidistant from each other. They were about six feet in breadth and were a very marked characteristic of the base. It might be inferred that the aboriginal constructors had a special reverence for this peculiar figure, attaching to it some religious or superstitious signification, but I imagine it was simply the design of the savage to reduce the labor of ascending with his load, when the increasing width of the trench compelled him to take it from a distant point. Gathering the soil in baskets from the widening excavation he must descend into the trench, and again ascend the soft, fresh sand upon the steep slope of the mound, but by reserving this natural causeway he could avoid the extra descent and reach the slope at a point considerably above the base, and have a reduced proportion of the soft slope to encounter. The exploration of this mound was the work of several days, and not very fruitful in results. Burials, no doubt original ones, were found ten feet from the summit but too decayed to be preserved or gathered. They comprised bones massed together with the skull on top, occupying a space about two feet by ten inches. The adjacent soil was slightly discolored by the red paint with which they had been coated, frequently only a few teeth were discernable. It was impossible to estimate the probable number of burials—a matted mass of beads was exhumed at a depth of five feet, and, at a depth of four feet but quite apart from each other, were found three celts and two fine quartz pebbles, one grooved as a sinker, the other evidently at one time fitted with handle and used as a skin polisher. I have singled out this mound rather as exhibiting the natural causeways designed to save labor. I rarely observed it in mounds of moderate height, say six to ten feet, but on larger mounds the idea was expressed in some similar way. I remarked this on a large mound upon Spruce Creek, in Volusia County. This Creek emptied into Halifax river, a few miles north of Mosquito inlet. The mound, known as Spruce Creek Mound, is on the southwest bank of that creek, some six miles above the mouth. It is thirty-two feet high above the level of the plain on its south side; on the north side it shows a flank ridge of about four feet wide, which starts about twelve feet below the summit, and, gently declining, reaches the ground at a distance

of about 120 feet. Its "raison d' etre" is plainly indicated by the numerous square pits just beyond the terminus, still from six to eight feet in depth, from which earth for constructing the mound was no doubt taken. Following up this same idea, there are found in Ross Hammock—four miles south of Oak Hill, on the west side of Mosquito Lagoon, and twelve miles north of the Hanlover Canal into Indian river—two sand mounds, which show still more strikingly the same artificial approaches. The mounds themselves are the usual truncated cones, and attain a height of twenty-three feet above the immediate level around them. They are but 250 yards apart, and lie on opposite sides of a small fresh water stream, which I suspect is an artificial drain made by early English settlers. That on the north bank is 250 yards from the shore of the lagoon, facing northwest, the flanking ridge sinking to the southeast. That on the south bank is under 200 yards from the shore, faces north by east, and its appended ridge extends in a direction south by west. They were identical in shape and dimensions. The mound proper was exceedingly steep, say forty-five degrees. The diameter of summit area was about forty feet, and the flanking ridge commenced at this level and descended for some fifty feet, at an angle of thirty degrees; then continued for some seventy-five feet on a much slighter incline, and then sunk to the natural ground level at an angle of thirty degrees. The area of the base of this structure was ovate or leaf shaped; its longitudinal diameter 300 feet, its greatest width 100 feet through center of mound proper. About the entire base the water stood from one to two feet in depth, through which we were compelled to wade. The growth of live oaks, palmetto, sweet bay and other trees, was exceedingly dense, and it was impossible to estimate to what distance in the surrounding area the excavations for material to construct the mounds extended; but the amount of earth required must have been enormous. In these two instances cited, the flanking ridges were so much more massive than in the case of the Spruce Creek Mound, that it may still be deemed an open question whether they were not designed to subserve some more important purpose than mere aids to the erection of the mound. The Spruce Creek Mound was no doubt a mound of observation, and the flanking ridge in that case became of permanent value, but two contiguous mounds, such as these, could not have been required for such a purpose. If these were ceremonial mounds, some sort of harmony in their line of direction might have been expected. If mounds of residence, such as the early Spanish explorers describe upon the west coast, the villages circled about their respective bases would have become seriously "mixed," and it is still questionable whether mounds were ever erected in this state, at least, for such a purpose, and not, on the other hand,

availed of and adopted to that use by tribes ignorant of or indifferent to their original purpose. The whole neighborhood teems with shell mounds. On the opposite sea-beach, here a very narrow strip, they are visible in numbers, and the sand dunes doubtless conceal many others. Northward they line the lagoon on the western bank, sometimes in long ridges, now appropriated at Oak Hill and its vicinity for residences, and again, in a single eminence, twenty-five feet in height, such as Bissett's Mound, two miles still northward, and covered with a wild orange grove, about 200 yards in the rear of which I explored a very large sand mound. Again, on the sea-beach, about seven miles N.N.E. from Bissett's Mound, rises the well known shell heap called Turtle Mound, no doubt converted by the early races into a mound of observation, and so frequently referred to in books of travel as to render description here superfluous. During the early historical period this part of the coast is reported as densely populated. MENENDEZ, the founder of St. Augustine, held a council at or near Cape Carnaveral in 1566, attended by over 1,500 natives. Before dismissing the consideration of these Ross Mounds, I would say that the results of their exploration, so far as it could be done, was unsatisfactory. The northerly one had been planted with young orange trees by the present owner of the estate, and in his absence and that of his agent, no extended excavation was possible without interfering with the plants, which would have involved legal complications embarrassing to an explorer. I contented myself, therefore, with sinking on the summit occasional pits of three feet in depth, finding many intrusive burials extremely decayed, and no relics whatever. On the Southern Mound I carried in a trench twenty-five feet wide on the eastern declivity, about ten feet above the base level. This trench gradually converging to fifteen feet width, I carried in forty feet to a point on the summit a few feet beyond the center, finding only evidence of surface and intrusive burials both on summit and sides. One of the skulls, exhumed but two feet below the surface, was in a good state of preservation, and within the jaws I found a cylindrical copper bead, which had colored the teeth, and preserved the integuments from decay in its vicinity. An arrowhead, two inches in length, and the columella of a conch shell, trimmed down to a merchantable shape and size, were the only other objects found. The absence of visible evidence of burial in the main bulk of such a mound, cannot safely be regarded as a proof that such burials were not originally made. I have found them in mounds in every stage of decay, down to barely distinguishable mottlings of the soil. A large majority of the sand mounds have been used for Indian or European burials long subsequent to their erection. These are generally burials at length; the bones not being massed, are deposited often in a nest of oyster shells; the

skulls more or less firm, and only partially filled with sand, and at very inconsiderable depths, on the summit or sides of the mound. Other modern indications are glass beads, and these have sometimes been used to prove the mound a post-Columbian work, though I am strongly disposed to question the soundness of such an inference, from possibly intrusive relics. So far as my own experience goes, none of the mounds upon the east coast have produced a single glass bead, though they often show abundant masses, matted together, of those made of shell. In exploring a small mound of seven feet height and seventy feet base diameter, at Moses Creek, twelve miles south of St. Augustine, I found, at a depth of four feet, a small bed of oyster shells enclosing very decayed human bones, and in the earth above this, fragments of burnt wood; large iron spikes, now masses of rust, bits of porcelain plate, and a beautiful stone celt. I found four other celts during my further excavation of this mound, and other burials in oyster shells. Had it not been for these undoubtedly antique relics, the erection of this mound might with reason have been assigned to the present century, but an aged colored man, of whom I made careful enquiries, told me that about fifty years since this plantation was a large cotton field, and from a summer-house upon this mound the overseer overlooked the slaves at work. The summer-house was burned down, and subsequently they buried the deceased slaves in the mound. This was enough to satisfy me that the debris of such excavations, mingled with the remains of the Summer-house and the broken plates of the overseer, had been used to fill the graves. The celt, no doubt, had been exhumed and reburied unnoticed at the same time. The use of a causeway or ridge as an attachment to a mound, appears in several other cases where the mound is constructed on the edge of a natural terrace, or at the end of a natural elevation. About twelve miles north of St. Augustine, on the west bank of North or San Diego River, a sand mound is raised on the edge of a plateau, about five feet above the level of the plain. On either flank the earth has been dug from the plateau, leaving a width of about ten feet still attached to the mound. Towards the lower plain the height of the mound appears as thirteen feet, while from the plateau level its elevation is but seven feet. This must have been an imposing object from the water side, and has a particular interest from the fact that I found in its depths the only copper object, with the exception of the bead just mentioned, I have found in the sand mounds of the east coast. It is one of the copper ear disks, at one time called the spool-shaped ornament, and not infrequently found in Ohio. A striking mound of somewhat similar construction is found near the southern boundary of St. John's county, about three miles north of Bulow Forks, on the east side of the old

"King's Road." A spruce ridge, extending in a direction nearly northwest and southeast for several miles, here drops suddenly off, where it is intersected by a stream or branch running eastwardly toward Bulow Creek, one of the northern affluents of Halifax River. The ridge, though a natural one, is slightly undulating, and the last knoll had a peculiar prominence, which suggested the possibility of an artificial treatment. A further exploration disclosed the fact that it was a veritable Indian mound, formed on the last easy slope of the natural ridge, by cutting away the intervening ridge on the summit and sides, and heaping the earth upon the separated section of the ridge. The result was a mound eight feet high as visible from the ridge, and twenty-five feet high as viewed from the plain below. A thorough excavation revealed the faint but easily discernible line of the original level, about four feet above the lowest level of the connecting neck, which was narrowed to ten feet in width by excavations for earth from the slopes on either side. This ingenious construction produced an exceedingly imposing effect from every point of view but the northwest, procured at a comparatively small outlay of labor. The only visible remnants of burials were human teeth and fragments of jaws. The relics were three celts and numerous shell beads. Another mound, aggrandized in the same way, is found on the south bank of Tomoka Creek, a mile or so from its outlet into Halifax River, and some twelve miles southeast of that just described. It is set upon the northern extremity of a rolling ridge, probably an ancient sea beach, and faces the swampy verge of the creek. Its base on the northwest and west descends at a very easy slope until it sinks into a pond, which plainly is the result of excavations on that side. From the swamp side it appears a mound twenty-five feet in height, while on the east, where the natural level of the ridge is not reduced, it is fourteen feet in height. It is a majestic object, and has given the name of Mount Oswald to the plantation of which it must have been a conspicuous ornament, when Mr. Oswald, one hundred and twenty years ago, obtained a grant of some thousand of acres from the English government, and had his residence some eight hundred yards away on the bank of the river. On excavation this mound produced the cache of ceremonial objects exhibited at the meeting of this association in Montreal two years since, but no evidence appeared of any burial, nor was any other object of special interest found. The Halifax river is to the eastward about three-quarters of a mile distant. Its width there is about a mile. On the east bank of that river is a shell ridge, in height varying from eight to fifteen feet, which extends almost uninterruptedly in a southeast direction, eight miles along its margin. It has upon it, in that distance, several residences, and a road runs along its summit for three or four

miles. This ridge widens occasionally to one hundred feet on the summit, though its average base width would be one hundred and fifty feet and summit fifty feet. Two sand mounds rise upon its summit plateau, which may aid in assigning a limit of age to one or the other. The drifting sand of centuries must have buried the one, before it provided available material for the erection of the others.

A. E. DOUGLASS.

GAME DRIVES AND HUNTING SCREENS AMONG THE MOUNDS.

The use of mounds and earthworks for hunting purposes is the topic which we shall next consider. We have referred to the game drives, which may be found among the Emblematic Mounds, but we now propose to describe these more fully, and to bring before our readers other works which were probably used by hunters.

I. We shall first speak of the hunting races which formerly dwelt upon this continent. Our reason for referring to these is because in them we have a picture of the habits and customs which probably prevailed among the Mound Builders. The hunting races of this continent were numerous and widespread; in fact, it would seem as if nearly all the American tribes were hunters. The uncivilized tribes were certainly in the habit of seeking after game and drawing their subsistance from hunting, and even those tribes which were partially civilized were also given to the same pursuit.

1. There are in the writings of the early explorers many descriptions of the hunting races which were once common, and from these we may learn what customs prevailed in prehistoric times. Great changes have taken place in the manner of hunting since the advent of the whites. The bow and arrow and other primitive weapons served the native hunters well, but they required more skill in hunting and drawing near to the game, as they were necessarily used at a short range. The absence of horses also resulted in the same thing. The hunters were obliged to contrive various ways by which they could entrap the game so as to avoid the necessity of chasing them on foot. The modern method of hunting is to mount a horse, and to take the rifle in hand and then ride rapidly and shoot as one rides. But the primitive method was to approach the game by stealth and to shoot at them from hiding places, rarely depending upon the contest of speed for success in overtaking them. We can hardly realize the contrast between the methods of hunting during the prevalence of the stone age and the present methods, except as we read the descriptions

of the early explorers and compare them with the accounts of recent travelers and huntsmen. One thing is noticeable, that all of the hunters in the early times, before the introduction of guns and horses, depended much more on the various contrivances by which they could surround the game and drive them into narrow passage ways, and so get near them and slaughter them with their primitive weapons. The skill of the hunters was exercised in erecting these screens and drives, as much as it was in shooting, though both were combined in many cases. The hunters were well acquainted with the habits of the animals and knew all their haunts and runways. They relied upon this knowledge as much as they did upon their own strength of endurance. They frequently moved with their families and all of their possessions into the midst of the regions where the game abounded, and thus became familiar with the animals in their own haunts. They continued wandering about from place to place, according to the season, that they might the better hunt the different kinds of game, but they were always near the haunts of the animals and familiar[1] with their habits. Some of the tribes, to be sure, depended to a certain degree upon the cultivation of maize, and were at certain seasons stationary, making their villages near streams and rich bottom lands during the summer months, but migrated to hunting grounds during fall and winter.

The primitive ways of hunting are very interesting, especially as they come before us in the descriptions of the explorers who witnessed them, and who were much attracted by their novelty.[2] There is no doubt that these customs were just such as had prevailed among the native races from time immemorial, and we may therefore look to these accounts for illustrations of the hunting habits which were common in the prehistoric times. We must, however, remember one thing, and that is that the native races differed among themselves in their manner of hunting and in all their habits of life, and should therefore consider them in their different geographical locations and their different grades of culture.

2. This brings us then to a second point, the geographical location of the races. The continent of America is divided into belts, each of which was occupied by a different class of

[1] See Parkman's volume on the Oregon trail; Our Wild Indians, by Col. R. I. Dodge; The Red Man and White Man in North America, by G. A. Ellis; Gregg's Commerce of the Prairies.

[2] Our readers will find the volume edited by Mr. Francis G. Drake, and published by Lippincott & Co., suggestive on this point. It appears from this that even those tribes among whom agriculture was very extensive, such as the Creeks, Choctaws and Chickasaws, were hunters. They continued their hunting habits late into history, even up to the time of the war of 1812; and, notwithstanding the missionary work which was done among them, were in the hunting condition at the time of their removal from the Southern States.

people, and presented a different grade of culture; a wonderful correlation having existed between the geography and the social status of the people.[1] We have shown that there were five or six such belts, and that there were also the same number of grades in the social status of the people. These facts we refer to here, for they illustrate the point which we have in view.

The belts of latitude and social grades are as follows: (1.) That belt which is embraced by the Arctic regions. This has always been occupied by the Esquimaux, who are emphatically fishermen. This is the habitat of the fishermen and here we should expect to find tokens indicative of the same mode of life, both in the historic and pre-historic times.

(2.) Next is the belt which we should call the habitat of the hunting races. It is a belt which embraces all that region which lies between the Hudson Bay and the chain of the great lakes, and which is at the present time occupied by the Athabascans and Tinneh races.[2]

(3.) Next to this is the belt which may be said to have belonged to the mingled agricultural and hunting state, as the races occupying it were both agriculturalists and hunters. This belt originally embraced all that region which lies between the great lakes and the valley of the Ohio river, but extended in an irregular line across the continent, and came out upon the Pacific between the mouth of the Columbia river and the Gulf of California region, have figured conspicuously in American history.[3] We consider them wild tribes, and can hardly think of them as cultivators of the soil, yet they were agriculturalists as well as hunters, and it is only because we read of them in their warlike state that we consider them as we do, merely savages. The descriptions given of the tribes occupying this region show that they were agriculturalists, and within certain bounds were also sedentary. All the tribes had their own habitat, and within their own bounds were accustomed to follow a life peculiar to themselves, some of them being more advanced than others, but all within this belt had reached a status which was such as we have described.

(4). A belt of latitude was formerly occupied by races

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[1] See paper read before the American Association for advancement of science, at Minneapolis, September, 1883. "Synopsis of the Indian Tribes," by Albert Gallatin; also, "Our Indian Tribes," by Francis G. Drake. The last two volumes contain maps which are valuable.

[2] For information on the Tinneh races, see Bancroft's Native Races of the Pacific Coast, Vol. III.

[3] For information on these tribes see "Morgan's League of the Iroquois," "Parkman's Pioneers of France," and "LaSalle and the Discovery of the Great West; also, "The Conspiracy of Pontiac," and "Catlin's Indians," and "Indians of Berks County," Pennsylvania, by D. B. Brunner.

which were purely agricultural.[1] This belt is the one which is embraced between the Ohio river and the Gulf of Mexico, or more definitely considered, between the mountains of Tennessee and the Gulf Coast. It was the habitat of the Mobilian race, and was at an early date full of the works of agriculture. We may suppose that even in the times of the Mound Builders that agriculture was common here.

(5.) A belt may be mentioned which formerly, and even at the present time, may be considered as the habitat of village Indians. This is the region which is at present occupied by the Pueblos; a region which is embraced within the bounds of Colorado, New Mexico, Arizona, and a part of Mexico and California. The races which have occupied it are not merely agriculturalists, but are village Indians, for they depend upon manufacturing and other modes of subsistance as well as upon horticulture.

Thus do we see that the geographical locality had the effect to keep certain tribes in the hunting condition, and we may take it for granted that the tribes which were located in the districts were hunters. This would prove as true in the pre-historic times as the historic. From this we may learn what was the probable condition of the emblematic Mound Builders. The question has arisen about them whether they were hunters, resembling the later hunting tribes. In what grade shall we place them? What shall we say in reference to their cultus and mode of life? In answer to these questions we would say, that both their geographical location, and the various tokens which they have left behind them, would indicate that they belonged to the hunter class, but were in a grade of cultus where agriculture as well as hunting were the common employments. We would say, however, that the hunting habit was much stronger with them than the agricultural. Still they resembled very much the hunting tribes which are known to history, and differed mainly in the fact that they erected emblematic mounds.

3. A third point arises here. Were the emblematic Mound Builders, Indians? The answer to this depends upon the definition which we give to the terms. There are three ways in which we may use the term Indian: (1.) The native inhabitants of this continent. (2.) The uncivilized races of the continent. (3.) The hunting and savage people who formerly committed such depredations upon the settlers and who are still called the wild Indians. The term Mound Builders also has several definitions. It may mean: (1.) The people who erected mounds, whether in this country or in any other.

[1] For information on the agricultural tribes of the Gulf States see Adair and Bartram's Travels. Also "A migration legend of the Creek Indians," by A. S. Gatschet, Library of American Aboriginal Literature. Vol. IV.

(2.) The people who erected the massive and elaborate works, which are found in certain localities and who were called Mound Builders par excellence; (3.) It may mean the particular people who erected the earth works in some definite locality without regard to their skill or nationality, or the time in which they existed. The decision, then, as to whether the Mound Builders were Indians, must depend upon the class of Mound Builders and the class of Indians about which we are speaking. We are always inclined to answer the question by asking another. What Mound Builders and what Indians? To illustrate: The mounds in Ohio are massive and elaborate structures, and were evidently erected by a people who were advanced in their stage of cultus. The Indians which latterly occupied this territory were a rude, uncultivated people, who were incapable of erecting these works. The supposition is that the original Mound Builders of this locality were at some time, previous to the historic period, driven out from their habitat, and that the wild tribes came in and occupied the region. This migration of the race may have been owing to the aggressions of the Iroquois, or possibly to the advent of the white man; but it was sufficient to make an entire change in the population.

Similar changes may have occurred in other regions. There is no certainty that the races or tribes which were found in the midst of the mounds and earth works of the Gulf States, were the descendants of the Mound Builders, for the migration of the races would render this doubtful.

In reference to the emblematic mounds, however, we have this to say: That the people who erected them were so similar in their habits and modes of life to the tribes which occupied the region at the opening of history, that we have no hesitation in saying that they were hunters as well as agriculturalists, and that the hunting habits of the later races furnish good illustrations of the customs which prevailed among them.

II. We turn, then, to the consideration of the Emblematic Mounds, as built by hunters.

The first evidence we shall give is the fact that wild game so abounded here. The testimony of all the early explorers is to the same effect. In reading their narratives, we frequently come upon descriptions of the wild animals which they saw. These animals were unfamiliar to them, and they did not know even their names, yet the narrations shows that many wild beasts abounded here, and that the region was emphatically hunting ground.

The first author which we shall cite, is Marquette the missionary.

This devout missionary, in the year 1673, passed from Green Bay up the Fox River, across the Portage and down the Wisconsin. He is supposed to have been the first one to discover

the upper Mississippi. He was attended by Joliet and five Frenchmen, in two bark canoes. His journal is interesting, as it describes the natural products of the country, and especially it brings before us the different kind of wild animals which there abounded. We quote various sentences which touch upon these points. The first nation he came to was called the Folles—Avoines (Menominees), or *the nation of wild oats.* "We left this bay (Green Bay) to go into a river (Fox River) that discharges itself therein. It abounds in bustards, duck and other birds, which are attracted there by the wild oats, of which they are very fond. We next came to a village of the Maskoutens, or "*nation of fire.*"[1] "The French have never before passed beyond the Bay of Puans. This Bourg consists of three several nations, viz.: Miamies, Maskoutens and Kickapoos. * * * I took pleasure in looking at this Bourg. It is beautifully situated on an eminence, from whence we look over an extensive prairie, interspersed with groves and trees. The soil is very fertile, and produces large crops of corn.[2] The river upon which we rowed, and had to carry our canoes, looks more like a cornfield than a river, inasmuch that we can hardly find its channel. As our guides had frequently been at this portage, they knew the way, and helped us to carry our canoes, over land, to the other river, a distance of about two and one-half miles, from which they returned home, leaving us in an unknown country. * * *

"The river upon which we embarked is called Mesconsin. The country through which it flows is beautiful. The groves are so dispersed in the prairies that it makes a noble prospect. We saw neither game nor fish, but roebuck and buffaloes in great numbers. We came into the Mississippi on the 17th of June, 1673. We slowly followed its course to the south and southeast to the 42° N. latitude. Here we perceived the country change its appearance, the islands are covered with fine trees, but we could not see any more roebucks, buffaloes, bustards and swans. There were scarcely any more woods or mountains. We met, from time to time, monstrous fish, which struck so violently against our canoes that, at first, we took them to be large trees which threatened to upset us. We saw, also, a

[1] The word Maskoutens means prairie, but the nation of fire, called fire nation, is by some supposed to have been derived from the prairie fires.

This village of the Maskoutens is supposed to have been situated near Portage City. There are many emblematic mounds in this vicinity. "We were informed that three leagues from the Maskoutens we should find a river which runs into the Mississippi."

The location of this portage and the marshes described, has been identified by the author, and the description here been found to be accurate and graphic.

[2] This statement necessitates us to modify the assertion made in our last article, that Marquette did not see cornfields. Marquette evidently did see cornfields, but we do not know as he witnessed the garden beds which we were then describing, or that he saw or at least recognized the mounds which interest us so much.

hideous monster (a wolf). His head was like that of a tiger, his nose was sharp, and somewhat resembled a wild cat; his beard was long, his ears stood upright, the color of his head was gray and his neck black. He looked upon us for some time, but as we came near him our oars frightened him away. * * * *

"Having descended the river as far as 41° 28′ we found that turkeys took the place of game, and the *Pisikious* that of other animals. We called the pisikious the wild buffaloes because they very much resemble our domestic oxen. They are not so long, but twice as large. * * * The Indians hide themselves when they shoot at them, otherwise they would be in great danger of losing their lives. They follow them at great distance, but for loss of blood they are unable to follow them. They graze upon the banks of rivers, and I have seen 400 in a herd together." * * * "The Illinois are well formed and very nimble. They are skilled with their bows and rifles. They make excursions to the west, to capture slaves. Those nations are entirely ignorant of iron tools. Their knives, axes and other implements are made of flint and sharp stones. They live by hunting and on Indian corn, of which they always have a plenty. They sow beans and melons, which are excellent, especially those whose seed is red. Every one has his peculiar god, whom they call Manitou. It is sometimes a stone, a bird, a serpent, or anything else that they dream of in their sleep. They believe that this Manitou will prosper their sports of fishing, hunting and other enterprises. * * * *

"As we were descending the river, we saw high rocks with hideous monsters painted on them, and upon which the bravest Indians dare not look. They are as large as a calf, with head and horns like a goat; their eyes red, beard like a tiger's and a face like a man's. Their tails are so long that they pass over their heads and between their fore legs, under their belly and ending like a fish's tail. They are painted red, green and black. They are so well drawn that I can not believe they were drawn by the Indians; and for what purpose they were made, seems to me a great mystery. As we fell down the river, and as we were discoursing upon these monsters, we heard a great rushing and bubbling of water, and small islands of floating trees coming from the mouth of the Pekitanoni (the Missouri) with such rapidity that we could not trust ourselves to go near."

These extracts from Marquette's journal show what animals abounded in the region. They also make known the superstitious feeling which the Indians had toward animal figures. It is not known whether these inscriptions or pictures were placed upon the rocks by the Indians, but they correspond to the Manitous, which were common among the Algonquins.

Another extract will show the superstition which prevailed:

"After having gone about twenty leagues to the south, we met another river called Ouabouskigou (the Ohio), which runs into the Mississippi 36° N. Before we arrived there, we passed through a most formidable passage, to the Indians, who believe that a Manitou or demon resides there, to devour travelers. This demon is only a bluff of rocks, against which the river runs with great violence, and being thrown back by the rocks, an idol near it, the water makes a great noise, and flows with great rapidity through a narrow channel, which is certainly dangerous to canoes."

Marquette descended the latitude to 33° N.. and reached a village on the riverside called Mitchigamea, supposed to be the site of the present town of Helena. "Here," he says, "we judged from the bellowing of the buffaloes that some prairies were near. We saw quails, and shot a parrot which had half of its head red, the neck yellow, and the rest of the body green. The Indians made a great noise, and appeared in armies. They were armed with bows and arrows, clubs, axes and bucklers, and commenced attacking us. These Indians are very courteous. We then ascended the Mississippi, with great difficulty, against the current, and left it in the latitude of 38° N., to enter another river (Illinois), which took us to the lake of Illinois (Michigan), which is a much shorter way than through the river Mesconsin (Wisconsin), by which we entered the Mississippi. I never saw a more beautiful country than we found on this river. The prairies are covered with buffaloes, stags, goats, and the rivers and lakes with swans, ducks, geese, parrots and beavers. The river upon which we sailed was wide, deep and placid for sixty-five leagues, and navigable most all the year round. There is a portage of only half a league into the lake of the Illinois (Michigan). We found on the banks of this river, a village called Kuilka, consisting of seventy-four cabins. They received us very kindly, and we promised to return to instruct them. The chief and most of the youth of this village accompanied us to the lake, from whence we returned to the Bay of Puans (Green Bay) about the end of September."

Another description of this same region is given by Daniel Cox, who wrote in 1789, about one hundred years after the time of Marquette. He first describes the country to the west of Lake Michigan, called then the Illinouecks: "The country surrounding this lake, especially toward the south, is very charming to the eye. The meadows, fruit trees and forests, together with the fowls, wild geese, etc., affording most things for the support and comfort of life, beside the Indian corn with which the natives abound. There ramble about in great herds, especially about the bottom of this lake, infinite quantities of wild kine, some hundreds usually together, which is a great

part of the subsistance of the savages, who live upon them while the season lasts, for at those times they leave the town quite empty." He next describes the Bay of the Poutouatamies, or Green Bay, and says: "Into the bottom comes the fair river Miscouaqui (Fox), after a course of two hundred miles. This river is remarkable upon divers accounts; first, when you ascend it fifty leagues, there is a carriage a little above a league and a half, afterward you meet with a lovely river, Mesconsin, which carries you down into Meschacebe; next upon this river, especially near the carriage, is a country famous for beaver hunting, like that of Bakinam; thirdly, this river and others emptying into it abound in that corn called Malonim (wild rice), which grows in the water and marshy, wet places, as in the Indies, Turkey, Carolina, etc., but much more like our oats, only longer, bigger and better than either that or Indian corn, and is the chief food of many nations hereabout and elsewhere. The nations who dwell on this river are Outugamis, Malominis, Nikic, Oualeanicou, Sacky and the Poutouatamis before mentioned."

Another author who has described the animals which were hunted by the Indians, is Charlevoix, who wrote letters descriptive of the Canadas about the year 1722.* He describes a number of animals, such as the elk, deer and cougar or panther, as found among the woods of Canada. These, we have reason to believe, also formerly abounded in Wisconsin, for hunters and early settlers frequently came in contact with them. It is stated, in a volume recently published, that the Caribou or American reindeer is also occasionally found in the northern part of the State. Charlevoix's descriptions are worthy of attention. He says: "The Indians look upon the elk as a good omen, and believe that those who dream of them often may expect a long life; it is quite the contrary with the bear, except on the approach of the season for hunting those creatures. There is also a very diverting tradition, among the Indians, of a great elk, of such a monstrous size, that the rest are like pissmires in comparison of him; his legs, say they, are so long that eight feet of snow are not the least incumbrance to him; his hide is proof against all manner of weapons, and he has a fort of arms proceeding from his shoulder, which he uses as we do ours. He is always attended by a vast number of elks, which form his court, and which render him all the services he requires. The elk has other enemies besides the Indians, and who carry on full as cruel a war against him. The most terrible of all these is the carcajou or Quincajou, a kind of cat with a tail so long that he twists it several times round his body, and with a skin of a brownish red. As soon

* See Charlevoix's Travels, Vol. I. See Sport of the Gun and Rod in American Woods and Waters—Article Caribou Hunting, by Charles C. Ward.

as this hunter comes up with the elk, he leaps upon him and fastens upon his neck, about which he twists his long tail, and then cuts his jugular. The elk has no means of shunning his disaster but by flying to the water the moment he is seized by his dangerous enemy. The carcajou, who cannot endure the water, quits his hold immediately; but if the water happens to be at too great distance, he will destroy the elk before he reaches it. This hunter, too, as he does not possess the faculty of smelling, with the greatest acuteness, carries three foxes a hunting with him, which he sends on the discoveries. The moment they have got scent of an elk, two of them place themselves by his side, and the bird takes post behind him; and all three manage matters so well, by harassing the prey, that they compel him to go to the place where they left the carcajou, with whom they afterwards settle about the dividing the prey. Another wile of the carcajou, in order to seize his prey, is to climb upon a tree, where, crouched along some projecting branch, he waits till an elk passes, and leaps upon him the moment he sees him within his reach."

Thus, we see from the narratives, that wild animals were numerous in the region, and that it was a favorable place for hunting. The character of the country would also favor this idea. There are in the State extensive forests, which, even at the present time, abound with wild deer, bear, wolves, foxes, and other wild animals. There are at present few elk or moose in these forests, and cougars or panthers are rarely seen; the probability is that these animals were once common here. The prairies, which are interspersed among the oak openings, furnish flocks of prairie chickens, pigeons, and quails, while the marshes and small ponds are frequented by the heron, blue and white crane, bitterns and loons. If the large game, such as we have mentioned, are not here yet, there is no doubt, then, that many animals which are now only found in distant territories, such as the moose, elk, buffalo, bear, wolf, panther, antelope and various kinds of deer were common here at the time of the Mound Builders, and were hunted by them. There are many wild animals still found in the State, such as foxes, prairie wolves, deer, and the various fur-bearing creatures. All of these were evidently the occupants of the marshes, lakes, prairies and forests, and frequent the very places which are now covered with the effigies, showing that there is a correspondence between the effigies and the native fauna. If some of the effigies are at present without their corresponding object, yet the fact that these very creatures formerly abounded here would prove that the Mound Builders had these before them as their model, and erected the mounds as images, which were true to life.

2. We shall take the effigies, then, as evidence that the Mounds were built by hunters. It is remarkable that the

effigies are now found by the side of the lakes and rivers and in the very places which the different animals frequented.

(1.) The location of these effigies convey the idea that the builders of them were familiar with the habits of the different animals, and that they knew the very places which they haunted. The effigies are not indiscriminately scattered over the country, as if they were arbitrary signs which would merely indicate the place where the builders had encamped, but they are studiously located, as if particular regard had been paid to the habits of the animals which they represent. This peculiarity of the effigies is worthy of notice. We have already suggested that the emblematic mounds may have been totems. If they were totems or tribal signs exclusively, we should expect they would be located near the camping places of the people, and that no regard would be paid to the animals which abounded in the region. The tribes, in that case, would introduce the effigies which would serve as tribal signs or totems, even if they were the effigies of animals which were not found here at all. There is, however, so close a correlation between the emblematic mounds and the native fauna of this region, as to give rise to the idea that the inhabitants took the animals which constituted the fauna as their models, and imitated them in their effigies, and that they paid more regard to the habits of the animals than they did to their own notions as to tribal signs or totems. The fact that the effigies are placed in the favorite haunts, feeding places and drive ways of the various animals, and that the effigies were imitative of the very animals which were known to have made their haunts in the particular locality, would indicate that the hunter idea was very powerful with the people who erected the effigies.

(2.) It would seem that nearly every creature which had existed on the soil had been imitated by these remarkable earth works. It has been supposed that the effigies were exclusively tribal signs, but the animals imitated are too many and too varied for this. Totems are generally confined to a certain fixed number, and are supposed to represent the names of the clan, and had no regard to the number or variety of animals which were known. These totems might be repeated as the clan or tribe wandered from place to place, but in that case the same animals would appear many times in the effigies, and there would be but little variety in them. Here, however, we have not a limited number of effigies, but an immense number, and so varied that we conclude, that the object was to represent the animals themselves, rather than the so-called animal tribes. The imitative character of the effigies is then forced upon us, even to the eclipse of their totemic character.

(3.) Another point is worthy of notice. There are very few foreign or exogenous creatures found among the effigies. The animals imitated are such as belong to the fauna of the region,

and, with one or two exceptions, do not embrace any other. The elephant mound has been referred to, and some would claim that this effigy proves familiarity with animals, which have long since become extinct, and they would, on this account, assign a very great age to the mounds. Others think they recognize dragons and crosses among the effigies, and they conclude, on this account, that the effigy builders were familiar with the historic emblems of foreign countries. They take these emblems as signs of the migratory character of the Mound Builders, and as evidence of the European or Asiatic origin, but the fact that there is such a correspondence between the effigies and native fauna of this region, as it has been made known by the description of early explorers and settlers, proves that the builders of them imitated the wild animals only, and it is doubtful if they had an acquaintance with these historic emblems, or with extinct animals.

(4.) We have, in our former paper, given the illustrations of the different kinds of animals which were represented by the effigies, and have referred to the remarkable classification of these animals. A few words may be added, however, in reference to this classification. We have learned from Maj. J. W. Powell and Dr. Washington Matthews, that the Indians of the West have a way of classifying the animals which is peculiar to themselves. They classify them, it appears, according to those habits which they, as hunters, have come to recognize in the different animals, as follows: 1. Rovers. 2. Prowlers. 3. Climbers. 4. Creepers. 5. Swimmers. 6. Flyers. This classification corresponds with the one which we have recognized already in the mounds.

The division which we have made of the effigies, judging from the different manner in which they were constructed, was as follows: 1. Those which represented the land animals. 2. The water animals. 3. The amphibious creatures. 4. Birds or creatures of the air. We, however, made sub-divisions of the land animals: (1). The grazing, represented as having horns. (2). Fur bearing, represented as having long tails. We stated that there was a class of tailless animals which we found difficult to put into any division or sub-division, and that here was a point which needed to be cleared up. The classification which has been derived from the Indians removes the difficulty. If we divide the land animals into three classes: (1.) Prowlers. (2.) Climbers. (3.) Rovers, and leave the amphibious creatures as identical with the (4) creepers, and the water animals as identical with (5) swimmers, and the birds as identical with (6) flyers, we shall have exactly the same classification in the mounds which is found to be prevalent among the Indians. We give a series of cuts here to illustrate the new classification, and to show that the effigy builders were as familiar with the habits of the animals as are the wild Indians

at the present day. The rovers are represented with horns; the prowlers are represented with long tails; the climbers, as a general division, may be said to be represented as without tails, and the creepers are represented with four legs, as if sprawling. The swimmers are without legs, and the flyers are recognized by their wings. The cuts which we use illustrate the point. See Figs. 104, 105, 106, 107, 108, 109, 110.

Fig. 104.

Fig. 105.

Fig. 106.

Fig. 107.

Fig. 109.

Fig. 108.

Fig. 110.

The elk and buffalo to represent rovers; the fox, wolf and mink to represent prowlers; the bear and wild cat to represent climbers; the turtle to represent the creepers; the swan and hawk to represent the flyers. These figures are all taken from existing effigies; the wolf, mink, and swan, and turtle from a survey which Dr. Lapham made late in life; the elk from a survey by H. M. Canfield. The former group has been visited by the author, and have been found to be situated on the banks of two of the small lakes which surround the high prairie at Summit, in Waukesha Co. The mink and wolf and turtle were near the borders of a pond, and may possibly have been designed as screens behind which hunters would hide, as they watched the game which resorted there. The swan was on the bank of a lake called Neosho, and may also have served as a screen. It is an interesting effigy, as it is the only one which imitates the swan which we have seen. About half a mile from the swan is the nondescript earthwork, which may be seen in the figure. It is situated on the prairie, remote from the lake, and is now covered by the cultivated field, and garden, or dooryard of Mr. Sawyer, a resident farmer. A house has been built upon one end, and the road crosses the middle part of the double walls, which cross one another in the shape of a pair of scissors, and are about 600 feet long. They are slightly raised above the surface of the ground, but are plainly discernible. The object of this effigy is unknown. As to the correspond-

ence between the method of representing the animals by the emblematic mound builders and the Indians, we have remarkable illustrations in the inscriptions found in the cave at West Salem. Here there are not only pictures of the animals, but the Indians shooting them with bow and arrow. The cut given herewith illustrates the point. See Figs. 111, 112, 113, 114.

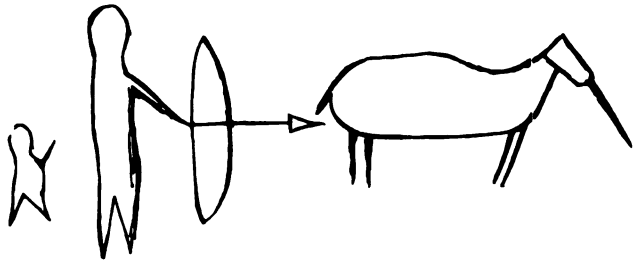


Fig. 111.

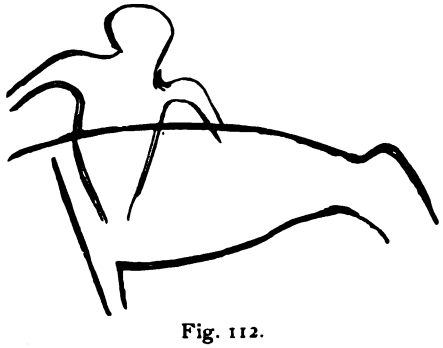


Fig. 112.

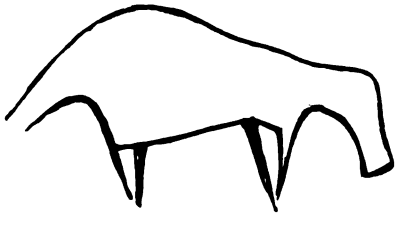


Fig. 113.

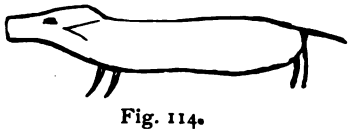


Fig. 114.

There are no representations of hunting in the emblematic mounds, yet it has been maintained that the bow and arrow are represented. See Fig. It is possible, also, that the man mounds were intended to represent hunters. A hunting scene has been found among the mounds. If we take the Davenport tablets as genuine, we may say that we have a picture which represents not only the animals pre-

valent, but the manner of hunting them. A comparison between the tablet and the inscribed rocks in the caves, brings out considerable resemblance, and aids us in understanding the emblematic mounds. The pictures of the animals in both the tablet and the cave, are really ruder than are the images contained in the mounds. It is a remarkable fact, however, that many of the man mounds are found near the game drives, and in the midst of the effigies of the wild animals, and it is possible that the intent was to represent the hunter as watching the game as it passed into the drive-ways. Occasionally a man mound is accompanied with a panther or some other beast or bird of prey, as if the hunter had associated himself with some animal, and both together were following after the game as it fled.

There is one point in connection with the pictured cave at West Salem. There are certain marks which have not been interpreted. Fig. 115. It is possible, however, that they were intended to represent arrows. Dr. D. G. Brinton has given an interpretation of the so-called turkey tracks found in the inscribed rocks at Barnesville, Ohio. He thinks they were intended to represent arrows.* If this is so, then we should conclude that the marks which so resemble rude pictures of chickens' legs and feet, were also designed to represent arrow heads.

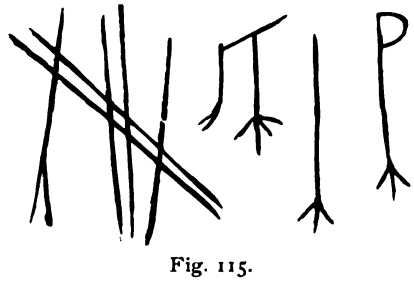


Fig. 115.

Fig. 116.

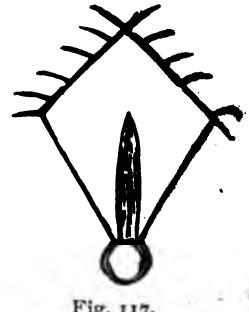


Fig. 117.

* See Report of the Academy of Science for Philadelphia, for Nov., 1884.

There is no doubt that these were intended to represent the sign language of Indians, for the figure of an Indian with head-dress is found among the inscribed figures. The symbol of the sun is also contained among the inscriptions. The meaning of the picture is unknown, yet it is possible that it is descriptive of a hunting scene, for there are wild animals and figures of men scattered indiscriminately, and the attitudes of the human figures indicate this intent.[1] The similarity between the animals in the inscriptions and those in the effigies is noticeable. They prove to be the same as those which have been described by explorers as once abounding in this region. The rude way of portraying the animals, and the imperfect method of making a picture of a hunting scene in the inscriptions, may explain how hunting symbols may be recognized among the emblematic mounds. There are those who maintain that they have identified the bow and arrow, and even the stone arrow head or spear head in the shape of the mounds.[2] On this point we express a doubt and yet there may have been many such symbols, though they have rarely been recognized among the mounds.

III. We turn, then, to the hunting habits of the later races for our illustration of the use of the emblematic mounds for hunting purposes. 1. There are many descriptions of the customs which were common among the hunters, and these descriptions may well be quoted here. We have descriptions furnished by the Jesuit Fathers, by Champlain, by Charlevoix, and many other travelers, which bring before us not only the kind of animals which abounded in this region, but the methods which the hunters used in entrapping them. The first point we shall make is, that the same game abounded here that was followed by the hunters elsewhere, and that the method of entrapping these animals, which have been described by the explorers of Canada and the region farther east, were probably the same as those used by the emblematic mound builders.

The Indian tribes were not accustomed to erect earthworks for hunting purposes, but they were in the habit of constructing wooden palisades or fences, and into these frequently drove wild animals in great numbers, and then inflicted upon them immense slaughter. These wooden contrivances resemble the various earthworks which are found among the emblematic mounds, and we believe that they furnish an explanation of the use of these earthworks. We would, therefore, call especial attention to the descriptions given. We quote from Charlevoix.[3] He says: "The most northern nations of Canada have a way

[1] See Fig. III, page 95, also Fig. 120, also Fig. 56.
[2] See Lapham's Antiquities page 68, also Pl. XLII. See the figure of Bow and Arrow so-called, in Am. Antiquarian, Vol. VI., No. 5.
[3] See Charlevoix Journal. Vol. I., p. 200.

of hunting the elk, very simple and free from danger. The hunters divide into two bands, one embarks on board canoes, which canoes keep at a small distance from each other, forming a pretty large semi-circle, the two ends of which reach the shore. The other body, which remains ashore, perform pretty much the same thing and at first surround a large tract of ground. Then the huntsmen let loose their dogs and raise all the elks within bounds of this semi-circle, and drive them into the river or lake, which they no sooner enter than they are fired upon from all the canoes, and not a shot misses, so that rarely any one escapes."

Champlain mentions another way of hunting, not only the elk, but also the deer and caribou, which has some resemblance to this. They surround a space of ground with posts, interwoven with branches of trees, leaving a pretty narrow opening, where they place nets made of thongs of raw hides. This space is-of a triangular form and from the angle in which the entry is, they form another but much larger triangle. Thus the two enclosures communicate with each other at the two angles. The two sides of the second triangle are also enclosed with posts interwoven in the same manner, and the hunters draw up in one line from the basis of it. Then they advance, keeping the line entire, raising prodigious cries, and striking against something which resounds greatly. The game thus roused and being able to escape by none of the sides, can only fly into the other enclosure, where several are taken at their first entering by the neck or horns. They make great efforts to disentangle themselves, and sometimes carry away or break the thongs. They also sometimes strangle themselves, or at least give the huntsmen time to dispatch them at leisure. Even those who escape are not a whit advanced, but find themselves enclosed in a space too narrow to be able to shun the arrows which are shot at them from all hands.

2. The superstitions of the Indians explain many things about the effigies. The dreams of the hunter are always significant. The hunting expeditions are scarcely ever undertaken unless the dreams are favorable. The image of the animal hunted for, must appear to the hunter in his dreams, or the expedition will prove a failure. This dependence upon dreams, differs from the totem system, and yet it is similar to it. It is well known that the animal which appeared in a dream to the young man at the time of his initiation, always served as a protector to him. The name of this animal was his private name. The image of the animal was carried with him as a private charm while he was living, and a picture of the animal was placed over his body at his death, so that he was known by the figure which was his dream totem. The hunter depended upon the dream in the same way, but it was for a shorter time. These superstitions illustrate the use

of the effigies in connection with the game drives. They show that the emblematic mound-builders depend npon the images of the animals for success in hunting. We do not know that the effigies represented their dreams, but we have seen so many evidences that the effigies were used as fetiches that we conclude that they did represent dream animals.

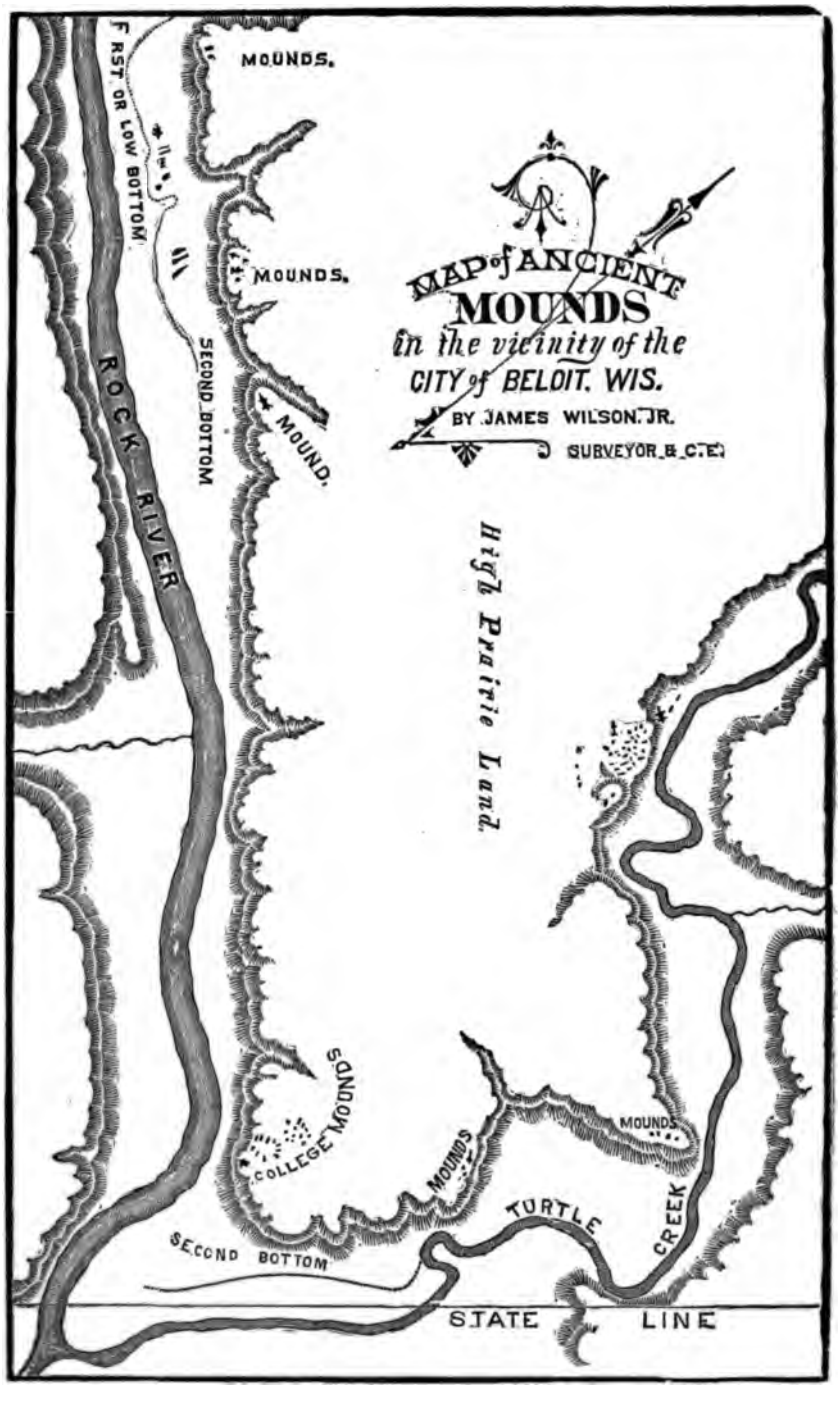
We imagine that the hunters embodied their dreams in the effigies, especially those which are found in connection with the game drives. The effigies then, which were erected near the game drives, we may suppose, were the animal Divinities under whose charge they continued their hunting expeditions. They may be regarded then as representatives of the animal which appeared in their dreams and assisted them in their hunting. They would be, at the same time, signs of success. The hunters having placed them near the feeding grounds or the drive-ways, would naturally go to the same places, every time that their dreams allowed them to follow the particular kind of game which they sought after. The signs of former success would be there, and so the effigies would be an encouragement to them. As mechanical contrivances, the game drives were useful, but they were especially useful, as giving encouragement to the hunter and making him bold in the chase.

IV. We shall next give the evidence that the emblematic mounds were used at times for hunting purposes. 1. We shall first give a description of certain game drives which have come under our own observation. In the vicinity of Beloit is a group of works which we believe to have been designed for this purpose. It is situated near the banks of Rock River, on the first terrace, just below the bluff, which forms the second terrace. The group is composed of two pair of parallel ridges, or long mounds. The ridges vary from 100 to 180 feet in length, and are about 90 feet apart. They run at right angles to the river, but are pointed toward the bluff and form a line with a break in the bluff. This break is between the two sets of parallel ridges, near a low swail or water-course, at the foot of which there was formerly a ford across the river. The situation of the group of long mounds, between the ford and the break in the bluff, would indicate that the intent of the builders was to place them in the line of a common runway, and that they were designed to be artificial structures between which the game would be induced to pass. Confirmatory of this idea is the fact that between the parallel drive-ways and either side of them are effigies. These are the effigies of buffaloes, giving the idea that here was the natural runway of buffalo herds. The effigies do not reach entirely across the space between the ridges, and yet they reach far enough to convey the idea that they may have been used as screens behind which the hunter hid. Possibly an artificial screen of wood extended across the open space, and other screens may have been

placed upon the summit of the ridges. The most remarkable feature of the locality is that on the summit of the bluffs, close by, there are two or three other groups or clusters of emblematic mounds, which are so situated as to give an extensive outlook over the surrounding region. The effigy most prominent in this group is that of the turtle, an animal which we have often noticed, to be commonly used as an outlook. The view from

Fig. 118.
Buffalo Drive at Beloit.

these so-called outlooks is very extensive. They at first, might be taken as signal stations, and the group below them might be considered as marking the site of a permanent village, but there are several objections to this. The situation of the group on the bottom-land is not favorable for a village site. The outlook from the summit of the mounds on the bluff is too extensive for them to be used as signal stations. The break in the bluff and the ford would serve well for a game drive, but would be


MAP of ANCIENT
MOUNDS
in the vicinity of the
CITY of BELOIT. WIS.
BY JAMES WILSON. JR.
SURVEYOR & C.E.
MOUNDS.
MOUNDS.
MOUND.
FIRST OR LOW BOTTOM
SECOND BOTTOM
ROCK RIVER
High Prairie Land.
COLLEGE MOUNDS
MOUNDS
MOUNDS
TURTLE CREEK
SECOND BOTTOM
STATE LINE

of no advantage to a village site. Half a mile below the game drive is a remarkable effigy of a lizard. This is situated on the spur of the bluff, and from the summit of it there is a mose extensive view of all the surrounding country. One standing upon this mound can look over the prairies to either side of the river, east and west, and get a view of the hills which bound the horizon so as to encompass nearly all the sides. These hills are so far away that no one could see an enemy if approaching at that distance. If, however, the object was to watch the approach of a herd of buffalo, the outlook would serve a very useful purpose. The black mass formed by a moving herd could be seen at this distance, while a whole army of hostile men could not be perceived. We conclude that this effigy was

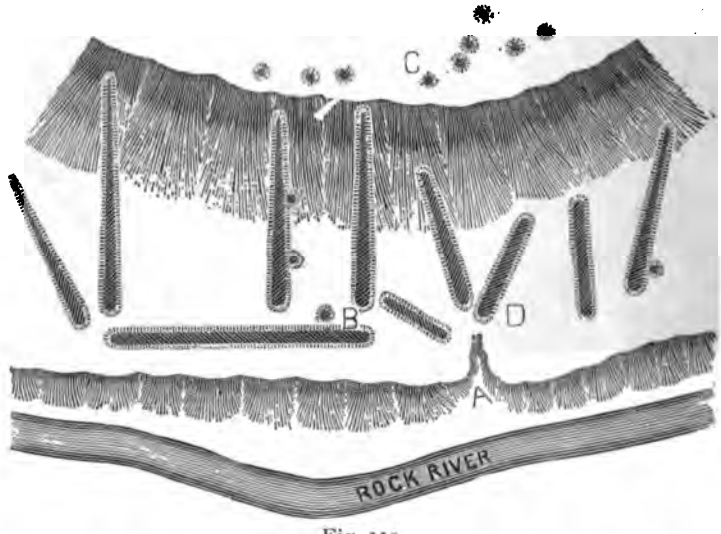


Fig. 119.

placed at this particular spot for the purpose of watching the herd of buffaloes as they came near the ford and runway, and that the three groups upon the bluff, and the two clusters of groups on the bottom-land were all to be connected together as marking the different parts of a buffalo game drive.*

A second group which we shall describe will confirm this supposition. It is a group situated at Indian Ford, some twenty miles north of Beloit. This group is also composed of a series of long mounds or ridges, which are placed parallel with one another, but also run at right angles to the river bank. The situation of the group is similar to that at Beloit. It is near a ford. It is between the extensive prairies east of the river and another series of prairies north and west. It is near

*See Fig. 118, also map of works at Beloit, also Fig. 86.

the mouth of the Catfish, and at the end of a tongue of land which is contained between the forks of the two rivers. It is in just such a place as would prove favorable for a game drive.

The character of the group differs somewhat from that at Beloit, yet resembles it in many particulars. The parallel ridges are of about the same length, 150 to 190 feet, and the same distance apart. They run toward the summit of the bluff, but taper to a point, so that they disappear near the hilltop, and become lost in the ground. See Fig. 119. At the lower end the ridges are higher and wider. We can imagine that the animals which were hastening toward the river, might easily be driven into these parallel passages, without noticing the mounds or even the screens which might be placed on them. At the lower end of the trap or drive there are certain long mounds or ridges, which connect the parallels and form a wide enclosure or trap. See B, in Fig. 119. There are passage-ways between these long mounds and the parallels, but they are so narrow as to give an outlet to only a few animals at a time. On either side of this enclosure are ridges D which run out diagonally, as if the purpose was to drive the herd into the wide opening at the upper end and crowd them into a narrow compass and then use the ridges as platforms and screens from which the hunters can shoot into the herd. What is most remarkable about the group is that there is a break A in the bank of the river which looks as if it had been used as a path, and had been worn down by the feet of the animals as they escaped from the Drive. Generally buffaloes pitch over the banks of rivers, and plunge into the water without stopping, but here the herd seem to have been impeded by the artificial structure, and only escaped individually and separately.

Another group similar to this has been surveyed by Dr. Lapham.[1] See Fig. 120. It is situated near the Wisconsin River, on S. 8, 7, 8, R. 4.

It consists of a series of oblong and conical tumuli and an effigy of a bird. They are composed of sand. "The bird is of the same material, and we found it very difficult to trace the exact original outline from this cause. It may be regarded as representing a barbed spear head or arrow point. Were we to confine our attention to one or two oblong mounds, on the edge of a bank, we might be led to regard them as breastworks, or parapets for defense, and perhaps to command the channel of the river; but an in-spection of the whole group shows clearly that no such purpose could have been intended."

This group of mounds is worthy of special notice, for it contains a series of long ridges near a bluff, and from the location of the ridges, we gather the idea that this also was a game drive. The break in the bluff is in the midst of the group,

[1] See Lapham, Antiquities, P. 68, Pl. XLII, No. 1.

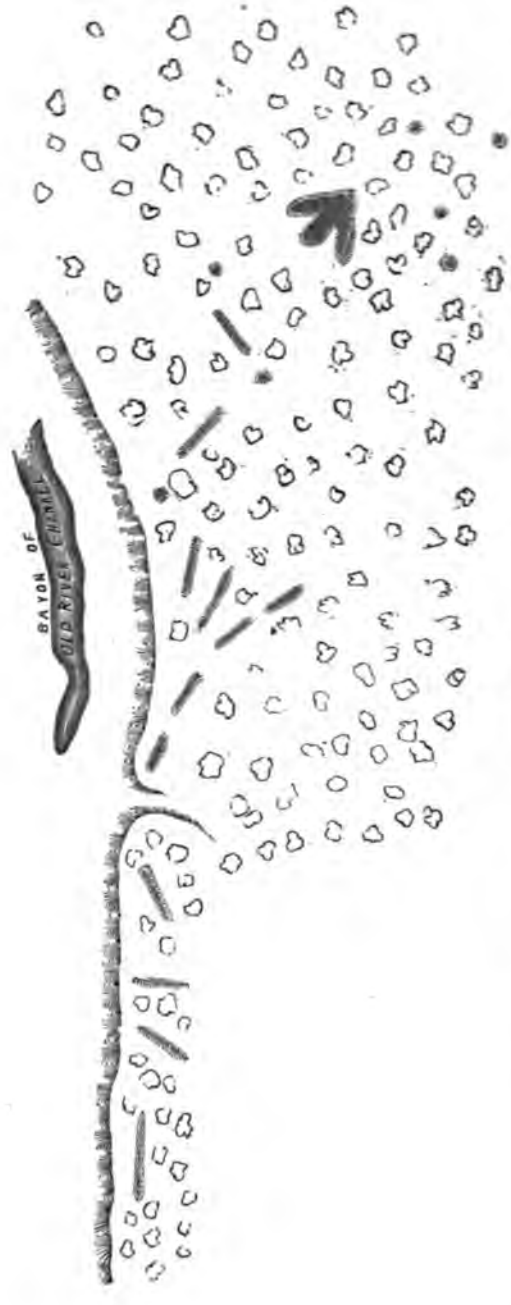


Fig. 120.
Buffalo Drive near the Wisconsin River. Sec. 8, 7, 8, Range 4, East.

and the ridges seem to point to this break, as if there was a path which was familiar to the wild buffalo. We can easily imagine the hunters as diding behind the ridges and making them screens from which they could shoot into a herd as it made its way along this pathway. Dr. Lapham says that the works were not intended for defense. We conclude from the inspection of the ground that they together formed a buffalo drive.

We leave the subject here for the present, but think that our readers will see from what has been said that this is one use to which the mounds were put. Long ridges and parallel mounds like these are very common, but wherever they have been seen they will bear this interpretation. We conclude that hunting was common among the Emblematic Mound Builders, and that this kind of earth work was generally employed for the purpose referred to, namely, as a game drive.

SIOUAN FOLK-LORE AND MYTHOLOGIC NOTES.

(Concluded).

Sheet lightning and forked lightning have distinct names, and were made by the aged thunder men. The thunders have wings, according to some, and when they wink their eyes, lightning follows. When they talk, it thunders. When one is struck by lightning, they say "He was killed by the In-gdhan, (the Thunder God)." When one has been thus killed, if in a house, the latter is generally abandoned by the occupants, as they fear to stay there, even after a lapse of time. Should it occur in a tent, the latter is torn to pieces and thrown away, as it smells bad.

They have no theories about the origin of earthquakes, rain, snow, or hail; but they attribute freshets to natural causes.

They think that the sun goes traveling; he comes into sight at sun rise; he goes sideling down hill in the afternoon, and he departs at sunset. When it is very cold, he is said to kindle a fire, referring to the parhelia or sun-dogs which are often seen in Dakota and Nebraska during the winter. When the sun is eclipsed, it is supposed to die or faint. The ground is thought to be motionless as the sun travels.

The person in the moon is the cause of some Indians' acting as women. It is told thus:—"when a young man fasts for the first time, his spirit goes to meet the moon-person, who holds a bow in his right hand, and a woman's pack strap in his left. The bow is held out towards the youth, who tries to grasp it, but if he be not very careful, the moon-person quickly brings forward the other hand, making him take the strap; and from that time he acts for a month or two as if he were a woman, dressing as one, talking like one, and imitating a wom-

an in every possible way, caring only for sewing, using the hoe,* etc. By and by the infatuation wears off, and the youth is in possession of his faculties for about a month, when the disease returns, and generally continues from that period. These men are called *Min-khu-ga*. They seem to have been confined to one sub-gens of the Omahas, the *Ke-in*, or *those carrying turtles on their backs*. *Ma-zhan-win* of this sub-gens was a *Minkhuga*, whose husbands have been Half-a-day, Standing Hawk, Zan-ziman-dje and Wa-ki-de. This person excelled all the women of the tribe in women's work, and judging from the name was really a female. *Wa-tan-naz-hin* of the the same gens, has a son, who his said to be a *min-khuga*. They exist among the Ponkas, who were the first to tell the writer about them, saying, "If boys play with girls, the former are reckoned as *min-khuga*." The Dakotas call them "*Winkte*." The Kansas say that it is not the moon-person, but another mythic being, the Mi-a-lu-shka who causes this change in young men. There is a race of beings, so-called, having large heads and long hair, dwelling in solitary places, to which they entice unwary Indians. Their victims become crazy, and live as *min-khu-ge*. (The Kansas name differs but slightly from that given by Omahas and Ponkas).

Stars.—Mr. Joseph La Flèche says that there are doubtless some myths about the origin of the stars, but he has never heard them. All stars walk around the Pole star, which is "the star that does not walk." The Mysterious Road or *Milky Way* is spoken of by some as the way traveled by ghosts the fifth night after burial. The *Aurora Borealis* occurs in the opinion of some, whenever many persons have died in some land. *Venus* is called "the star that moves toward daylight," or "the large star." The Bier is the name for the bowl of the *Great Dipper*. It is borne by four men, behind whom come the mourners. The second star in the handle has a very small one near it, and the two are called, "she who goes with her young one weeping." "The small feet of a goose," is the name of five small stars south of the Great Dipper, as seen in northeastern Nebraska. "The large feet of a goose," is a constellation in which are five or six very large stars, seen at the Omaha Agency, Neb., about the middle of January. They appear in the southeast, very near the horizon, and soon pass out of sight. The relative positions of the two groups are now given. The former is denoted by (A) and the latter by (B).

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(B) *                    (A) *
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*May not this be a difficulty in the way of Indian men who try to cultivate the ground, cut wood, and imitate civilized men in other ways?

A comet is "a blazing star," and a meteor "a falling star." The proper season to tell myths was in the winter, and even then, they should be related at night. If any one told them in the summer it was said that snakes would be very apt to bite the offender.

He who touched a snake, or smelt the odor of one, especially if he were a member of the Ponka Wa-zha-zhe gens, would surely have gray hairs. If one killed a rattlesnake, the same result followed, and this was thought to apply to white people, as two of the latter have had gray hair after killing rattlesnakes. The Omaha I-shta-san-da people have a similar belief.

The taboo of a clan or gens could not be violated with impunity. Thus, if an Omaha Elk man ate venison or the meat of a male elk, sores always broke out on him.

All Omahas are frightened when they dream of dead foes who have been mutilated, and on such occasions they weep. A certain Omaha enlisted in the U. S. army. He saw two Dakotas hanging, they having been executed by white soldiers. At first he refused to go near the bodies; but subsequently he went and looked at them. That night he slept with his hands over his face, as he feared that he might see the eyes of the dead men glaring at him.

In-da-dhin-ga. This is a monster in human shape according to the Omahas; but the Ponkas compare it to the great owl, saying that it is of huge size, and dwells in the forest, being able to pull up large trees by the roots. Mothers scare their children by saying, "Take care, the Indadhinga will catch you!"

Wa-kan-da-gi. These were monsters that are supposed to dwell in the rivers, and also in subterranean streams, which the Indians think exist under the bluffs along the Missouri river. But now no Omahas believe that there are such monsters.

The Wild People or Ga-da-zhe, were dwarfs who made their abode in caverns. They had tiny arrows which they shot at such human being as had offended them; their arrows penetrated the flesh without breaking the skin, but showed beneath the surface; and, by and by, serious results might be feared. These dwarfs carried rattles of deers' claws on their arms; they used to dispute with the hunters after they had killed deer, etc., claiming the game for themselves; but they always vanished as soon as the hunter thrust his spear or ramrod into the wound. These dwarfs abducted people, or, rather, caused them to wander from home and become crazy; sometimes such people never returned home.

A giant race, the Pa-snu-ta, once inhabited the country where the Omahas dwell. They too used to abduct people; they are called Mi-a-lu-shka by the Kansas, and the Osages have an account of them; they had remarkable skulls, whose vertical diameter was upward of two feet. "A few years ago,

when some of the Omahas were digging a grave near the house of the ex-chief Two Grizzly Bears, they unearthed the remains of about eight large people lying in a row; the skulls were about two feet long."—Frank La Flèche (of the Indian Bureau, Washington, D. C).

Deer-women abounded formerly; they used to lie in wait for solitary hunters; when a man saw one of these women, she made him fall in love with her; the invariable result was that he had intercourse with her; when she left him, she leaped away as a deer and the man soon died.

The Omaha and Ponka boys catch an insect called the *te-a-ta-ta*, which resembles the "hobby horse," or praying insect. After saying certain words over it, they think that it turns its head in the directions of the buffaloes, or else in that of the Dakotas. The words used are as follows:—

Te-a-ta-ta! Te-a-ta-ta! *Te-a-ta-ta! Te-a-ta-ta!*
Ta-a-wa-me? Where are the buffaloes?

The whippoorwill (ha-ku-ghdi) was often addressed by the children, who thought that it repeated their words. A Ponka child said that it sang thus: "*Ha-ku-gdhi! Ha-ku-gdhi! A-zhan!*"

A butterfly was thus addressed one day by the same little girl:

Wa-chi-ni-ni-ka! Wa-chi-ni-ni-ka! Butterfly! Butterfly!
Dhi-kan a-ka dhi-ban-i! Your grandmother calls you!
Gi-a, e-he! Come, I say!

When one has eaten a hearty meal, and eructation of hiccoughing ensues, the person says, "Ho, O animal!" addressing the animal, part of which he has eaten.

Though the myths are wonderful stories, no one believes them. Mr. J. La Flèche never met a Omaha who thought them true. That they have been greatly changed since they were first told is also the belief of a full-blood Winnebago, James Alexander.

Bureau of Ethnology, Washington, D. C., Feb. 12, 1885.

J. OWEN DORSEY.

THE TAENSA GRAMMAR AND DICTIONARY.

A DECEPTION EXPOSED.

The student of American languages is under many obligations to the editors and publishers of the *Bibliotheque Linguistique Américaine*, nine volumes of which have been issued by the firm of Maisonneuve et Cie., Paris. Most of these contain valuable authentic original material, from approved sources, and edited with judgment. The exception to this

rule is the volume last issued, which from its character deserves more than a passing criticism.

This volume bears the following title: *Grammaire et Vocabulaire de la Langue Taensa, avec Textes Traduits et Commentés par J. D. Haumonté, Parisot, L. Adam.* Pp. 19, 111. It contains what professes to be a grammar of the Taensas Indians, who lived near the banks of the lower Mississippi, in the parish of that name in Louisiana, when it was first discovered, but who have long since become extinct. Following the grammar are the "Texts," a remarkable series of native songs in the alleged Taensa tongue, with a French translation, accompanied by a commentary and a vocabulary.

All this array has been received by scholars without question. It looks so extremely scientific and satisfactory that no one has dared assail its authenticity. Moreover, the book appears with an historical introduction by Mr. Albert S. Gatschet, of our Bureau of Ethnology, and one of the editors is M. Lucien Adam, a gentleman who stands at the top of European Americanists. Mr. Gatschet, moreover, fully recognizes the authenticity of the whole in his latest work, and up to the present I know of no one who has doubted it, either in this country or in Europe.

It is, therefore, only after a great deal of consideration and hesitation that I now give publicity to the opinion, I have long entertained, that a gross deception has been somewhere practiced in the preparation of this book, and that it is not at all what it purports to be. Let it be understood that I distinctly exculpate the gentlemen I have named from any share in this; they can only be charged with the venial error of allowing their enthusiasm for knowledge to get the better of their critical acumen.

I shall proceed to give with as much brevity as possible the reasons which have led me to reject the pretended character of this work.

And first I may note that both the history of the alleged original manuscript and the method in which it has been presented are to the last degree unsatisfactory. About the former, M. Haumonté tells us that among the papers of his grandfather, who died as mayor of Plombières in 1872, he found a manuscript in Spanish, without date or name of author, and that it is this manuscript "translated and arranged," which is the work before us. M. Adam adds that for his part he had revised this translation and advised the omission of certain passages not "profitable to science." I have been informed by a private source that M. Adam was not shown the original Spanish manuscript, although he asked to see it. We are deprived therefore of any expert opinion as to the age of the manuscript, or of its authorship.

We naturally ask, how did this manuscript come to be in

Spanish? No one has been able to point out in the voluminous histories of the Spanish Missions a single reference to any among the Taensas. Moreover, this tribe was constantly under French observation from its first discovery by La Salle in 1682, until its entire destruction and disappearance about 1730-40, as is minutely recorded by Charlevoix, who even adds the name of the planter who obtained the concession of their lands. With the knowledge we have of the early Louisiana colony, it would have been next to impossible for a Spanish monk to have lived with them long enough to have acquired their language, and no mention to have been made of him in the French accounts. That a Spaniard, not a monk, should have attempted it, would have excited still more attention from national distrust.

This preliminary ground of scepticism is not removed by turning to the grammar itself. As M. Adam remarks, the language is one "of extreme simplicity," such simplicity that it excites more than the feeling of astonishment. How much liberty M. Haumonté allowed himself in his translation he unfortunately does not inform us; but I suppose that he scarcely went so far as to offer original opinions on the pronunciation of a language which no man has heard spoken for more than a century. If he did not, then the writer of the original manuscript must have been a pretty good linguist for his day, since he explains the pronunciation of the Taensa by the French, the English, the German, and the Spanish!! (p. 4). I suppose the references on p. 11, to the Nahuatl, Kechua and Algonkin tongues are by the translator, though we are not so told; at any rate, they are by some one who has given a certain amount of study to American languages, and could get up one not wholly unlike them. There is, however, just enough unlikeness to all others in the so-called Taensa to make us accept it "with all reserves," as our French friends say. That an American language should have a distinctively grammatical gender, that it should have a true relative pronoun, that its numeral system should be based on the nine units in the extraordinarily simple manner here proposed, that it should have three forms of the plural, that its verbs should present the singular simplicity of these, — these traits are indeed not impossible, but they are too unusual not to demand the best of evidence.

But the evidence which leaves no doubt as to the humbuggery in this whole business is found in the so-called "Cancionero Taensa," or Taensa Poems. There are eleven of these, and according to M. Adam, "they give us unexpected information about the manners, customs and social condition of the Taensas." If he had also added, still more unexpected information about the physical geography of Louisiana, he would have spoken yet more to the point. For instance, our botan-

ists will be charmed to learn that the sugar maple flourishes in the Louisiana swamps, and that it was a favorite food of the natives. It is repeatedly referred to (pp. 31, 34, 45, 67). They will also learn that the sugar cane was raised by the Taensas, although the books say it was introduced into Louisiana by the Jesuits in 1761, (p. 45). The potato and rice, apples and bananas, were also familiar to them, and the white birch and wild rice are described as flourishing around the bayous of the lower Mississippi. It may be replied that these are all mistranslations of misunderstood native words. To this I reply, what sort of editing is that which not only could commit such unpardonable blunders, but send them forth to the scientific world without a hint that they do not pretend to be anything more than guesses?

But no such apology can be made. The author of this fabrication had not taken the simplest precaution to make his statements coincide with facts. How dense was his ignorance of the climate of Louisiana is manifested in the pretended "Calendar of the Taensas," which is printed on p. 41 of his book. He tells us that their year began at the vernal equinox and consisted of twelve or thirteen months named as follows:

1. Moon of the sugar maples, (April).
2. Moon of flowers, (May).
3. Moon of strawberries, (June).
4. Moon of heat, (July).
5. Moon of fruits, (August).
6. Moon of the summer hunts, (September).
7. Moon of leaves, (falling leaves), (October).
8. Moon of cold, (November).
9. Moon of whiteness, (i. e. of snow), (December).
10. Moon of fogs, (January).
11. Moon of winter hunts, (February).
12. Moon of birds (returning), } (March).
13. Moon of green, (returning green). }

How absurd on the face of it, such a calendar would be for the climate of Taensas Parish, La., need not be urged. The wonder is that any intelligent editor would pass it over without hesitation. The not infrequent references to snow and ice might and ought to have put him on his guard.

The text and vocabulary teem with such impossibilities; while the style of the alleged original songs is utterly unlike that reported from any other native tribe. It much more closely resembles the stilted and tumid imitations of supposed savage simplicity, common enough among French writers of the eighteenth century.

As a fair example of the nonsense of the whole I will translate the last song given in the book, that called

THE MARRIAGE SONG.

1. The chief of the Chactas has come to the land of the warriors; 'I come.' 'Thou comest.'

2. Around his body is a beautiful garment, he wears large leggings, sandals,

tablets of white wood, feathers behind his head and behind his shoulders, on his head the antlers of a deer, a heavy war club in his right hand.

3. What is the wish of the great warrior who has come?

4. He wishes to speak to the chief of the numerous aud powerful Taensas.

5. Let the warrior enter the house of the old men. The chief is seated in the midst of the old men. He will certainly hear thee. Enter the house of the old men.

6. Great chief, old man, I enter. Thou comest. Enter; bring him in. What wishes the foreign warrior ? Speak, thou who hast come.

7. Old men, ancient men, I am the chief of many men ; at ten days journey up the river there lies the land of poplars, the land of the wild rice, which belongs to the brave warriors, the brothers of the Taensas.

8. They said to me—since thou hast not chosen a bride, go to the Taensas our brothers, ask of them a bride ; for the Chactas are strong ; we will ask a bride of the Taensas.

9. That is well ; but speak, warrior, are the Chactas numerous ?

10. Count ; they are six hundred, and I am stronger than ten.

11. That is well ; but speak, do they know how to hunt the buffalo and the deer ? does the squirrel run in your great forests ?

12. The land of the wild rice has no great forests, but cows, stags and elks dwell in our land in great numbers.

13. What plants grow in your country ?

14. Poplars, the slupe tree, the myrtle grow there, we have the sugar maple, ebony to make collars, the oak from which to make war clubs ; our hills have magnolias whose shining leaves cover our houses.

15. That is well, the Taensas have neither the slupe tree nor the ebony, but they have the wax tree and the vine, has the land of the wild rice these also ?

16. The Taensas are strong and rich, the Chactas are strong also, they are the brothers of the Taensas.

17. The Taensas love the brave Chactas, they will give you a bride; but say, dost thou come alone? dost thou bring bridal presents?

18. Twenty warriors are with me, and *bulls drag a wain.*

19. Let six, seven, twenty Taensa warriors go forth to meet those who come. For thee, we will let thee see the bride, she is my daughter, of me, the great chief ; she is young ; she is beautiful as the lily of the waters ; she is straight as the white birch ; her eyes are like unto the tears of gum that distil from the trees ; she knows how to prepare the meats for the warriors and the sap of the sugar maple ; she knows how to knit the fishing nets and keep in order the weapons of war—we will show thee the bride.

20. The strangers have arrived, the bulls have dragged up the wain. The warrior offers his presents to the bride, paint for her eyes, fine woven stuff, scalps of enemies, collars, beautiful bracelets, rings for her feet, and swathing-bands for her first born.

21. The father of the bride and the old men receive skins, horns of deer, solid bows and sharpened arrows.

22. Now let the people repose during the night; at sunrise there shall be a feast ; then you shall take the bride in marriage.

And this is the song of the marriage.

The assurance which has offered this as a genuine composition of a Louisiana Indian is only equalled by the docility with which it has been accepted by Americanists. The marks of fraud upon it are like Falstaff's lies—"gross as a mountain, open, palpable." The Choctaws are located ten days journey up the Mississippi in the wild rice region about the headwaters of the stream, whereas they were the immediate neighbors of the real Taensas, and dwelt when first discovered in the middle and southern parts of the present state of Mississippi. The sugar maple is made to grow in the Louisiana swamps, the broad leaved magnolia and the ebony in Minnesota. The latter is described as the land of the myrtle,

and the former of the vine. The northern warrior brings feet-rings and infant clothing as presents, while the southern bride knows all about boiling maple sap, and is like a white birch. But the author's knowledge of aboriginal customs stands out most prominently when he has the up-river chief come with an ox-cart, and boast of his cows! After that passage I need say nothing more. He is indeed ignorant who does not know that not a single draft animal, and not one kept for its milk, was ever found among the natives of the Mississippi valley.

I have made other notes tending in the same direction, but it is scarcely necessary for me to proceed further. If the whole of this pretended Taensa language has been fabricated, it would not be the first time in literary history that such a fraud had been perpetrated. In the last century, George Psalmanazar framed a grammar of a fictitious language in Formosa, which had no existence whatever. So it seems to be with the Taensa; not a scrap of it can be found elsewhere, not a trace of any such tongue remains in Louisiana. What is more, all the old writers distinctly deny that this tribe had any independent language. M. De Montigny, who was among them in 1699, father Gravier who was also at their towns, and Du Pratz the historian, all say positively that the Taensas spoke the Natchez language and were part of the same people. We have ample specimens of the Natchez, and it is nothing like this alleged Taensa. Moreover, we have in old writers the names of the Taensa villages furnished by the Taensas themselves, and they also are nowise akin to the matter of this grammar, but are of Chahta-Muskoki derivation.

What I have now said is I think sufficient to brand this grammar and its associated texts as deceptions practiced on the scientific world. If it concerns the editors and introducers of that work to discover who practiced and is responsible for that deception, let the original manuscript be produced and submitted to experts; if this is not done, let the book be hereafter pilloried as an imposture.

D. G. BRINTON.

Media, Pa.

EDITORIAL.

THE AMERICAN ANTIQUARIAN AND ITS STAFF OF ASSOCIATE EDITORS.

We take this occasion to speak about the American Antiquarian and its associate editors. We have been gradually drawing together a class of gentlemen who are acknowledged to be the best scholars in their departments found on the continent of America.

We have recently secured two or three new associates, and yet retain those who have heretofore co-operated with us in conducting the journal, and therefore speak of the work which all are likely to accomplish.

We call attention first to the Notes which Dr. Henry Phillips is furnishing. There is probably no better scholar in America. As a linguist, Dr. Phillips is certainly "*facile princeps*." His acquaintance extends to nearly all modern European languages, as well as to the ancient classics, leaving out only the Hebrew and Semitic tongues. We are happy to have secured his co-operation, and hope to make our exchanges very useful, as we shall place in his hands the reports of European societies and all the material which comes to us so freely. As the secretary of the Numismatic and Antiquarian Society, and as custodian of the American Philosphical Society. Dr. Phillips also has access to many books and periodicals. His department in the American Antiquarian will be European Archæology, and we think that our readers will find his notes very valuable.

Dr. D. G. Brinton has also kindly consented to act as associate in the department of "Aboriginal Literature." His scholarship is well known, and what is more, his style is always interesting. A keen mind which takes in a broad range and at the same time critically discerns an error, is the gift which has distinguished Dr. Brinton. We can congratulate ourselves on having his assistance, and we are sure that our readers will welcome him to the position of associate editor.

Prof. A. C. Merriam, very generously, has concluded to remain in charge of the department of Classic Archæology, notwithstanding solicitations to assume the same position in other journals. There is no contributor whose articles have been quoted so extensively during the past year, and therefore we feel grateful to him for remaining at his post and upholding this department by his thorough scholarship.

Prof. Avery is also increasing his exchanges, and will furnish material concerning the Far East. No man in America is so well acquainted with the literature of that part of the world, and we are happy to know that his articles are being appreciated by scholars everywhere.

We call attention to Mr. Dorsey's articles and notes on Folk Lore, and Mythology. This is a department which is proving very sug-

gestive. We hope to publish more material on this subject in the future.

Prof. Thomas has begun a series of articles which promise to be very interesting. The first installment will be found in this number. These articles are the result of personal investigation, and will prove exceedingly valuable. We are happy to announce also that Mr. Horatio Hale, Dr. Washington Matthews and Hon. Wm. Gordon Lillie and many other gentlemen who have been engaged in studying the native languages and myths of America, will also continue to favor us with their contributions—thus making the magazine the chief medium of information on these subjects.

We would say that all the gentlemen who are connected with us in conducting this magazine are specialists of world-wide reputation, and their co-operation must secure a standing to this journal which no other can boast.

Six years of experience and growth, at a time when archæology was in its incipiency, entitles THE AMERICAN ANTIQUARIAN to confidence. We are happy to know that the journal is read extensively in Europe, and that it has come to be recognized as authority in all parts of the world. We think that it will take a long time for any other journal to get so near to the workers and, at the same time so near the scholars.

We place these facts before our readers because they understand how difficult it is to make a specialty what it ought to be, and because we are sure of their full appreciation of our success in this direction. All that we ask is that they co-operate with as much earnestness as our associates do, and that they continue the efforts which they have heretofore so generously given to secure to the journal a wide circulation and a more extensive patronage and support.

MEMORIAL NOTICE.

The last report of the American Antiquarian Society contains obituary notices of Dr. R. J. Farquharson and Mr. Stephen Salisbury. Dr. Faquharson was a careful and conscientious investigator and one of the best archæologists. His death will prove a great loss to the Davenport Academy of Science, of which he was a prominent member and formerly president. Mr. Salisbury was well known as the president of the American Antiquarian Society. His benefactions were numerous, and his scholarship was only excelled by his generosity. The Society have properly made this report a memorial of their deceased president.

NOTES ON CLASSICAL ARCHÆOLOGY.

By Prof. A. C. Merriam.

The Athenæum for December 27th, has a long and interesting letter from Mr. W. S. Ramsay, giving some details respecting his recent tour in Asia Minor, and the general conclusions which he has drawn from his explorations, in relation to Phrygian art and civilization. They are, in the main, such as were published in the Antiquarian last year, but as he has found reason to alter them somewhat, it may be well to give his summary:

"The race called Phrygian formerly inhabited perhaps almost the whole western part of Asia Minor, certainly those parts of the country that are adjacent to the Northern Aegean and Propontis. In this period must be placed their direct connection with the Peloponnesus, and the historical circumstances that underlie the myths of the Atridæ, of Priam, and of the Iliou-Persis. Various causes—last and decisive among which was the irruption of barbarous European tribes, Bithynians, Maryandini, etc., which Abel places about 900 B. C.—obliged the Phrygians to concentrate in the highlands of the Sangarius. There the Phrygian kings reigned till about 670 B. C., when their kingdom was destroyed by the Cimmerians. During this period there was a considerable amount of intercourse maintained between Phrygia and the Greeks of Cyme, Phocæa and Smyrna. The fact that the daughter of the king of Cyme was married to a king of Phrygia, some time about 700 B. C., proves that I formerly erred in attributing little importance to this intercourse, and a more thorough study of the Phrygian alphabet has led me to change my former view, and to think that it came to the Phrygians, not *via* Sinope, but *via* Cyme. Friendly intercourse and occasional intermarriage are the rule between the great dynasty of the interior and the inhabitants of the coast. Such was the state of things amid which the Homeric poems grew, and such is the picture as reflected back on the mythic subjects of the poems. To this period belong the great Phrygian monuments. The art is essentially decorative, and the analogies to it are to be sought in the oldest Greek bronze work, especially in the deepest layer at Olympia. A very simple kind of engaged column or pilaster, with a resemblance to the Ionic column, is common in the monuments of this time, but it is used purely as a decoration and never in an architectural way. One tomb which is obviously an imitation of woodwork, has the appearance of a series of Ionic columns arranged in rows, tier over tier, but the appearance is produced merely by carving little discs at the corners of each pilaster, represented in relief on the rock wall."

The "Lion Tomb," which has been compared so frequently to the Lion Gate at Mycenæ, since his discovery of it, Mr. Ramsay now describes with greater detail, correcting some points of the previous account, and of the photographs. "The column between the two animals is not of the rough outline suggested in the draw-

ing, it is a simple column tapering towards the top (the Mycenæan tapers towards the bottom), with a species of capital like a Doric echinus. The relief is very much higher in the lower parts than above; whereas the hind leg of each animal is nearly detached from the ground, and the hindquarters are relieved nearly a foot; the heads are in very low relief." The sepulchral chamber is roughly cut, and absolutely unadorned. The grandest monument in Phrygia is described as the broken tomb from which the fine relief of a lion was derived, which was published in the Journal of Hellenic Studies, 1882. This figure is full of spirit and power, and is an unsurpassed representation of animal life in archaic art.

In a tumulus in the immediate neighborhood, Ramsay unearthed a stone containing Cappadocian hieroglyphics, which he regards as confirming his theory already stated in the ANTIQUARIAN, in relation to the origin of the royal road described by Herodotus, which he believes to be due to the Cappadocian power. These hieroglyphics have now been traced, in a reguler series, from the Niobe on the Aegean coast to the ancient Pteria which was destroyed 550 B. C. "We have now distinct proof that the Cappadocian civilization and language once reigned on the very spot where afterwards the Phrygian kings and art held sway."

And here recurs the question of the Hittites, to whom many are attributing all these evidences in Asia Minor, on the proof of the similarity of the hieroglyphic symbols. Ramsay argues that while the hieroglyphics are certainly similar, those of Asia Minor contain some divergent characters, and there is no proof that they are in the same language as those of Northern Syria. He still adheres to the belief promulgated before, that the road system of Asia Minor points to Pteria as its center, instead of any place in Northern Syria. "The Hittite theory is certainly a tempting one; it would enormously simplify the problems of ancient history; it embraces, in one view, facts and lands which are, on any other hypothesis, most diverse and incongruous; it opens up endless possibilities of finding new evidence. The student of ancient history may hope that it may admit of being so modified as to include the evidence accessible in Asia Minor. But I think that in its present form the theory is inconsistent with the facts, and that, at least, it will need considerable modification before it can be accepted."

In the corresponding number of the *Academy*, Mr. C. J. Ball gives a plain statement as to the actual advance now attained in the decipherment of the Hittite hieroglyphics: "I must affirm that all we know at present is the phonetic values of two characters, whose meaning remains undetermined, and the meaning of two other characters whose phonetic values have yet to be ascertained."

NOTES FROM ATHENS.—The Greek Government has granted to the British School of Archæology a site, situated half way between the palace gardens and the so-called gardens of Socrates, on the road to Pentelicus. The school will be sheltered on the north by Mount Lycabettus, and will look out on the south upon the slopes of Hymettus. The American School hopes soon to obtain a plot of ground in the same place, so that, in all probability, the two schools will be divided only by a garden or an olive yard.

FROM CRETE.—It is reported that an inscription of the archaic boustrephedon character, containing no less than 17,000 words, has been found at Messara by an archæological traveler, F. Ernest. If this is true, it ought to prove of the greatest value from many points of view. The number of inscriptions from Crete of this kind, is only about half a dozen up to the present time.

The announcement is made that a grotto has been discovered high up, on Mount Ida, in Crete, which is supposed to be the one believed by the ancients to have been the cave where the Zeus-child was nursed by the goat Amalthea. Several small objects of various kinds have been found in the soil of the cave, but nothing of value.

M. Salomon Reinach has written a letter to the *Nation*, recounting the discoveries made by himself and Babelon on the site of Carthage, during their excavations last winter. Among the objects of importance brought to light were a terra cotta mask of an archaic female head, with a smiling but coarse expression, recalling the types engraved on ancient Carthaginian and Sicilian coins; a small bassorelievo, representing a female figure, draped in a long robe, and holding in her hands a globe, thought to be the great goddess Tanit; a terra cotta tablet bearing a neo-Punic inscription, written in black ink, after the fashion of the Egyptian ostraka or shards; finally, more than five hundred slabs adorned with inscriptions or figures, and containing dedications to the goddess Tanit by nnmerous Hamilcars, Hannos, Hannibals and Bomilcars The language is the neo-Punic.

NOTES FROM THE FAR EAST.

BY PROF. JOHN AVERY.

COINCIDENCES BETWEEN AUSTRALIAN AND ATHENIAN SOCIETY.—The researches of Messrs. Fison and Howitt among the aboriginees of Australia have brought to light some interesting resemblances between the social and political organization of these savage tribes and that of the ancient Greeks in Attica. It is true, generally, of the hunting tribes of Australia, that each has a twofold division, the one being determined by relationship, the other by locality; the former is social, and the latter political. Socially the tribe is divided into two intermarrying sections, and these into subsections, each of which is distinguished by a totem or class sign. To select a wife from one's class, or sub-class, is to be guilty of incest; the theory being that such a group of persons has sprung from a common ancestor, and therefore its members are within proscribed degrees of relationship. Descent is, among nearly all the tribes, reckoned through the mother, and the children belong to her totem. Aliens who, as captives in war or for other reasons, are adopted by a tribe, are admitted to that section of the social organization to which they belonged in their own tribe. In case the same totems do not exist there, a male foreigner cannot acquire full social rights, but these are first enjoyed by his children through the mother, whom

he may have married from the tribe. An alien woman under such circumstances, being of greater consequence to the community, is brought before the elders, who feign to discover that she belongs to some totem with which the man who takes her to wife can marry.

The political organization divides the tribes into geographical groups or hordes, as our authors prefer to call them. Each horde roams over a particular section of the hunting grounds of the tribe, and includes among its members not representations of one totem only, but of several or all those known to the community. Children belong to the horde of their father, but to the totem of their mother. For various reasons the local organization is supposed to be the genealogical one, and tends to modify and even to obliterate it. With some tribes this has gone so far that matriarchal has changed to patriarchal custom.

Turning now to Attica, we find similar conditions. The Athenians recognized certain genealogical divisions of ancient date, which they called phratriæ, and other, geographical divisions known as demes. While each organization included all the free inhabitants of Attica, exclusive of aliens, they were not conterminous as to their parts, for members of several phratries might belong to one deme. Each division had its distinct festivals, laws, magistrates and tribunals. To the last probably belonged the Court of Areopagus and the Amphictyonic Council, whose influence was greatest in the early history of Greece. A child became by birth a member of his father's phratria, but was not admitted to his deme until he had reached the age of eighteen and passed a certain probationary training; just as in Australia a child is born into his mother's totem, but is recognized as a full member of the local community only after having suffered the ordeal of manhood initiation, at the age of puberty. The Attic law regarding aliens differs little from the Australian. A foreigner might be enrolled in a deme, but could never become a phrator. In case, however, he obtained the right to marry a free born Athenian woman, his children succeeded, through her, to all the rights of citizenship, and were enrolled in the phratria of their maternal grandfather. On the other hand, the child of a free born Athenian citizen by an alien woman was held to be illegitimate, and could not be legally admitted to the State. The preference thus given to the mother in determining the status of the child suggests that mother-right may once have been the rule in civilized Attica, as it now is in savage Australia. Here, too, we see the local gradually superseding the social organization, and the grand old Areopagus, founded in a forgotten past, shorn of its authority in the presence of tribunals created by the rising State.

NOTES ON ABORIGINAL LITERATURE.

By Dr. D. G. Brinton.

Nahuatl Studies.—A little learning is a dangerous thing. This is illustrated by an article in the *Revue D'Ethnographie*, from the pen of M. T. Maler, on the State of Chiapa. M. Maler has more or

less acquaintance with the Nahuatl language, and with a faith in its extension which leaves the sober studies of Buschmann in the shade, explains by it pretty much all the proper names that he meets in Central America. *Yucatan* he resolves into *Yucatl*, merchandise, and *tlan*, locative termination; *Mayapan*, into *Mayatl*, insects, and *pan*, locative; *Chiapa*, where there is an abundance of the grain, *chiani*, etc. He also discovers a number of verbal and grammatical similarities between the Nahuatl and the Turkish! Inasmuch as Yucatan never was a native place name, as Mayapan has a perfect explanation in the Maya language, and as Chiapa from *chiani* is a greater violence than its usual derivations, these suggestions are scarcely in season. The relationship of Nahuatl to Turkish is about as close as to Sanscrit, which was the favorite theory of the late director of the Museo Nacional, Señor Mendoza. When may we expect to see scientific methods prevail in American linguistics?

The Passamaquoddy Dialect. The word Passamaquoddy means "pollock fish." The tribe so called dwell in the eastern part of the State of Maine, and still preserve their ancient tongue in a state of considerable purity. Several intelligent ladies have recently made it the subject of study. Of these, Miss Abbie Langdon Alger has prepared quite a copious vocabulary, entirely from original materials, which will shortly be published by the American Philosophical Society. Mrs. W. W. Brown, of Calais, Maine, has carried her investigations into its grammatical structure, and reports some peculiarities not found elsewhere in Algonkin dialects. Thus, the plural, both animate and inanimate, is formed by adding *ok*, which is confined to animates in most if not all other dialects of the stock. The usual inanimate plural in *al* is limited to collectives.

The modern Delawares, though retaining the vocabulary of their ancient tongue, have largely changed its former synthetic construction, and, as one of them informed me, they now "think like white men." The same may be true of the Passamaquoddy.

NOTES ON EUROPEAN ARCHÆOLOGY.

BY HENRY PHILLIPS, JR.

FUNERAL URNS.—There has been lately discovered in the course of some investigations near Breith, in the remains of a Gallo-Romanic town, a number of interesting funeral urns of various shapes, which have been distributed to the Museé Cluny, St. Germain, St. Malo, Poitiers, Guéret, Limoges, Angoulême and Brive.

INSCRIPTIONS.—In the *Bulletino della Commissione Archeologica de Roma*, xii: 2, 3, is an account of various ancient weights, now in the Museo *Capitolino*, most of which have inscriptions hitherto unpublished, including some in Etruscan.

IN the same *Bulletino*, xii: 3, Orazio Marucchi contributes an article on an Egyptian inscription of King *Siptah*, now in the Museo Vaticano.

REV. F. MARTIN describes in the Proceedings Berne Geograph-

ical Society, his recent visit to Pœstum, and the present condition of its ruins.

MR .E. RÖTHLISBERGER contributes to the same Proceedings a vocabulary of the language of the Indians of Colombia, Central America.

STONE RINGS OR ARMLETS.—M. Henri Duveyrier contributes to the *Revue de Ethnographie*, an interesting article upon the custom prevalent among the *Tuaregs* of placing upon the right arm, as soon as they have reached virile age, a stone ring which is never again removed. The idea which they attach to it is that it gives additional strength to their sabre blow, and in their hand to hand combats it is a desirable object to crush their adversary's temple with a blow from this formidable ring. These rings are usually of a greenish serpentine, smoothed on the interior so as not to injure the wearer.

CRANIAL DEFORMITIES.—Dr. R. Martin contributes to the *Revue de Ethnographie* an article on cranial deformities in China, based upon a passage in the *Manchou-yuen-liou-kao*, of the Emperor Kien—lung (1736–1795), where, in speaking of the Manchou custom of placing a new born child to repose in such a manner that the back of the head becomes compressed and the whole head lengthened, the imperial author opposes to this the Chinese custom of laying the infant on the left or right side, so that a flattening of the temple shall result. Dr. Martin states that the Manchou custom prevails in Northern China, but the reverse is the case in the Southerly regions.

THE CROSS OF TEOTIHUACAN, is the subject of a paper by Dr. Th. Studer, President of the Berne Geographical Society, based upon an article on the same subject by Dr. Hamy, in which he comes to the conclusion that it represents as Tlaloc, *the cross of the good rain.*

BRONZE RELICS IN PERSIA AND ELSEWHERE.—General Schmidter some time since opened one of the many Tumuli which abound in Persia, and found therein both stone and bronze implements and utensils. In Persia these mounds are very numerous and mostly in fine preservation, probably the religious sentiment of the community protecting them from destruction and desecration. The field should be an inviting one for the Archæologist, and every year renders it more accessible to the civilized world.

IN *Zips*, about Oct. 11, 1883, a number of well-preserved antique bronze swords were exhumed, which have all been placed in the Felkaer Tetra Museum. In 1880 a large precious find made its way to the melting pot.

FERDINAND VON HOCHSTETTER read before the K. Akademie der Wissenschaften, on Dec. 5, 1883, an article on Mexican relics of the age of Montezuma, bearing more special reference to a curious piece of feather ornamentation, which he restores to a Mexican origin.

AT *Derçolo* in *Nonsberg*, a very important find was made in the spring of 1883, of seventy-eight bronze fibulæ and other objects, among which was a curiously formed utensil with the fore leg and head and mane of a horse, bearing an inscription in

Rhätisch. The whole of these discoveries has been placed in the museum at Innsbruck.

AT *Roggendorff*, 1878, a number of prehistoric remains were exhumed, among them several vessels and skeletons. Mr. P. Lambert Karner has described them in the *Mittheilungen* An. S. in Wien: xiii, 221.

DR. FRIEDERICH S. KRAUSS contributes to the *Mittheilungen der Anthropologischen Gesellschaft* in Wien, Band xiii, pp. 156, a valuable article on the superstitions relative to the plague that are prevalent among the Southern Slavs. The proper word for that dread malady is *Kuga*, whose origin he considers very obscure; another Volks name is *Kratelj*, which is death, one of whose feet was shorter than the other. The author treats of the plague in popular language, and in tradition, and gives specimens of the Volks poetry that bears upon his subject. In all its aspects the plague is treated as a personal demon, who sometimes can be warded off by superstitious observances, dating far back to the days of heathenism.

IN KRAIN, in 1882, Carl Deschman made some investigations into the tombs near *Watsch*, and found in them generally a pair of urns, charcoal in a small heap, fibulæ, etc., etc.

THE explorations of Franz Heger, at *Libochowan* in Bohemia, among prehistoric graves, have been attended with very good results. Mitt. der A. G., in Wien, xiii, 180.

OLD GRAVES IN BOSNIA.—Dr. Moritz Hoernes in the Mittheilungen der Arthrop: Gesellschaft, in Wien, xiii, pp. 169, gives the results of his travels and explorations in Bosnia, illustrating his article with maps and plans, and also drawings of the gravestones, with inscriptions and designs, found by him. He gathers from these discoveries that Bosnia during the Middle ages was inhabited by a Slav race of very slight culture and undeveloped faculties. On one of these tombstones is the inscription: "Here lies Radovan Rakojevic. Accursed be any one who shall be buried here if he be not of his family." The tombs are all of a Christian character, and generally bear a small cross on some part of the stone. One of these tombstones bears a representation of a row of men and women dancing together the national dance, *kolo*, with joined hands, preceeded by a flute player. Below is a man on horseback, chasing a deer. He considers that there are hundreds of thousands of these ancient and curious monuments still extant, notwithstanding their great destruction since 1878.

DR. PENEY has contributed to the Revue de Ethnographie a series of valuable papers on the Ethnography of the Egyptian Soudan.

AT the fifteenth assemblage of the German Anthropological Association, held at Breslau, August, 1884, Dr. Albrecht, of Brussels, made three communications, among which was one on the greater-than-modern length of the second toe among the ancient Greeks, in which he differed from the views previously given of Prof. Schaffhausen as to the reason, pointing out that modern sculptors followed the Greek model, and so fell into fault.

AT the same time Prof. Schadenberg presented a communication on the Ethnology of the Phillippine Islands, in which he

mentions that the inhabitants confine their religion to the worship of the full-moon. Dr. Schliemann made an address on the excavations at Tiryns; Dr. Von Tôrök, on new anthropological researches in Hungary, in which he stated that as yet no traces of diluvian man have been found in Hungary, although Dr. Roth, led by his discoveries in the cavern of O'Ruzsin at one time seemed to think otherwise; the same distinguished Professor read a paper on the cranium-type of the Magyars; Dr. Szule on the original race dwelling between Weichsel and Elbe.

DR. TISCHLER made an interesting communication on the late discoveries of glass beads in the Caucasus, now in the *Wiener Hoffmuseum;* Dr. Müller on the grave of Alaric; Dr. Neugebauer on ancient surgical instruments.

M. CHARLES RABOT, in his recent work, *Un Estate in Siberia*, enters at some length into questions connected with the Anthropological Ethnology of the Ostiraks and Samoyeds; and, on his return from his explorations, presented his ethnological collections to the museum at Florence.

M. PAUL FAUQUE, who was sent by the Ministere del'Instruction Publique, on a scientific mission to Sumatra, has published the results of his observations on the manners, customs, race, etc., of the Siaks and the Atchinese.

M. KONCHINE has just prepared a paper on the ancient bed of the *Amou-daria*, which, in his opinion, was never an immediate tributary of the Caspian sea. * * * *

PROF. SOROKINE, in his relation of his late voyage in Central Thian-chan, has decided the so-called Cyclopean ruins to be only natural rocks. * * *

Dr. LUND, well known for his explorations in the caverns of Brazil, where he found animal remains, was originally of the opinion that man could not have existed at the same time with these animals; but has lately changed his mind, and has absolutely demonstrated by facts, laboriously collected, the existence of the quaternary man in America. Société de Geographie, 1885, pp. 22.

CHEVALIER GUISEPPE *Quaglia* of Varese, in his new book on the "Laghie Torbiere * * del Varese," describes and figures forty-eight prehistoric objects found by him in the course of his explorations in the waters and turf-beds in the vicinity of that city. To his great success in that work the king has created him a "Cavaliere dell ordine della corona."

EXCHANGES.

MAGAZINE OF WESTERN HISTORY.—This is an attractive and ably conducted journal, which has been recently started at Cleveland, Ohio. It deals mainly with Western history, though the contributions are chiefly on the history of the Ohio Valley, and the majority of the writers are residents in Ohio. This is natural, for the magazine is the outgrowth of local history, and especially the county histories of Ohio, the anomalous editor and publisher having been the publisher of county history in that State. We think that, in order to represent Western history in all its broad range, the magazine would be better if published in Chicago, as that city is really the center of what may now be called the West. There are many parts of Western history which have never been treated of in a sufficiently careful and critical manner; but the region which has been most overlooked is just that which lies on either side of the Mississippi River. The period which has been most neglected is that which elapsed between 1750 and 1830, the period in which this region was gradually taken from the hands of the Indians and finally settled by the whites. The magazine is, however, geographically near, and may become the exponent of the history of all this region. It serves for the West much better than any magazine can when located in an eastern city, and we therefore can wish for it a useful career. It has been needed, and we hope it may be sustained.

BOOK REVIEWS.

The Indian Tribes of the United States—Their History, Antiquities, Customs, Religion, Art, Traditions, Oral Legends and Myths, edited by FRANCIS S. DRAKE. Illustrated by one hundred fine engravings, on steel, Philadelphia; J. B. Lippincott & Co., London, 16 Southampton Street, Covent Garden, 1884.

This valuable work is, in a sense, a reproduction of the celebrated work, by Schoolcraft, on Indian Tribes, though it is arranged in a more systematic shape and contains much new material. The former was published for the Government, by the Lippincotts, and a few of the same plates have been used. Other plates, however, have been added, so that this may be said to be a new work, for it is such virtually. The paper and press work make the volume attractive to the eye, and the engravings are full of artistic merit, the only criticism of them being that the engravers, or draughtsmen, failed to give the Indian features to the faces contained in them. The price of the book is also a great recommendation for it. Schoolcraft's original work is now out of print, and cannot be had for less than $65. It is generally held much higher. This book which contains the substantial facts, without the verbiage and irrelevant matter, is sold for $25. It is published in thirty-two parts, quarto, each part containing three full page engravings. There is one fault which will prove somewhat embarassing to the reader; the plates are not arranged so as to go with the reading matter, and it takes much time to hunt them up in the separate parts. The bound volume is not, however, subject to the objection to the same degree, as the reader can easily turn to the plates, even if remote from the reading. The arrangement of the material is a good one. The editor commences with a general description of Indian customs, traditions, superstitions, and the relics which are supposed to have belonged to Indians. This part is very valuable, as it brings together the Mound Builders' relics and Indian customs in such a way that they throw light one upon the other. The second general division of the work embraces the account of the Indian tribes, their location, history, etc. This is written in a brief and comprehensive manner, so as to give a great amount of information in a small compass. Here we should, however, criticise the author. The tribes which were geographically near one another should have been treated in their order, and their location and relative history should have been given. Instead of this the author goes from one extreme tribe to another, and does not undertake to speak of the relation of the tribes to one another at all. A map of the geographical location of the tribes is, however, given, and this proves instructive. It is probable that ethnologists will find some imperfec-

tions in the author's account of the classification and divisions of the tribes, but they are, in the main, correct or, at any rate, as correct as the present information will admit. There is need of a book which shall give the geography of the Indian tribes in a more critical and detailed shape, but for the present this is the best that we have. All the other authors who have written upon the subject, such as Albert Gallatin, C. C. Jones, H. H. Bancroft, Catlin, De Forest and others, having treated the subject from a limited range. Mr Drake's editorial work in this publication reflects credit upon his judgment, and is sufficiently accurate for general purposes. It is an excellent summary, and is really the only book which treats of all the Indian tribes, and will be sought for on account of its comprehensiveness.

A Descriptive Atlas of the Cesnola Collection of Cypriotic Antiquities, in the Metropolitan Museum of Art, New York, by LOUIS P. DI CESNOLA, L. L. D., Director of the Museum, with an interesting introduction by ERNST CURTIUS, of Berlin; in two volumes. Boston: J. R. Osgood & Co.

This welcome publication, of which the first volume only has so far appeared, consists of large folio plates, unbound, 17 x 14 inches, with one or more descriptive letter press pages attached to each plate. Each volume is to consist of about 150 plates; the first devoted to the statues and statuettes mainly, the others to the gold, silver and bronze, and to the inscriptions. The objects are reproduced by the heliotype process from photographs, and a considerable number of them will be colored. This insures a very accurate presentation of the objects to the eye, and the deficiencies, which this process necessarily finds in dealing with pieces in the round, are supplemented by the letter press, where every detail is described with all the fullness desired. To the large statues a whole plate may be given; the smaller pieces are grouped in varying numbers together; but each is minutely described, its *provenance* is given, its condition when found, its condition at the present time, which includes any repairs that may have been made, its details of carving, etc. In fact, with this *atlas* before the student, he will be able to gain all the information necessary for a scientific study of the collection, and gain a fair idea of the great extent, the variety, the extreme value, and the unique character of the collection, if never before. The Atlas can never supersede the study of the objects themselves, of course, but it offers to those who may not be able to visit the museum exceptional advantages. The first volume is chiefly given up to the objects from the Temple of Golgos and the adjacent district. The complaint made by Lang some years ago in the *Revue Archæologique* that the statues from the temple, and the field about two hundred yards distant, were not kept distinct, has now been met by a careful assignment of each to a locality of its find. Since the English occupation of Cyprus, a museum of antiquities has been formed at the capitol, Levkosia, and under its auspices some excavations were conducted in 1883, near Cythrea, on the site of a temple that proved to be that of Apollo. The description of this temple sounds like a mere repetition of Cesnola's account of the Temple of Golgos, and the published figures of the statues and statuettes found there bear so strong a resemblance to many from Golgos, that one, on meeting them somewhere astray without labels, might be tempted to say they came direct from the Cesnola collections. We notice the same material, the same costumes, the same arrangement of hair, the same abnormal peculiarities, the same variety of types—Egyptian, Assyrian, Phœnician, Persians, Greeks, Romans and intermediate grades. The headless statue, holding the bovine head in his left hand, about which much has been said, finds an almost exact counterpart, to judge from the cut, with the exception that in the place of the bovine head, the Cythrea statue holds a victory in its hand and the elbow rests upon a more clearly defined pillar. Manifestly, if the sculptors of Golgos and Cythrea were not the same, their schools were the same or closely akin. It is rare that the archæological world has the fortune to welcome so important and so sumptuous a work as this Atlas, in the production of which no expense and no pains have been spared to make it a great monument of the museum, as the collection itself makes the museum deservedly famous. Curtius, Perrot, Birch and Murray have united in contributions to the Atlas, and have thus testified to the interest which archæologists feel in the collection, and the estimation in which it is held by all who are competent to judge.

The Ancient Empire of the East, by A. H. SAYCE, New York; Charles Scribner Sons, 1884.

The five chapters in this book were written to accompany the edition of the first three books of Herodotus. So rapid has been the progress of research, that Rawlinson's notes have become antiquated, and Le Normant's history needs to be rewritten. Even Maspero is left behind. The life and history of the ancient civilizations of the East have been sketched on the authority of the monuments. The author finds a great difference between the writers of classical antiquity and the ancient monuments. Herodotos is especially faulty and can be understood only after many explanations have been made. These explanations are furnished by the decipherment ot the hieroglyphics and alphabets of of the East.

It is supposed that Herodotus never visited either Upper Egypt or Babylonia. He has given us a collection of the folk-tales of the fifth century before our era, and the "dragoman's version" of oriental history, but has given very few reliable facts. Prof. Sayce treats of Egypt, Babylonia and Assyria, the Phœnicians, Lydia and the Persian Empire, and gives a chapter to each. He says that the earliest traces of man in Egypt are to be found in the stone implements, but thinks the physiological type of the Egyptian of the "Old Empire" was Caucasian, and had no resemblance to the negro Yet it is difficult to decide his ethnic affinity. The Egyptians were as autochthonous and isolated as their own civilization. Dr. Sayce places the early dynasties 6,000 years ago. The Babylonians and Assyrians he classes as one race, whom he terms Accadians. Their physical type was peculiar, their languages agglutinative, and affiliated to the Ural-Altaic family. The pictorial hieroglyphics were first invented in Elam These became the cuneiform characters. There arose afterward a division, the southern part called Sumar or Shinar, and the northern called Sipara Accad, or the "Highlands." This is an explanation of the two terms which is new, the opinion having been heretofore that the terms "Accadian" and "Sumerian" signified two distinct races. Dr. Sayce thinks they were the same race, and both allied to the Turanian. This primitive population was supplanted by the Semites. Berosos (Sic) is the historian of this country, as Manetho is of Egypt. The history begins with myth, a period which lasted 432,000 years, but the belief is that the temple of the Sun God at Sippara dates about 3750 B. C. This is the oldest date known to history. All older dates are merely conjectural. Even this is somewhat uncertain. Rawlinson makes the earliest 2250 B. C. The Phœnecians were the Semites who took possession of the low lands of Canaan about the time that other Semites conquered Accadia, but when the Hyksos were ruling at Memphis, they were occupying the mouths of the Nile and the whole coast land, and gave to it the name Caphtor. They colonized Kypros—Cyprus—called it Kittim, then Rhodes, Melos and other islands, and finally Kartia, near Gibralter, in the district of Tarshish. The Hebrews had the same ancestors as the Phœnicians, but the Phœnicians were mingled with the aboriginese and the Assyrians of Damascus. The foundation of Tyre was about 2750 B. C. The Phœnician *Tsor*, denotes " the rock " or island on which it stood. On this matter of the Phœnicians the author has displayed much learning. The book is a valuable contribution to knowledge, especially on the subject of Phœnicia. Lydia is the link that binds together the history of Asia and Europe. Here the Hittites come in. They were of a proto-Armenian stock, and settled near Cadish, on the Orontes, and Carchemish on the river Euphrates. The Hittites invented a system of hieroglyhic writing, which they carried with them into Asia Minor, about 1300 B.C. Lydia owed its art and culture to the Hittites. This race, singularly enough, has been entirely unknown until within a few years. We think our readers will be interested in this book, and we are sure that they will find it full of new and reliable and valuable information.

Second Annual Report of the Bureau of Ethnology to the Secretary of the Smithsonian Institute, 1880 and 1881, by J. W. POWELL, Director. Washington: Government Printing Office, 1883.

No better illustration of the progress which archæology and ethnology are making in this country can be found than that given by this report. The introductory remarks of the director, Maj. J. W. Powell, shows splendid generalizing power and broad scholarship. The article on the Zuni Fetiches, by

Frank Hamilton Cushing, brings before us something entirely new. The facts correspond, however, to others which we have already noticed among the emblematic mounds, and show that a common system existed among all the tribes. We are delighted with this article as much as if the information was an original discovery made by ourselves. We next read the "Myths of the Iroquois," by Mrs. Erminnie A. Smith. Here we find the native mythology brought before us in a charming style, reminding us of the ancient tales of Greece and the far famed Scandinavian myths, but more conformed to the scenes of nature and to primitive superstition. They form another chapter in the great mythologic history of our country, and remind us as to how much we have lost by allowing so many tribes to pass away without telling us their stories. We next read the article by Mr. Henry W. Henshaw, "Animal Carvings from the Mounds of the Mississippi Valley." We recognize the cuts, which have become so familiar, and agree with the writer in many of his conclusions, but prefer to leave some questions open. He is certainly insinuating a great deal when the writer says that the discoverer of the elephant pipes and the inscribed tablet at Davenport had a remarkable "archæologic instinct, and the aid of his divining rod," when making his discoveries, as if he was guilty of an intentional fraud. We should consider it a libel if it was said of us. We pass on to the "Navajo Silversmiths," by Dr. Washington Matthews, U. S. A., and find that the native artists, with their rude contrivances, are able to work out many fine specimens of art, and are led to admire the skill of the native American. The next article is by Mr. W. H. Holmes, on "Art in Shell of the Ancient Americans." Mr. Holmes is an excellent draughtsman, and has exercised his skill in representing the rude drawings and carvings, so that the figures may come before the eye and appear as they are in the shells. These figures are in the shape of crosses, serpents, dragons, birds and various nondescript creatures. The question arises, are they altogether of native American origin, or are they signs of an intruded cultus, such as might come from Christian countries. The cross might indeed be pre-Christian, and the serpent might have been a primitive symbol of the Aryan race, but the position which the author takes, in common with others, that they were of native origin, is, in our opinion, at least, open to doubt. The Suastika is as clearly seen in some of these figures as it is in the whorls found by Schliemann in the mound at Hissarlik, and there is no reason for denying its prevalence in America. It is only because men are held to a theory that they are so tenacious of the native origin of everything in America. Castellani recognized primitive Aryan symbols in American art when he was in this country, and we may as well keep our minds open to conviction as to say that it is a foregone conclusion that everything in America is and must be native American. The report of Col. Stephenson on the "Collections obtained from the Indians in New Mexico and Arizona, in 1879," is a valuable paper, and shows that in these regions aboriginal art was advanced very much beyond that of the mound-builders.

But we would say in reference to the volume as a whole, that it indicates very thorough work both in the director and in the assistants, and is very creditable to the scholarship of the gentlemen connected with the Bureau. There is a rich field in America, and it is to be hoped that it will continue to be worked. We have unbounded admiration for thorough and honest work, and believe that the Bureau is destined to accomplish great things in American archæology—at least this is the impression which we get from the Second Annual Report.

The Odyssey of Homer, Books I-X-II. The Text, and and an English Version in Rythmic Prose, by GEORGE HERBERT PALMER, Professor of Philosophy, in Harvard University. Boston: Houghton, Mifflin & Co., 1884.

This is a charming book. It is an actual luxury to take it up and look at it, as everything about it is in such excellent taste—type, paper, binding and all. The Greek type is beautiful, and the translation is on the opposite page, the two correspoding remarkably in their place on the page. The translation is elegant. It is a perfect delight to read such a translation, with its perfect diction, and yet so literal and so true to the meaning of the original Greek. It is a wonderful book—one out of a thousand.

Pre-Historic America, by the MARQUIS DE NADAILLAC. New York and London: G. P. Putnam's Sons, 1884.

One of the strongest evidences that Archæology is making great progress in this country, is the fact that so many books are being published on the subject. Seven years ago, when this Journal was started, there was scarcely anything which could furnish reliable information to the inquiring public. Foster's Pre-historic races was then on sale, but it was nearly out of date. Wilson's last edition, in two volumes, had appeared but it was very expensive. Other than these, there was nothing except the government publications, such as "Smithsonian Reports," Smithsonian Contributions, Simpsons Explorations, The Pacific R. R. Survey, Hayden's Survey and one or two volumes of Powell's Survey. These were bulky and difficult for the ordinary reader to secure. There appeared soon after, however, the two or three little volumes written by Rev. J. P. McLean. The book on "Vanished Races," by Conant, and last but not least, the valuable work by Prof. J. T. Short, on the North Americans of Antiquity. About this time there were several societies in France which were making a specialty of Archæology. As a result of these and the interest which had been awakened on the two continents, the Marquis de Nadaillac prepared the volume whose title is given above, and the work seems to be a valuable summary or compilation, so valuable, in fact, that the author and the American editor and publisher thought it best to bring out a translation of it for American readers. Maj. J. W. Dall was selected as the editor. He has not translated, but has revised the original edition, adding to it such material as might be gathered upon this side of the water. This was well, for the author, notwithstanding his intelligence in matters pertaining to American Archæology in a broad and general sense was necessarily more or less ignorant of the investigators who were making discoveries, but whose names had not become prominent in Europe. Maj. Dall was more familiar with these, though he, owing to his long residence upon the northwest coast, does not seem to be fully informed in reference to the more recent investigations. His acquaintance is extensive on the Atlantic coast, but is lacking as far as the interior is concerned. As a result certian important points have been left out of the book, especially those concerning the latest classification of the mounds and the relics which have been discovered in them. Still the book proves to be an interesting one. It is written with the French briliancy and with American caution. There are some points which are taken for granted which would have better been left as mere tentative theories, or as as suppositions which might be overthrown or confirmed as the science should advance. Certainly the position that man in America has been found associated with extinct animals and is of undoubted extreme antiquity, is far from being proven, and if it were proven, it does not follow that this "primitive man made his home under the shells of the gigantic glyptodon. This is the visionary fancy of the French author. The naturalist, Lund, discovered bones of man in caves in Brazil, and in the same caves were bones of the extinct animals, but they belonged to different horizons. Pre-glacial man in America is not a certainty, even if the Paleolethics found in the gravel beds at Trenton are quoted as evidence, The book is splendidly printed and contains many valuable engravings. It treats of the antiquities of North America as well as South America, and is written in a fascinating style, and will undoubtedly be sought for by American Archæologists as the latest and the best contribution to the science.

Siam and Laos, as seen by our American Missionaries. Philadelphia, Presbyterian Board of Publication, No. 1334, Chestnut St.

The description of Siam has been given many times but, generally in expensive books. The Presbyterian Board has brought together into an attractive volume, a series of essays upon the country, written by different missionaries. The volume begins with an account of the geographical and archæological features of the country. This is not the most interesting, but the most valuable part of the book. There is in it a description of the "Cambodian Ruins" of Nagkon Wat. The structure cover an area of overs ten acres. It rises in three quadangular tiers of thirty feet. Out of the highest central point springs a great tower 180 feet high, and four inferior corner towers. It has been suggested that Mt. Meru, the center of the Budhist Universe, with its sacred rock circles, is symbolized.

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STONE GRAVES—THE WORK OF INDIANS.

THIRD PAPER.*

The stone graves so common in some sections of our country, will, when properly studied, furnish the Antiquarian with an apparently unbroken chain, linking some, at least, of the veritable mound-builders with well-known modern Indian tribes. The evidence they furnish bearing upon the question now under discussion is peculiarly valuable, as it will probably explain in part some of the troublesome riddles of the mounds, and also throw some rays of light into the dark mystery that still enshrouds the history of one important and still existing tribe.

These graves, as is well known, are formed of rough unhewn slabs or flat pieces of stone.

First, In a pit dug for the purpose, some two or three feet deep and of the desired dimensions,—a layer is placed to form the floor; next, similar pieces are set on edge for the sides and ends, over which other slabs are laid flat, forming the covering, the whole, when finished, making a rude box-shaped coffin or sepulcher. Sometimes one or more of the six faces are wanting, occasionally the bottom consists of a layer of water-worn boulders; sometimes the top is not a single layer, but other pieces are laid over the joints, and sometimes they are placed shingle fashion. These graves vary in length from fourteen inches to eight feet, and in width from nine inches to three feet. It is not an unusual thing to find a mound containing a number of these cists, arranged in two, three,

*The first paper appeared in the American Antiquarian, March, 1884, the second, March, 1885.

or more tiers. As a general rule, those not in mounds are near the surface of the ground, and in some instances I have observed them even projecting above it. It is probable that no one who has examined them has failed to note their strong resemblance to the European mode of burial. Even Dr. Joseph Jones, who attributed them to some "ancient race," was forcibly reminded of this resemblance, as he remarks: "In looking at the rude stone coffins of Tennessee, I have again and again been impressed with the idea that in some former age this ancient race must have come in contact with Europeans and derived this mode of burial from them."[1]

As the geographical distribution of the graves of this particular type may assist us in determining who were their authors, I give here a list of the localities in which they have been observed.

Valley of the Delaware, in the vicinity of the Delaware Water Gap, and Lancaster county, Pennsylvania.

Shenandoah Valley, West Virginia, and Lee county, Virginia.

Habersham and Barton counties, Georgia.

In various parts of middle Tennessee, especially in the Cumberland Valley, where they are found in great numbers.

At several points in Kentucky, but a number of those discovered in this State are not of the peculiar type we are now considering.

At various points in Southern Illinois.

In several localities in Ohio.

In St. Louis and Bollinger counties, Missouri.

These localities are somewhat widely scattered, on which account we might reasonably infer that several tribes were accustomed to this mode of burial, but a somewhat careful study of the subject leads me to the conclusion that they are the work of some two or three cognate tribes.

In the first place this mode of sepulture is so marked in its peculiarities as to warrant us in believing it to be an ethnic type, limited in its use to a single stock or a few tribes. So thoroughly did this fact impress itself on the mind of Dr. Jones that we find him remarking, after a very complete examination, "It is evident that the ancient race of Tennessee is distinguished from all others by their peculiar method of interment in rude stone coffins."[2]

Mr. Carr, after a careful study of the crania from these stone graves, and comparison with the skulls of various aboriginal tribes, remarks that the absence of any evidence of the custom of anterior flattening "would seem to exclude from the list of possible builders of these stone graves, the Chickasaws, Natchez,

[1] Aboriginal Remains of Tennessee, pp. 34-5.
[2] Abor. Remains Tenn., p. 34.

Choctaws, and any and all other tribes in which the custom of intentionally depressing the frontal bone can be shown to have prevailed."[1]

In the same connection he suggests the possibility of the Shawnee Indians, who formerly resided in the Cumberland valley, being the authors of the stone graves of this kind in that region. But it is due to Mr. C. C. Jones to state that he had previously made the same suggestion.

This suggestion, I believe, is in the proper direction, and I will present briefly my reasons for adopting it.

It is not my intention to enter upon the discussion of the puzzling history of these Indians, in reference to whom Parkman remarks: "Their eccentric wanderings, their sudden appearances and disappearances, perplex the antiquary and defy research,"[2]—especially as this task has been as fully performed as the historical materials warrant, by M. F. Force[3] and C. C. Royce,[4] but there are a few points bearing upon this suggestion to which I desire to call attention.

We have undoubted historical evidence that they resided in the region of the Cumberland, from the earliest notice we have of that section, until their final departure therefrom at a comparatively recent date; and as Mr. Force correctly remarks, "We first find the Shawnee in actual history about the year 1660, and living along the Cumberland river, or the Cumberland and Tennessee."[5]

It is well known that some bands of the tribe emigrated to eastern Pennsylvania near the close of the seventeenth century, and remained there for a long time in intimate and friendly relation with the Delawares, and that they were ethnically related to this latter tribe is also well known.

That the graves of this character found in the Delaware region are to be attributed to the Delawares and Shawnees, is clearly proven by the following evidence:

The positive statement by Loskiel that they were accustomed to bury in this manner: "They buried their dead by digging a grave of the required size and about one or two feet deep, they put flat stones at the bottom and set others at each end and each side on the edge; then laid the body in, generally on the back at full length, covered the grave with the same kind of stone laid as closely together as practicable, without cement, sometimes laying smaller stones over the joints or cracks to keep the earth from falling into the grave. Then they covered the grave with earth, not generally more than two or three feet high."[6]

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[1] 11th Rep. Peab. Museum, p. 366.

[2] Life of Pontiac, Vol. I., p. 32.

[3] Some early notices of the Indians of Ohio.

[4] An inquiry into the identity and history of the Shawnee Indians, in Amer. Antiq., April, 1881.

[5] *l. c.*, p. 40.

[6] Hist. Mission, United Brethren, p. 120.

Barber states that "several tribes were accustomed to encase their dead in stone boxes or tombs. Among these were the Leni Lenape or Delawares of Pennsylvania, although the graves already opened show an antiquity of probably not more than one hundred and fifty or two hundred years, because the native contents, consisting of rude pottery and ornaments, are associated usually with articles of European manufacture, such as glass beads, iron or copper implements and portions of fire-arms. A number of graves have been examined in the vicinity of the Delaware Water Gap. The tumuli were scarcely distinguishable, but were surrounded by traces of shallow trenches. The skeletons lay at a depth of about three feet and were, in almost every instance, enclosed in rude stone coffins. In one case the body had been placed in a slight excavation facing the east, and above it a low mound had been built."[1]

We have therefore positive proof that the Lenape branch of the great Algonkin family, (and Shawnees if the term Lenape cannot be considered broad enough to include them) were accustomed to bury in these box-shaped stone graves.

Hunter also states that some of the Indians he met with during his captivity, buried in graves of this kind.[2]

According to the statement of Dr. Rau, furnished Mr. C. C. Jones, "It is a fact well remembered by many persons in this neighborhood, (Monroe county, Illinois), that the Indians who inhabited this region during the early part of the present century, (probably Kickapoos), buried their dead in stone coffins."[3] He was also shown a grave of this kind in which an Indian had been buried "within the recollection of some of the old farmers of Monroe county." The Kickapoos and some other Illinois tribes pertained, as the reader is doubtless aware, to the same branch of the Algonkin family as the Shawnees and Delawares.

Now it is a striking coincidence that nearly every one of the localities in which these graves are found, has been occupied at sometime by the Shawnees or closely related Delawares, the chief exception being the western part of southern Illinois, which was formerly occupied by the allied Illinois tribes. For example, the valleys of the Cumberland, Harpeth, Duck and Stone rivers, which teem with stone graves, were the principal seats of the Shawnees from the time they were first known until their final removal therefrom; and the faint glimpses of their history left us, indicate that their settlements extended from thence to the Ohio. We also know that in comparatively modern times they and the Delawares occupied various localities in Ohio, and, what is of still more importance in this connection, that, at almost every point where graves of this

[1] American Naturalist, April, 1877, p. 199.
[2] Memoir of Captivity, 4, p. 355.
[3] Antiq. So. Indians, p. 220.

kind have been found in this State, history or tradition locates a Shawnee or Delaware village.

Jones, unaware, as it seems, that recorded tradition had preceded him, remarks that "Although it was confidently believed that the stone-grave makers of the Tennessee and Cumberland valleys might have crossed the mountains which intervened, and possessed themselves of the pleasant valleys of Georgia, the fact that they had actually done so, and, in accordance with their established custom, deposited their dead in rude sarcophagi in these localities, was never fully established until by the recent investigations by Capt. Nicols."[1]

That the stone graves of southern Illinois were made by the same people who built those of the Cumberland Valley, or closely allied tribes, is indicated not only by the graves themselves but by other resemblances, as, for example, the similarity of works in Union and Alexander counties, Illinois, to those examined by Prof. Putnam, near Nashville, Tennessee.

On the Linn place in Union county, we find a wall enclosing an area of some twenty-five or more acres. Within this enclosure are several mounds, one of considerable size, also a number of small excavations or depressions which evidently mark the sites of circular dwellings. The large mound, about 140 feet in diameter and 13 feet high, was, as shown by the excavations made in it, built for some other purpose than that of burial. First, there had been a fire built apparently on the surface of the ground, and over the ashes a mound of comparatively small size raised; this was coated over with clay and hardened by a fire made by burning straw and brush on it. Over this, probably while burning, a layer of clay and sand was made and also burnt, then more earth and probably a third layer of clay mixed with sand.

Not far away, only a few miles, was a mound (one on Mill Creek, examined by Mr. Earle) literally crowded with stone graves, and at various points in the intermediate region similar graves over which no mound had been raised.[2]

Turning now to Prof. Putnam's account of his exploration of the mounds and graves near Nashville, we find this statement: "The examination of the mounds at Greenwood, near Lebanon, which were inside an earth embankment, enclosing an area of several acres, proves conclusively that in this case, (and by inference in all similar earth-works, of which several have been described in the State), the earth-work with its ditch was the remnant of a protecting wall about a village, inside which the houses of the people were built and their dead buried. Also that the large mounds, similar to the one in this enclosure, (which is 15 feet high, by about 150 feet in diameter), were for some purpose other than that of burial;

[1] Antiquities So. Ind., p. 215. [2] Personal Examination.

possibly connected with the religious rites or superstitions of the people, or the erection of a particular building, as shown by the fact that before this large mound was erected, a very extensive fire had been built upon the surface, over which the mound was raised; while the remains of burnt bones and other evidences of a feast were apparent; also from the remains of a stake of red cedar. Again, after the mound had been erected to the height of seven feet, another similar and extensive fire had existed, leaving the same evidences of burnt bones, etc., with the addition of burnt corn-cobs. The mound had then been completed, and my removal of probably about one-third of it did not reveal any evidence of its having been used for burial or for an ordinary dwelling, though it is very likely to have been the location of some important building, and the extensive fires which had twice nearly covered its whole area, might have been owing to the destruction of such a building by fire."

"The houses of the people were circular in outline, from fifteen to forty feet in diameter, and probably made entirely of poles covered with mud, mats or skins, as their decay has left a ring of rich black earth, mixed with refuse consisting of bones, broken pottery, etc."[1]

The close resemblance between the works in the two places, even down to details, seems to leave no doubt that they were made by one and the same people.

But the resemblance does not stop here. Near the center of the large mound on the Linn place, at the depth of about three feet, I found two or three broad flat rocks about twenty inches long by twelve wide. Prof. Putnam also found three similar slabs at a like depth in the mound he opened.[2] In the stone grave mound he also found "an ornament of very thin copper which was originally circular and with a *corrugated surface.*"[3] Mr. Earle also found fragments of very thin copper with a corrugated surface, or as he correctly describes them "raised lines," in the mound on Mill Creek.

Lest it be said that there is no proof that the mounds on the Linn place had any connection with the graves in the Mill Creek mound, as the two were some four miles apart, I call attention to Mr. Perrine's statement in the Smithsonian report for the year 1872.[4] Although our measurements differ materially, his figures being simply estimates, yet I know from his own statement to me, from personal examination and the description, that he refers to the works on the Linn place. In one of the mounds of this group he found a large number of skeletons which "were carefully enclosed with flat stones, each skeleton being separate." These were, as we now know, stone graves.

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[1] Rep. Peab. Mus., p. 205.
[2] Ibid. 241.
[3] Ibid., 343.
[4] 418–19.

The resemblance, therefore, between the two groups is complete, and must, until evidence appears to disprove the supposition, be attributed to the same people, or closely allied tribes having similar customs.

The remains of a cedar stake and the burned corn-cobs, found by Prof. Putnam, forbid the idea that the works in which they were found can lay claim to any very remote antiquity. That the copper pieces found in the Mill Creek mound are of European manufacture is not doubted by any one who has seen them.

Taking all these corroborating facts together, we are forced to the conclusion that these graves, although found in the widely separated localities mentioned, are attributable to the Shawnee Indians and their congenors, the Delawares and Kickapoos.

As a part of these graves, and possibly most of them, are of comparatively recent date, we are certainly justified in believing them to be the work of the Indians found inhabiting the country when first visited by Europeans, which is the chief point in this discussion.

If the opinion I have advanced in regard to the stone graves be correct, does it follow that the mounds and enclosures are the works of the same people? That they built the mounds in which the stone graves are found, must be admitted, but it does not necessarily follow that they raised the others, yet the fact that in many instances they placed these graves in mounds is an indication of an attempt to incorporate a new method of burial on an older one, or to combine it with a former custom.

The chief difficulty which follows the assumption that the mounds and enclosures—as those mentioned by Prof. Putnam and those on the Linn place—are to be attributed to the people who buried in the stone graves is, that it "proves too much." Prof. Putnam, without any reference to the view I have advanced, comes to the following conclusion, after his explorations in Tennessee:

"The people who buried their dead in the singular stone graves in Tennessee, were intimately connected with, or were of the same nation as those whose dead were buried in the mounds and cemeteries in Missouri, Arkansas and Illinois, and who made the pottery of which such a large amount has been taken from the burial places in those States. This is shown by the similarity of the crania, by the identity in material, patterns and finish of the pottery, and by the shell carvings, etc."[1]

It must be admitted by all who examine them that the resemblance between the ancient works of Cumberland Valley,

[1] 11th Rep. Peab. Mus., p. 204.

the western portion of southern Illinois, southeast Missouri and northeast Arkansas is very marked and close. The same thing is equally true in regard to the pottery from these sections. Still I do not think this will warrant us in deciding that they are all the work of one tribe, at least not until we find that stone graves accompany those of Missouri and Arkansas. That they are the work of intimately related tribes, or those having similar customs must be admitted, but the fact that the stone graves accompany those of Tennessee and Illinois, and are not found with those of southeastern Missouri and Arkansas, seems to indicate tribal distinctions between the authors of the works in these different localities. But future discoveries may remove even this mark of distinction. However this may be, one thing is evident, that if the works of Tennessee and southern Illinois are to be attributed to Indians, those of southeast Missouri and northeast Arkansas, must also be attributed not only to the same race but to tribes intimately related to each other, or at least to those having similar habits and customs, or which were long in contact with each other.

The importance and bearing of this evidence does not stop with what has been stated. It is so interlocked with other facts relating to the work of the "veritable mound-builders" as to leave no hiatus into which the theory of a "lost race" or Toltec occupation can be thrust. It forms an unbroken chain connecting the mound builders and historical Indians which no sophistry or reasoning can break. Not only were some of the tribes in comparatively modern times accustomed to bury in graves of this type, but we find them often occupying the interior of mounds, even some of those most noted as the typical works of the mound-builders.

In addition to this they are so intimately connected with the engraved shell and a peculiar class of copper articles, as to make it evident that the makers of the one were the possessors of the other. But our reference to these must be given in another article.

CYRUS THOMAS.

THE CHIEF GOD OF THE ALGONKINS, IN HIS CHARACTER AS A CHEAT AND LIAR.

In Mr. Charles G. Leland's recent work, "the Algonquin Legends of New England," noticed in a late number of the "American Antiquarian," the Chief Divinity of the Micmacs and Penobscots appears under what seems at first the outrageously incongruous name of *Gluskap, the Liar!* This is the translation of the name as given by the Rev. Silas T. Rand, missionary among the Micmacs, and the best living authority on that language. From a comparison of the radicals of the name in related dialects of the Algonkin stock, I should say that a more strictly literal rendering would be "word-breaker," or "deceiver with words." In the Penobscot dialect the word is divided thus. *Glus-Gahbé*, where the component parts are more distinctly visible.

The explanation of this epithet as quoted from native sources by Mr. Leland, is that he was called the liar because "when he left earth, like King Arthur, for Fairy Land, he promised to return, and has never done so."

It is true that the Algonkin Hero-God, like all the American culture-heroes, Ioskeha, Quetzalcoatl. Zamna, Bochica, Viracocha and the rest, disappeared in some mysterious way, promising again to visit his people, and has long delayed his coming. But it was not for that reason that he was called the "deceiver in words." Had Mr. Leland made himself acquainted with Algonkin mythology in general, he would have found that this is but one of several, to our thinking, opprobrious names they applied to their highest divinity, their National Hero, and the Reputed Saviour and Benefactor of their Race.

The Crees, living northwest of the Micmacs, call this Divine personage, whom, as Father Lacombe tells us they regard as "*Le Principal Genie et Le Fondateur de ces Nations*," by the name *Wisakketjak*, which means "the Trickster," "the Deceiver." The Chipeways apply to him a similar term, *Nenaboj*, or as it is usually written, *Nanabojoo*, and *Nanaboshoo*, "the Cheat," allied to *Nanabanisi*, he is cheated. (Baraga, *Otchipwe dictionary*).

This is the same Deity that reappears under the names *Manabozho*, *Michabo*, and *Messou*, among the Chipeway tribes; as *Napiw* among the Blackfeet; and as *Wetucks* among the New England Indians, where he is mentioned by Roger Williams as "A Man that wrought great miracles among them, with some kind of broken resemblance to the Sonne of God." (*Key into the language of America*, p. 24.)

These appellations have various significations. The last mentioned is apparently from *Ock* or *Ogh*, father, with the prefix *wit*, which conveys the sense "in common" or "general." Hence it would be "the common father." Michabo, constantly translated by writers "the Great Hare," as if derived from *Michi*, great, and *Wabos*, hare, is really a verbal form from *Michi* and *Wabi*, white, and should be translated, "the Great White One." The reference is to the white light of the dawn, he, like most of the other American Hero-Gods, being an impersonation of the light.

In all the pure and ancient Algonkin Cosmogonical Legends, this Divinity creates the world by his magic powers, peoples it with game and animals, places man upon it, teaches his favorite people the arts of the chase, and gives them the corn and beans. His work is disturbed by enemies of various kinds, sometimes his own brothers, sometimes by a formidable serpent and his minions.

These myths, when analyzed through the proper names they contain, and compared with those of the better known mythologies of the old world, show plainly that their original purport was to recount under metaphorical language, on the one hand, the unceasing struggle of day with night, light with darkness, and on the other, that no less important conflict which is ever waging between the storm and sunshine, the winter and summer, the rain and the clear sky.

Writers, whose knowledge of religions was confined to that of the Semitic race, as represented in our Bible, have maintained that the story of Michabo's battles with the serpent, who is certainly represented as a Master of Magic and subtlety, and hence dangerous to the human race, must have come from contact with the missionaries. A careful study of the myth will dispel all doubts on this point. Years ago, Mr. E. G. Squier showed that this legend was unquestionably of aboriginal source; but he failed to perceive its significance. (See his article in *The American Review*, for 1848, entitled, "Manabozho and the Great Serpent, an Algonquin legend.") The Serpent, typical of the sinuous lightning, symbolizes the storm, the rains and the water.

But to return to the class of names with which we began. The struggles of Michabo with these various powerful enemies I have just named, constitute the principal theme of the countless tales which are told of him by the native story tellers, only a small part of which, and those much disfigured, came under the notice of Mr. Leland, among the long civilized eastern tribes. Mr. Schoolcraft frequently refers to these "innumerable tales of personal achievement, sagacity, endurance, miracle and trick which place him in almost every scene of deep interest which can be imagined." (*Algic Researches*, Vol. 1, p. 134.) These words express the spirit of the greater

number of these legends. Michabo does not conquer his enemies by brute force, nor by superior strength, but by craft and ruses, by transforming himself into unsuspected shapes, by cunning and strategy. He thus comes to be represented as the Arch-Deceiver; but in a good sense, as his enemies on whom he practices these wiles are also those of the human race, and he exercises his powers with a benevolent intention.

Thus it comes to pass that this highest divinity of these nations, their Chief God and Culture-Hero, bears in familiar narrative the surprising titles, "the Liar," "the Cheat," and "the Deceiver."

It would be an interesting literary and psychological study to compare this form of the Michabo myth with some in the old world, which closely resemble it in what artists call *Motive.* I would name particularly the story of the "wily Ulysses" of the Greeks, the "transformations of Ebu Seid of Serug" and the like in Arabic, and the famous tale of Reynard the Fox in Medieval literature. The same Spirit breathes in all of them; all minister to the delight with which the mind contemplates mere physical strength beaten in the struggle with intelligence. They are all peans sung for the victory of mind over matter. In none of them is there much nicety about the means used to accomplish the ends. Deceit by word and action is the general resource of the heroes. They all act on the Italian maxim:

> "O per Fortuna, O per Ingano,
> Il Vencer Sempre e Laudabil Cosa."

The moralist may object to the lessons instilled by such examples; but certain it is that for long generations both red and white men took huge delight in the recountal of such exploits, and to this day their charm has not departed from them.

DANIEL G. BRINTON, M. D.

EARTH AND SHELL MOUNDS ON THE ATLANTIC COAST OF FLORIDA.*

Two and a half miles west of Daytona, Florida, a beautiful town largely founded upon an Indian shell ridge on the west bank of the Halifax river, is a mound, concerning which, I shall next speak. It is a double-headed mound, situated at the termination of a natural ridge, but is separated from it by a slight depression of perhaps six feet. A similar depression continued through the mound, leaving a knoll or pinnacle of that height on either side, and the entire slope descended at an angle of about thirty-five degrees to a marsh at the base, which extended for a distance of some miles. I was limited in time and not prepared to excavate, but could not fail to observe this peculiarity of slope. The perpendicular height of this mound I estimated at thirty feet from the marsh level. Each summit was about thirty feet in breadth of plateau, and the extreme distance from the outer edge of one plateau to that of the other, about seventy-five or eighty feet. This mound was quite unique in this feature of a divided summit.

I now recur to the "Spruce Creek" mound, (before instanced as a specimen of the flanked mounds), because it displays some other peculiarities of a unique character, so far as my own experience of mounds goes. Spruce Creek comes into Halifax river on the west side, some five miles north of Mosquito inlet. Sailing up this creek some six miles, we reached a long bend, on the southern bank of which rose a continuous cliff of Coquina rock, the summit twenty-five feet above the water level, and the base bedded for a height of ten feet, in a sloping bank of debris.

Having a general idea that the mound stood upon the plateau somewhere in the rear of this cliff, and looking for a break where it could be ascended conveniently, we saw, after skirting it a quarter of a mile, a low projecting promontory covered with palmetto. Just beyond it was a marshy cove, and here we moored the yacht and landed upon the promontory, where we found ourselves at the foot of a steep ravine. Ascending this ravine about one hundred and fifty yards, the rise became steeper, and we found ourselves upon the summit of the desired mound. With a suspicion that it was not altogether a natural ravine, I retraced my steps, and was satisfied that the promontory on which I had landed was an arti-

*This article and the one in the March Number constitute the different parts of a paper read before the Anthropological Section of the American Association for the advancement of Science, at their session in Philadelphia, September, 5, 1884.

ficial construction. It arose four feet above the water level, and terminated in a dug way near the base of the mound. Examining this ascent carefully, I found that the bottom and sides of the ravine showed the thick bed of leaves undisturbed, and no abrasion of the sides indicated a water course.

A DUG-WAY AND A LANDING.

It was impossible to resist the conviction, that when the mound was constructed, easy access to and from the water, and a suitable place to land were also provided. Further examination showed that the descent was from West to East, and crossing the left flank of the mound as we ascended, we came upon an open field covering several acres, quite clear of trees and having in its centre a sand mound five feet in height.

The great mound, on the south side, joined this field with no indication of a trench or ditch. The mound itself rose to the height of twenty-two feet above the plain, and the summit plateau was forty feet in diameter. On the west and northwest the sides sloped steeply down into a pit some eight feet deep. On the north extended the flanking ridge before noticed. On the northeast, the surfaces of the adjacent plateau to the cliff, had been scraped away to some feet below the original level, the material no doubt having contributed its share to the construction of the mound. With its present dense shade it offered an agreeable shelter for our tents, and it was pleasant to imagine that it had perhaps furnished similar accommodation to our savage predecessors some centuries since. Adjacent to this plateau descended the dug way, and beyond that, the steep bank rose to the summit level of the cliff. On the southeast of the mound and fifty yards from its base, were three pits but a few yards apart, and quite disconnected. These were about twelve feet square and eight feet deep, about three feet of the lower depth being in rotten Coquina rock. These pits were similar to those before mentioned as occurring at the terminus of the flanking ridge on the north side of the mound. The earth from these pits could have been carried to the mound at an early stage of the work, and heaped upon its slope with slight expenditure of labor, since, on this south side no trench intervened. I was, greatly to my regret, denied the privilege of excavating this mound as completely as I wished. Having in one day's work, cleared the sides of the scrub growth and the summit of a vast mass of dead and decayed trees, I was advised that the owner objected, and would pay me a visit. All I could do the next day before he came to forbid it, was, to dig the entire summit plateau the depth of five feet, the material being replaced as we went along. From the appearance of the surface, other explorers had in successive efforts done quite as much, and it was not surprising that our work was quite fruitless.

I had the opportunity of interviewing several parties who were cognizant of a find of extreme interest. About five years before my visit, a family in the neighborhood having some visitors from the North, made a raid in the centre of the plateau on the summit of this mound. They assured me that at the depth of four feet, five skulls were found, arranged in a circle.

MODERN RELICS.

Upon one of these skulls were three circular silver plates, slightly concave, each perforated in the centre. One plate was four inches in diameter, another three inches, and the last two inches. In addition was a solid silver cylindrical bar, resembling a trumpet, with a flare at the larger end. It was twelve inches long and three-quarters of an inch in diameter, slightly increasing towards the flared end. Five pieces of Spanish silver coin were found stamped with a large figure 4, evidently four real pieces. These objects so rare and unique have entirely disappeared. The silver bar, most probably a Spanish decoration donated to some Indian Chief, was lost in some unaccountable way before the party reached the house. No doubt it has added its proportion to the silver money of the present age. The silver plates were probably gorgets or breast ornaments, and the Spanish coins would indicate an intrusive burial since the Spanish discovery. About five miles southeast from the Spruce Creek Mound is the Stone House Mound which exhibits one peculiarity quite unique so far as I am aware. New Smyrna, lying on the Lagoon called Hillsboro River, at a distance of three miles south of Mosquito Inlet, is situated on an old shell ridge which is more or less continuous for some three miles north from that town. The northern extremity of this ridge terminated in a Lagoon, and here its base is skirted by a small creek, navigable at high tide, which, threading the innumerable Mangrove Islands of that Lagoon, outlets opposite the Inlet itself. This termination is a high eminence of shell on which for over an hundred years has stood a stone house, now in ruin, but mentioned by Vignolles in 1821, as the last inhabited house on the coast south of St. Augustine. A little more than half a mile due west from this house, and on the westerly verge of the intervening Hamak, is the Stone House Mound, so named from the Hamak. This is a large mound rising at a very easy grade to the height of eighteen feet from the level of the adjacent plain. Two feet below the surface, this Mound proved to be encased with irregular flat blocks of coquina, set well together, each a good load for two men to handle. Above and below this stratum the soil was free of rock. My excavation commenced on the north slope with a width of thirty feet, and was carried in converging lines to a point fifteen feet south of the centre of the summit. It was carried

in on the apparent original level of the ground, which was about six feet above the level of the adjacent ditch.

Throughout this section these stones had to be removed, and as the depth of the excavation increased, the sand became more indurated, till it resembled rotten brick and required the use of a mattock to dislodge it. The sand was of a dull red color, but occasionally a sort of pocket of pure white sand intervened which was not compact, and ran freely from the cavity when opened. There was nothing found within the mound—neither burials nor relics. The indurated character of the sand was doubtless due to some ingredient peculiar to the locality. About 150 yards to the north, I dug a burial mound nine feet in height and seventy feet in base diameter, and at five feet depth encountered the same hardened material. Below that level we found human bones greatly decayed, but no other object. The stone casing referred to, I imagine to have been so disposed in order to relieve the neighborhood of the fragmentary blocks which were exposed as the soil was stripped away from the out-cropping coquina layers. They became obstacles in excavating, and at a certain stage it was more convenient to clear the surface of this accumulation, and at the same time add to the height of the mound. The soil thus cleared, the supply was ample to overlay and conceal the stone stratum.

The base diameter of this mound was 130 feet, and its perpendicular height eighteen feet; its surface rounding much like the bottom of an inverted shallow bowl. In this connection I would call attention to two mounds made entirely of loose rock, the only ones, so constructed, which have come under my notice on the East Coast.

These mounds are found upon the north and south banks respectively of the Miami River, which empties into Bay Biscayne, nine miles northwest from Cape Florida. They are (with one other, a sand mound), the last mounds on the Atlantic Coast of the Peninsula, before we reach the terminating headland called Cape Sable, where the Western or Gulf Coast of Florida may be said to commence. The northern of these mounds is but a short distance from the shore of Bay Biscayne and 200 yards to the north of the River. The Southern mound is about half a mile back from the coast, and 150 yards from the river. The only published notice I have seen of these mounds, is that by the late Professor Jeffries Wyman, who visited the locality in 1869, and gave in the Third Annual Report of the Peabody Museum, a brief, but sufficiently accurate account of their appearance and dimensions. The northern mound having been extensively used for recent burials, he was unable to examine. Of the southern one he says: "It is about eleven feet high, sixty long and forty broad, covered with sand and supporting a growth of young

trees. With the exception of the covering of sand, it is made entirely of loose fragments of the coral limestone of the neighborhood, and appears to have been simply a monumental structure. An excavation was made from one of the sides as far as the centre, and from the top to the base, but nothing was found buried or enclosed in it." My notes show a slight increase on these measurements. The structure is in effect a long slightly undulating ridge of loose rock twelve feet perpendicular height, and rising to a narrow plateau from eight to ten feet broad, the base one hundred and twenty feet in length and fifty in breadth. The summit plateau was seventy feet in length. I did not observe the excavation referred to by Prof. Wyman, not being at the time aware of his visit, and in the dense foliage it could easily have been overlooked, unless intentionally hunted up. A deep excavation had been made, at the point where I first reached it, by searchers after the hidden hoards of Black Cesar, an independent free-booter of the last century, and in a private interview with the explorer, I was assured that he had unearthed a huge Indian coffin containing remarkable remains. This opening gave me the opportunity of noticing that the interior filling of soil was light, as if drifted in by the gales and hurricanes during a period of years, but by no means compact enough to indicate that many hundred years had elapsed since its erection. Fragments of the exhumed coffin and of the bones it had contained, strewed the bottom of the excavation. Though greatly decayed, the boards proved to be tongued and grooved plank, and conclusively brought this interment within the range of a very recent historic period. The rocks of which the mound or ridge was constructed, were not larger than one man could handle. The northern mound was much larger, and of a broader ridge. How far this was due to changes made to adapt it to use as a cemetery for the Military Post of Fort Dallas, upon the same bank of the Miami River, it was impossible to determine. Its original features must have undergone considerable change, but it was much the largest mound of the two. Its highest summit was fifteen feet in perpendicular height, breadth of summit plateau from ten to twenty feet, the length at the base 200 feet, with a breadth of about eighty feet. The stones used in its construction were similar to those in the south mound. I remained in this vicinity about two weeks, and after examining the character of the soil and country generally, could not avoid coming to the conclusion that these elongated ridges were simply heaps of stone, gathered from the thin soil around them to clear the ground for cultivation. Information of the early history of this remote corner of the Peninsula is extremely meagre. Vignolles is of the opinion that it was shunned by settlers, and even the Indians only lived there under compulsion. This

may well have been the case, their favorite bivalve, the oyster, cannot live in these waters, and the rocky points of coral limestone cropping out, forbid free cultivation. Many tracts of this rocky ridge, (known on the present maps as Rocky Pine Land), are covered with broken stone, the results of disintegration of these rocky points. The removal of these fragments, no doubt a work of great labor, has released a large breadth of soil available for cultivation, on both sides of the fresh water river. Whether these heaps were raised by early colonies of Spaniards, such as were known to have been wrecked here about the middle of the sixteenth century, or by Indian tribes forced in long past ages by the encroachments of more northern ones, to find refuge in this remote spot, it is impossible to say. In the Journal of Commissioner Ellicott, who took water for his vessel from this river in 1799, he speaks of no Indians, but shot deer and wild fowl freely, and gathered an abundance of *wild limes*, which seems to indicate an early Spanish occupation. On the other hand, an Indian burial mound of sand rises 200 yards from the shore of the Bay, at a point about a quarter of a mile south of the river, which would seem to indicate an Indian settlement, as does the considerable admixture of clam shells in the soil of the north bank, upon which stood the buildings of Fort Dallas.

In exploring the sand mound referred to, I found many burials, but in such a state of decay, as to be merely distinguishable by a shade in the sand. The only relic was a beautiful earthern cup symmetrically shaped, and ornamented with incised lines of graceful pattern, which was in almost perfect condition. Before closing this paper, I venture to observe, that the objects found in the mounds on this Atlantic Coast of Florida, illustrate the extent and the limit of trade with tribes further north. In two mounds I have found fragments of galena; in one a sheet of mica; in one a stone gorget; in one mound eight ceremonial weapons evidently a hidden store of a manufacturer, and in fifteen mounds fifty-eight celts. All these objects came originally from points further north. They were made of material not to be procured in Florida. The Artisan of Upper Georgia and North Carolina brought his finest work to obtain the best return in the shells and beads for which he exchanged them.

The mounds about St. Augustine differ but little from those on the coast to the northward in the character of their contents. Celts are frequently found—but these objects disappear by the time we reach the southern boundary of St. Johns County, fifty miles south of St. Augustine; from there to Cape Sabine, not one of the above northern made objects appears. It might reasonably be inferred that the pre-historic trade in these implements, was therefore of comparatively recent date,

and the North Florida tribes were ready to absorb the supply, such as it was, leaving no surplus for those tribes further south. It is also a question whether at the period of the Spanish occupation this trade had not for some unknown reason already ceased, and the existing stock of implements have been buried in the mounds. This may be inferred from the absolute silence of both Spanish and French historians, as to the prevalence of any stone objects, save arrowheads. Had celts been abundant or prevalent, so minute an observer as Landonniere would scarcely have failed to record the fact, but the only reference to stone implements of any sort I find in his report, is in the account of an exploring party sent by him up the St. Johns, which states that certain tribes object to warring against a certain King, because he controls a region whence is obtained the stone for the wedges used in splitting wood.

A minute inspection of these beautiful implements, shows that they cannot have been used for rougher work than scraping and polishing skins. The only other reference to stone implements (possibly celts) occurs in Ribault's own narrative of his first expedition as follows: "Their spades and mattocks are made of wood so well and fitly as it is possible, which they make with certain *stones*, oyster shells and mussels, with which they also make their bows and arrows and short *lances*, and cut and polish all sorts of wood that they employ about their building." This seems a near approach to the possible use of the celt, though it is quite as likely to refer to the rude flint scrapers which are found over the entire Peninsula, notably on the West Coast, where the raw material is abundant. A similarity of pattern and occasionally of material, between these Florida Celts and those used by the Caribs in the West Indies, has induced the idea with some that these latter tribes may have supplied such implements in the way of trade, but the evidence of the mounds points the other way. If this had been the case, celts would have appeared in excess from Cape Florida to Carnaveral, the points nearest and most accessible to the Carib Voyagers from the Bahamas, whereas the exploration of twenty-eight sand mounds, between St. Johns County and Cape Sabine, revealed no implements of the sort, while fifteen of the twenty mounds explored on and near the coast, within the limits of St. Johns County, produced fifty-eight. It seems somewhat remarkable that none of these celts, when found in the mounds, were in juxta position with any burial. The Sanchez mound, eight miles north of St. Augustine, produced twenty-five celts. The mound itself was but nine feet high, top plateau thirty feet diameter, and base diameter seventy-five feet. I found in this mound twenty original burials, extremely decayed, each comprising a mass of the larger bones capped by the skull. These burials were at the depth of five feet and were arranged (with slight irregularity)

in a circle of twenty feet diameter. They were encrusted with red paint, which discolored the soil about them, and indicated their presence before they were reached by the spade. No foreign objects were found near them, but the celts were distributed irregularly through the interior of the mound, and within the circle of burials, at depths varying from two to six feet, Two whetstones or hones of water-worn sand-stone, two small pebbles each with a flattened side, a fine spear-head of Chalcedony, and about half a pint of red paint in a mass, included all the find other than celts. No doubt the red paint, when originally dropped or buried, was enclosed in a small bag, such as the friendly Paracoussy presented with similar contents to Ribault, on his first visit to the River of May, in 1562. Neither in this mound nor in any other, have I found any foreign object intimately associated with the group of bones except beads, which were sometimes found by the handful, placed upon or just over the skull. It seems to be conceded, that the Indians in early times in Florida, and in many other Southern States, exposed the bodies of the dead to the air, protected by a pen of logs against wild animals. It was not till years had past, and both flesh and smaller bones had disappeared, that they were gathered and deposited in the mound, in the state which I have described. Often (I am not sure it was always so) they were plentifully besmeared with red paint or ochreous earth, and so laid away in their final resting place, erected as a permanent receptacle.

Whether it was with a view to concealment, or from a veneration for their deceased owners, that these objects were deposited in the mound, is still an open question; but I venture to think, that the lapse of years between their temporary and final entombment, had largely blunted any special veneration for the several masses of decayed fragmentary bones, whose individuality was gone, and that the objects found generally in such mounds, are those which the Indian temporarily buried, as inconvenient to carry, when threatened by hostile tribes with expulsion from his village, or were possibly dropped by the laborers when erecting the mounds. The almost total absence of arrow or spear-heads from the mounds, when these would have been possessions intimately associated with the deceased, is in this connection significant. Of my collection of arrow-heads from Florida, not more than twenty have been exhumed from mounds, and of spear-heads only eight. Speaking solely as to the testimony of the mounds on the Atlantic Coast of Florida, I am inclined to believe, that while weapons and implements belonging to the deceased, may have been deposited with his remains in the pen or wooden enclosure which constituted his temporary shelter, they were rarely, if ever, transferred with his bones to their final resting place in these burial mounds.

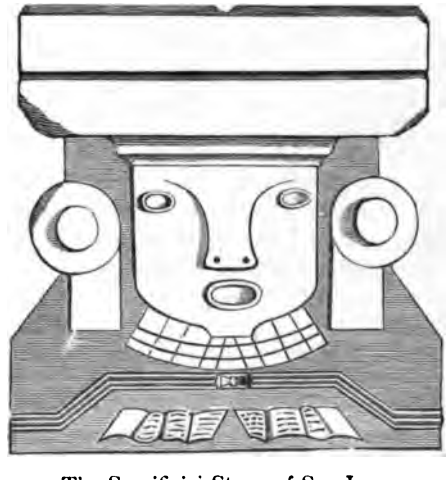
ANDREW E. DOUGLASS.

THE SACRIFICIAL STONE OF SAN JUAN, TEOTIHUACAN.

[Read before the Section of Anthropology of the American Association for the Advancement of Science, at Philadelphia, September, 1884.]

From the best information obtainable, I can learn of no place where the Sacrificial Stone of San Juan, Teotihuacan, has been described. At first thought this seems strange, but upon reflection I am convinced that the reason is not so strange as was at first apparent. Many writers have described the remains at this place, but several of these writers have never seen that of which they tell.

Others have written their accounts from visits of two or three hours duration, in which time they could barely visit the two pyramids and from their tops secure an idea of the topography of the surrounding country.



The Sacrificial Stone of San Juan.

A day spent here will only give one a general idea of the positions of the remains and of their character. In order to obtain this, every moment of time must be occupied in the most available manner with the material at hand.

The Sacrificial Stone is but a few yards from the point where the "Micoatl," or "Path of the Dead," enters the open court south of the pyramid of the moon. It is just west of a mound about eighteen feet high, beneath which is an opening

entering the ground for some distance. The stone rests on its base, leaning slightly against a pile of debris, which prevents any view of the bottom and one side.

This stone is of gray granite. Its estimated weight is twelve tons. It is evidently a combination of a Sacrificial Stone and an idol. It is cut from one piece of stone, the upper portion or cap being the Sacrificial Stone proper, below which is the pedestal and base, one end of which, at least, is occupied by an image probably used as an idol. The work upon this image is well executed, but does not equal that of the great Sacrificial Stone taken from beneath the "Socalo," or Great Plaza, in the city of Mexico, and now exhibited in the court of the National Museum. The difference in carving may most likely be explained by a difference in the time of the manufacture—that of San Juan being perhaps much the older. This stone is square at the top and bottom and is made from lighter colored granite than the larger circular stone in the City of Mexico.

The stone at San Juan is five feet, six inches square at the top and bottom, and exactly six feet high. Three sides and the top of it are exposed to view, The top is dressed very true and is unmarked save by a gutter running through its center to the front and rear, down the former of which it may be traced for a short distance expanding as it becomes less distinct.

Around the top is a square groove two inches deep. About half way down the cap is a semi-circular groove less than one inch deep extending entirely around the stone. Below the cap the sides of the stone are abruptly cut smaller. This smaller part, at the front of the stone, is occupied by the figure of a gigantic human face, artistically arranged to support the heavy upper part of the stone.

The nose is very large, expanding toward the end where are cut two small holes to represent nostrils. The eyes are cut into the rock and are surrounded by grooves to represent either the lids or eyebrows. The mouth is cut into the stone about an inch and is similar in shape to the eyes.

It is also surrounded by a groove to represent the lips. Upon each side of the head is a slightly oblong cutting with a smaller raised circle upon each—these, I think, are the ears of the figure. From each ear a ridge of the same size extends to the posterior surface of the stone.

Immediately below each ear and attached thereto is an oblong figure which I have considered an ear pendant. Just below the ears the stone gradually expands to a base of the same size as the cap.

This slope may have been extended for shoulders. The sides of the face are cut almost straight, but the lower portions approaching the chin are rounded, indicating a fullness of the

face. The chin is cut square at the end. The neck is not visible being covered by a necklace. The necklace is divided into three parts by slightly curved parallel lines running nearly horizontally. These are met by lateral lines, part of them at right angles, dividing the necklace into angular blocks most probably representing beads or precious stones.

Below the chin, in the body of the image, is a rectangular cavity eight inches long, three inches wide, and three inches deep, into which, perhaps, a breastplate was fastened in some manner. Extending in a straight line from two sides of this opening, are two raised cuttings, within about sixteen inches of each side they turn angularly towards the lower corners; but before reaching the corners again turn, meeting the sides of the stone on a parallel line with their first course about two inches above the base. Between the large cavity just mentioned and the base of the stone are two peculiar scroll like figures, each divided into four parts which meet each other in the center of the block in the form of an inverted V.

In but one work on Mexico do I find any reference to what I think is the object I have described. Fred A. Ober, in his recent "Travels in Mexico," says: "No vestige of image or statue remains, save a great carved block called a Sacrificial Stone, now lying two hundred yards from the Pyramid of the Moon." This, I think, is the one of which I have just spoken.

Brantz Mayer, in his "Mexico, New Mexico and California," speaks of two stones near the ruins, one a large globular mass of granite measuring nineteen feet eight inches in circumference, upon which there is some rude carving which has been found to bear some resemblance to the Aztec figure of the sun; the other which is figured, he calls a large Sacrificial Stone known as the "Fainting Stone." Neither of these descriptions, I think, apply here.

Students of Mexican Archæology generally agree that there were upon each of these large pyramids, temples on or near which were figures of one or more of the gods of these ancient people, "upon whose breasts," one author says, (referring to these images), "were plates of polished gold and silver."

The early Spanish historians tell us that these idols were still standing when the Spaniards occupied this famous valley, but that the superstitious and destructive Bishop Zumarraga destroyed these, together with all other evidences of idol worship upon which he could lay his hands.

Is it a fact that these idols were destroyed? Such masses of granite as we find worked into some of these idols and Sacrificial Stones in Mexico could scarcely have been broken to any great extent by any means the Spaniards could employ. I think the destruction of these monuments could only have meant the destruction of the temples and the overthrow of the idols. In which case the idols would have, perhaps, be-

come buried in debris, or they may have even been buried by Cortez band, for fear the natives, whom they wished to christianize; lest finding them, they should desire to return to their idolatrous worship.

The sacrificial stone, to which I have called attention, was excavated near where it now lies by order of Maximillian, but he, by reason of his death, was prevented from removing it to the capital, as he desired.

This stone was in all probability, I think, one of those which were formerly upon the tops of these pyramids. Owing to its proximity to the "House of the Moon," and its great size, it very probably at one time occupied the summit of this monument. We have no way of knowing who the figure upon this stone was intended to represent. After a great deal of examination of remains I have found but one figure in which there is discernable any resemblance. The image to which I refer is the so-called figure of Quetzalcoat, from Cholula.

These two images are of a type which, to say the least, is peculiar.

Are they of the same epoch? Do they both represent the great "God of the Air" of the ancient Toltecs?

AMOS W. BUTLER.

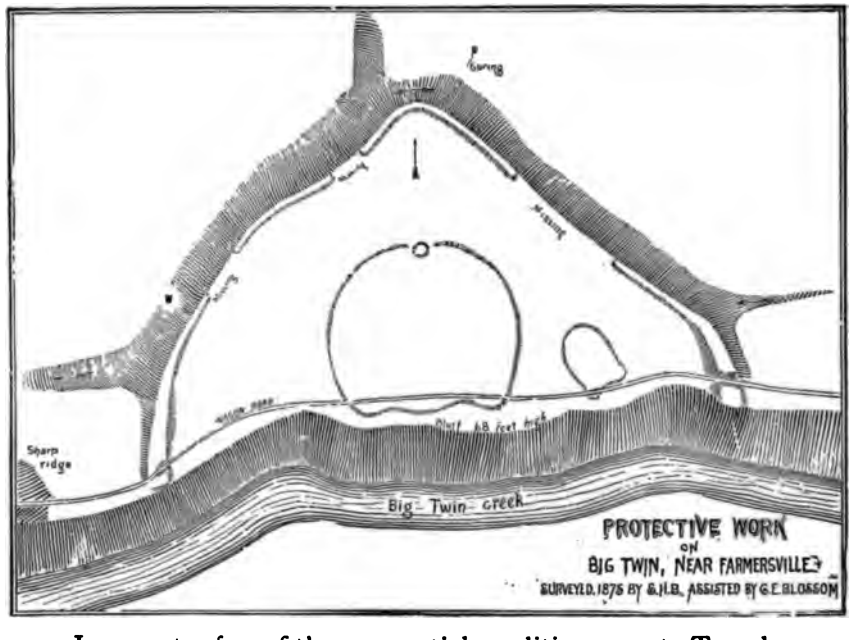
BROOKVILLE, IND., Sept. 1, 1884.

CORRESPONDENCE.

ANCIENT FORTIFICATION IN OHIO.

Editor American Antiquarian:

The ancient inhabitants of what is now the State of Ohio, in selecting sites for protective positions, availed themselves of nature's fastnesses, where safety could be assured with the least expenditure of labor. Such the streams of Southwestern Ohio occasionally furnish. They are bordered by hills which, in many places, are scarred and defaced by deep and wide ravines, and furnish localities where all the requisite features of natural defense are found.



I present a few of these essential conditions: 1st. Two deep and wide ravines in convenient proximity. (2d). A convergence from their mouths to their sources. (3d). Accessibility to water. (4th). Precipitous bluffs fronting the stream.

An interesting work of this character is situated twelve miles west from Alexandersville, four miles north from Germantown and one mile southwest from Farmersville. It occupies an elevated position on the north side of Big Twin, a tributary of the Miami, near the extremity of a great bend in the stream, from which there is an uninterrupted view up and down the narrow valley.

The form is an irregular triangle, two sides of which rest upon the margins of deep and wide ravines, while the third is formed by the sinuous Twin bluffs.—*See Figure.*

Mr. Fortroy, the proprietor, declares that the wall was originally carried obliquely down the face of the bluff, which it enclosed. But, after a careful examination, I came away with doubts. It must be conceded, however, that there is no discoverable protection on the crest of the cliff, and there was formerly a belt of terrace between the hill and the creek.

The ravine which forms the protection on the northeast side, and which heads a short distance east of the enclosure, discharges its accumulated waters at right angles into a wider and deeper one, which protects the work on the northwest side, or to a point within two hundred feet of the crest of the bluff, where it curves to the west, and discharges into Tom's run, near its mouth.

The spaces between the ravines and the bluff are protected by a wall forty feet wide and five feet high, with a ditch on each side twelve feet wide, whence the material for the wall was evidently taken. These ditches were cut through the crest of the bluff, and extended obliquely down the steep incline about one rod.

The wall which traverses the ravine is flanked by a ditch on the *inside.* This apparent lack of judgment on the part of those ancient engineers is explained by the fact, that the wall was carried along the crest of the ravine; hence the inside was the only available point from which the material could have been procured.

At several points on the northwest side, deep and wide lateral ravines have been formed in the hill-side, removing thus large sections of the wall, and on the northeast side several rods in extent have fallen into the ravine and been carried off. Indeed, the entire circumvallation presents unmistakable evidence of rapid destruction. These walls are increased or diminished in accordance with the weakness or strength of nature's protection; but they do not at any point exceed three feet, except at the east and west angles, where the bluff is united with the ravines. The entire length of the circumvallation is 2,674 feet.

Within the circumvallation there are three subordinate enclosures. The largest of the three, which is centrally located, is three hundred and thirty feet in a north and south direction, and four hundred feet, east and west. The second in size is situated southeast of the large one, and approaches it at one point within fifty feet. The length of this enclosure, which has a northwest bend, is one hundred and thirty-five feet, and the breadth is one hundred feet in its middle diameter. The third in size, which is a true circle twenty-five feet in diameter, is situated within the largest subordinate

enclosure, and partially encloses a gap forty feet wide, leaving an entrance on each side of the circle.

FARMERSVILLE WORKS.

The form of the largest of these subordinate works approaches the horse-shoe, closed at the end by a sinuous wall, separated from the crest of the cliff by a space twenty feet wide. The second in size resembles the horse-shoe magnet with the end closed and the sides indented, or compressed.

A stone object, wrought out of dark shale, found in a field adjacent to this position, is an exact representation of the enclosure referred to. Its length is six inches, width in the middle, or widest part, three inches. The inward curving of the sides occurs near the southeastern end, in the original.

These subordinate works embrace nearly all the level land within the enclosure. On the northwest and northeast sides there is a steep declivity in the direction of the ravines. Indeed the entire space enclosed, with the exception of a narrow strip bordering the cliff, declines from the creek, differing in this particular from any known locality. Thus the rain that falls on this little water-shed, flows westward into Tom's run; thence into Twin, where it is carried back and washes the base of the hill from which it started, after making a detour of about one mile.

It is probable that these interior works were constructed with the view of increased security; but the form is obscure. This feature is specially noticeable in the smaller work and may be due to caprice. Possibly, too, these singular structures may have possessed some hidden religious significance.

Within these interior enclosures many circular depressions occur. Mr. C. E. Blossom, of the Miamisburg Bulletin, (who assisted me in making the survey of these works), dug into several of these pan-shaped vestiges, and found charcoal, ashes and burned clay. Similar discoveries rewarded his labors in the smallest subordinate enclosure. These, probably, are the sites of dwelling places. From the inconsiderable height of the margins of these depressions, I infer that the huts were constructed of perishable materials erected upon a clay base; for, if the structures had been composed exclusively of clay, they would present the appearance of low mounds with flat, or slightly depressed tops. The circle, within the largest interior work, may have been a council house, or the residence of the chief.

As this enclosure is still covered with forest trees, interspersed with bramble, Mr. Blossom found it a laborious task to penetrate the mass of roots which he encountered; and hence, his explorations were not as extensive as they would have been under more favorable conditions.

About one-fourth of a mile from this enclosure, in a south-east direction, there is a mound, elliptical in form, perched upon the crest of the cliff, which encloses a vast body of ashes. Assuming that these are the cremated remains of human bodies, we have here undoubted evidence of a former dense population; and, does it not justify the further inference that this position was occupied a very considerable length of time? But we have additional evidence in the discovery of many objects of handiwork, some of which are rare in form and finish. Some years ago, a gentleman, while sauntering through this enclosure, found on the surface a bead, wrought out of the spirula of a large sea shell, about one inch in length and a half-inch in its middle diameter, tapering gradually toward the ends. It is perforated length-wise. The spiral form is well defined, and it still retains much of its original brilliancy. It is singularly perfect. In fact, its remarkable perfection detracts largely from its claims to a remote antiquity. Several copper objects, including two bracelets and a wedge form implement, were said to have been taken from a small mound in the immediate vicinity of the great ash heap referred to.

It is probable that this enclosure will prove a rich depository of pre-historic objects. But it is deeply to be regretted that this involves the destruction of these interesting monuments.

The water supply of these ancient villagers, was from a spring on one side and the creek on the other—while the fertile Twin terrace rewarded their labors with a generous yield of corn, squashes, beans and tobacco.

Passing out of this enclosure at its western angle, the tourist finds himself on a sharp ridge with the precipitous Twin bluff on his left, and a steep incline on his right. On this ridge a wagon road is located which traverses the work in an east and west direction. On the right hand side of this road, about one hundred yards from the enclosure, there is a low mound four feet in diameter. I dug into this mound, but found nothing. If this mole hill served any purpose in the transmission of intelligence, it was nothing more than to mark the spot where a sentinel was posted.

The fact is, the evidences of long continued heat referred to as proof of their telegraphic character, are, unfortunately, concealed by a cover of clay several feet thick. To this rule I have never seen an exception.

S. H. BINKLEY.

ALEXANDERSVILLE, OHIO.

HUMAN FOOT PRINTS IN NICARAGUA.

Editor American Antiquarian:

Since my last of Jan. 7th, I have visited the S. W. slope of the Managua Sierras, and the San Rafiel district, finding what I *had* called sedimentary rock, containing human and animal foot prints, to be a tufa, similar to that at Managua, mentioned in my last.

My error originated in reports, made to me when there in 1878, by various residents of the town, that human and animal foot prints were found to the northward, on similar rock as that being quarried for the indigo vats of Mr. Vijil, the common sedimentary of the neighborhood, containing fossil leaves, specimens of which I had sent forward to the Smithsonian, with underlying shells as associates of others a few miles below at the "Bocana Group."

The surface had a similar appearance and deceived me until cutting out an imprint, when I saw it was similar to that at Managua. Had time allowed my visiting it in 1878 the error would not have occurred.

Comments in the daily press came to my notice, distorting the facts about the Managua impressions, quoting remarks made by the editor of the "*El Povenir*" as pertaining to me; one article in the *S. W. Tribune*, March 15th, is the most notable, and touching it, I send you a few lines.

Much of my time during the last six years, has been devoted to the collection of Archæological facts, and relics of the past occupants of this and the neighboring States, under the auspices of the Peabody Museum, (and previously for the Smithsonian).

Our rule is not to publish these, as they belong exclusively to that Institution; nor have we departed from it except in one or two instances. But a discovery of this nature is more or less public property and does not require its announcement to be withheld, and you were notified in my letter referred to. I published nothing in the "*El Povenir*" of Managua; simply remarked to the editors that the impressions were at least 50,000 years old, and might be 200,000, but not until after a further examination of the formation to the S. W., since made, could any definite time be assigned them. The editor of "*El Povenir*" makes a grave error in referring to the pottery. It has no connection with the impressions, more than modern ware, having been found by Mr. Low, in the R. R. cutting east of the town, in the surface soil, and was probably made by the Chordegas, or a branch of the Maya nation, as one specimen had inscriptions of the class seen on the Palenque Tablet.

A few Americans took up the subject at Mr. Low's during one evening, and among others I spoke of Mr. Plongeon's discoveries in Yucatan of original Etruscan and Chaldean

characters, and was commenting on them and Donnelly's Atlantis. In no other way can I account for the mistakes of the Italian editor of the "*El Povenir.*" He takes all for granted. We disputed the westward emigration from Atlantis to people this Continent, as it leaves unexplained the occurrence of many things found here, *not seen* in the European antiquities. One of the principal implements of this class is the metate. The elaborate work displayed on those found in Costa Rica, N.W. department, taken with their abundance in the stone mounds, desecrated since the conquest to supply that region, with many mounds still untouched, capable of a supply for some time to come, all goes to show that their origin was near by. They occur from here to Chili, and northward to Arizona, but decrease in numbers and workmanship the farther we proceed from here, reduced to a mere slab in Chili. This goes to show that their origin was about Nicaragua, or on adjacent land now lying under the ocean.

Man undoubtedly came into existence, in drift localities, when the surroundings had sufficiently advanced to sustain him in his primitive state. The Creator did not make all men alike, nor the food for subsistence. Whether he started in with a tail is doubted by many, but as his existence was at first precarious, and no habitation save the forest, a caudal appendage would have been a great use, allowing him to ascend trees with greater facility in search of food and to escape his foes.

Now in all the pictographs from Bolivia to this country extending along the summit of the Cordilleras, his monkey ancestor is not forgotten; also in all the cave inscriptions and others, among the ravines he holds a prominent place; here his descendants remembered him, but after the lapse of ages, they migrating over a central belt of land now submerged, passed over to Europe, and there ignored their origin. As far as I can learn, these emigrations tend toward the central or warmer regions of the existing continents, rarely across them, and from Islands at as great distance apart.

Written history was not so old, at the time Columbus occupied this region, as to overlook the departure of a branch of its ancestors from a territory comprised within a few degrees of latitude and longitude, as that of Palestine and the country around the Mediterranean, their only outlet; still that history records accounts of a people to the westward which have disappeared under the Atlantic, since it was written; breaking the link with their Yucatan ancestors, leaving only the Egyptian offshoot.

We require but few more explorations at Ecuador and along the coast south, to ratify the migration from there, along the western slope of the Andes, and the coast to this country, of a *Pre-pliocene* race, offshoots of superabundant population,

sustained at first along the coast by the shell fish, whose refuse heaps are simply enormous in Costa Rica, where in the compact masses cut through by recent streams we find human bones, and broken pottery of the (so-called) neolithic type. While on the Pacific slope in this state we find decomposed shells in the mounds with ware, and these tumuli subsequently used, with their surface covered with fragments and flint implements of the (so-called) paleolithic race, *indisputably* independent of those below them, and left subsequently. Near by, the complicated inner roof inscriptions found in the caves, can with little trouble be seen, by breaking away the sandstone ledge in part remaining, whose compact mass was divided from the sedimentary rock.

The cataclysm that blotted out this race along the coast, left a vast monumental record, most patent from San Fran del Sur to the Managua Sierras, where it seemed to abut against their sides, and broke into fragments the tufas, which the volcanoes on this range had vomited out long anteriorly.

This burial ground of the race, nature has opened; not by any sudden convulsions. Her rain showers descending from the resultant hills, have revealed to us the buried caves and foot prints, better than written history, as true a relation of the event as that of Sodom and Gommorah in ancient writ. Among the hills and in the ravines, shells adherent to the surface of the raised limestone beds, similar to those used as food, others under the sedimentary rock, show that their occupants were deprived of life in a moment of time, and are shown to us as they lay along the old beach in sight. Separate beds now revealed after this long time, as stated.

Then we seek where the eruption spent its force on the western slope of the Sierras, breaking the tufas into large masses, whose angular bowlders lay in the deep ravines, made by recent waterways, while those near the coast were plowed with the ocean sediment, now being carried back, and in places entirely removed — showing impressions as stated—on the same tufas as those on the eastern slope which remain intact. Connect with the latter similar caves near by, with roof inscriptions of the class noted at San Rafiel; caves undisturbed by any convulsion, and near them fossil impression of marine origin. It looks reasonable to suppose the race making the footmarks were cotemporaneous and pre-pliocene.

Yours truly,

EARL FLINT.

Riras, Nicaragua, Oct. 17, 1884.

SHELL MOUND IN CALIFORNIA.*

Editor American Antiquarian:

In one sense, mounds are earth inscriptions. They seem to be silent monuments of the past. Though dumb to many interesting questions, yet like surviving stone celts, they cannot be said to be wholly speechless. Do they not, in some small measure, "rise to explain?" Let us interrogate one out of several specimens of mounds in the Occident.

Some two miles from the City Hall, west of San Pueblo road, in Oakland, California, and adjacent to the shore of the Bay, stands an ancient mound.

To within the date of 1876, it was thickly embowered with willow and Buckeye trees of recent growth. Much of the shrubbery is now cut away, and the Berkely R. R. passes within a few feet of the tumulus. It was then beheld as a grass covered pile, bold, symmetrical, antique, and planted upon alluvial soil.

Fig. 1.
Shell Mound, Oakland, Cal.

It was bounded by a level plain of land on the east, and by the waters of the shallow side of the Bay on the west.

It is imposing in form, interesting in feature, locality, and composition. Its height and shapely contour denote painful toil of human hands, or perhaps oppressive work of a superstitious race of beings. It is not the product of accident, floods, tides, winds, glaciers, or earthquake disturbance; but is a lonely monument of primeval art, by laboring muscles heaved upon an inviting strand, in the long unrecorded years of the past.

*From advanced sheets of "The Predicates of Law."

To look upon the world of human motive and human action, and notice the manual product of that age, the inquirer will perceive a prodigal amount of useless, and to us, meaningless expenditure of labor—labor chiefly bestowed upon the visual expression of religious ideas. Religious bias and fervor have squandered more wealth of treasure and of thought, than any sentiment of our being. To give perpetuity to these sacred and semi-sacred ideas, earth and stone were first laid under contribution. These have withstood the inroads of time. They constitute our cabinet and field specimens of study.

The tumulus, as figured above, is composed of shells, earth and gravel. The shells, much decayed and broken, predominate. Hence the name, "Shell Mound." This seems to have escaped the notice of Mr. Bancroft in his exhaustive book—"The Pacific Races," though the nearest pre-historic object of any to his home.

It measures 300 feet in diameter at the base, and is estimated to be twenty-five feet in height. It is circular and pyramidal in form, with a flat summit, and is 150 feet across its truncated top.[1] From the vicinity and place in question, a few specimens of human bones, bones of animals, mortars, pestles, and celts have been exhumed.

There is another point of ground in this immediate neighborhood, which invites attention from the student of archæology; though it might escape the notice of the general visitor.

A few rods east of the mound above described, is a knoll of less strength of feature. It is about twelve feet high, with a gently rounded surface. On its summit stands the dwelling of Mr. W., the proprietor of the land, surrounded by luxuriant shrubbery. This lesser tumulus is also composed of edible bivalve shells, which were evidently brought from the adjacent Bay. The shells at this point are so much decayed upon the surface of the ground, that plants and trees find perpetual moisture, and grow without irrigation. A well thirty feet deep, sunk in this ancient hillock, passed through a layer of shells twelve feet deep before the native black soil was reached. A vault ten feet deep, passed through shells interspersed with layers of ashes and charcoal.

These tumuli present types of two distinct kinds of structure, and each offers a platform on which to stand to contemplate the meaning of the subject in its general bearing, for comparing the two lines of genetic explanation. As they are distinct in character, two essentially distinct reasons must be assigned for their origin.

Shell mounds are met with in nearly all countries. They are numerous in Denmark. There they are called Kjocken-

[1] There is now a Skating Rink or Shooting Gallery on it.

modings, or Kitchen-Middins. Inscriptions and carved images of a people, tell what they of their day and generation thought. Caves and shelving rocks inform us about their dwelling and sleeping places. The Kitchen-Middin tells what they ate and where they feasted.

That kind of shell heap, which is most largely composed of the residue of by-gone residences, are regarded as the undecayed crumbs from aboriginal tables. Though often an indiscriminate pile, it cannot be said to be the product of either accident or design; but like a foot-print, is the result of the life and habits of a people.

Through these customs and diet of an unknown people, this lesser pile of *detritus* under discussion, grew into conspicuous existence, without effort or care. Not so with the larger or pyramidal heaps which we have pictured in the figure. The concise form and technical outline of that, lead to the conviction that it is an object of design; a thing of thought, a monument of toil executed in conformity to a pains-taking plan.

Ideas of intention are stamped upon the latter, inattention, habit, lack of order, mark the former. Abbe Dornenech, who passed seven years among the natives of the Pacific, says: "Indians do no work for mere pastime; they have a definite object in their labor."

The above pyramid bespeaks that sentiment. It was obviously fashioned by patient hands, pursuant to a tribal purpose. That purpose may have been for an oratorio, altar, religious and sacrificial place, or for sepulchre. Indeed we find Dunlap[1] lends corroborative opinion to one of the above views. He says: "Among the American aborigines, sun worship and fire worship are found everywhere, as well as tradition of an ancient worship of the sun in the United States. Mounds were erected for sun worship as "high places."

At this point we find it convenient, if not necessary, to compare records of ancient history in our hands, with this ancient work at our feet. A little reasoning, like a hyphen, may connect the word of history and the earthwork together. What means this? "Josiah began to purge Jerusalem from *high places*, and the groves and the carved images. And they break the images, and cut down the groves and break in pieces the brazen serpent that Moses had made.[2] Asa, the King, cut down the idol his mother had made in a grove, and burnt it. But the high places were not taken away. Nevertheless the people did sacrifice in high places.[3]

The above fragments of antiquated lore indicate the remains of what had been a dominant phallic worship, which, in those

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[1] Vestiges of Spirit History of Man, page 41.
[2] 2nd Kings 18-4.
[3] 2nd Chron., 33-17.

days, wore the evident phase of decline. High places, groves, images, Baal, and the Hosts of Heaven, comprehend four or five ever present articles of faith; it may be useful not to be forgotten, and which were generally associated together.

The altars were on the high places, the groves were places of concealment, and planted near the mounds. The groves were sometimes artificial productions, and sometimes they were living trees. The graven images were phallic, orphic, and celestial emblems that held close companionship with the grave. All were presided over by Balaam Gods. Baal and Baal-zeon were like Cupid of the Greeks, gods of love and of hymeneal rites.

When the phallic cultus faded away, its attendant paraphernalia went with it, except those high places. Some of them were removed, but many were extensive, enduring works, and remained; or, as the text has it, "the high places were not taken away."

There is reason to believe the shell mound in Oakland, California, is a relic of an old superstition. One reason for so believing, is its antiquity and its exterior technical character. There are phallic emblems, and celestial emblems which have been exhumed from this and similar places.

These signs appear to have been as much parts of the tumulus, as modern cooking utensils are parts of our dwellings, and indicate the purpose for which it was erected. The reader will see below an indigenous crescent image carved in stone, which is in the cabinet collection of the State University, Berkely, California. It is two inches wide and eight inches from point to point.

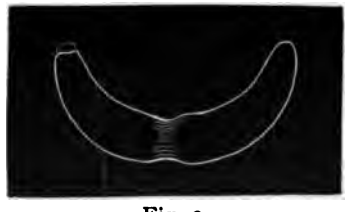

Fig. 2.

Stone Crescent from Alameda Co., Cal.

From the shape of the specimen, we gather the idea that the moon was an object of worship, and that the tumulus was erected with some such object in view. The relic was not found in the pyramid, but was exhumed from a mound in the vicinity. The fact that such relics are numerous on this coast, has led to this interpretation. We associate the crescent relics with the older and more elaborate works, and conclude that the same kinds of worship prevailed here, which history informes us were common in Oriental countries.

GAMBLING AMONGST THE PIEGANS.

Editor American Antiquarian:

The Piegans are a tribe of the great Blackfeet nation, now living on reserves in the northern part of Montana, and in the vicinity of Fort Macleod, Alberta.

On Sunday, the 7th day of October, '83, I witnessed a very peculiar game, participated in by a number of Piegan braves, at Fort Macleod. The game was as follows:

A suitable piece of level ground was chosen, and the braves, some fifteen or twenty, prepared for the game. Two boards were set on edge parallel to each other, and about twelve feet apart. Two long bladed arrows were then chosen—next a heavy ring about four inches in diameter was produced. This ring was either of stone or metal. It was covered with buckskin, and a number of strings of various colored beads were stretched across the inside like diameters of a circle. Now every thing was ready, and two young braves signified their intention to start the game. Each took one of the arrows and one the ring. They stood side by side at one board, facing the other board. The ring being rolled swiftly in front, so as to strike the other board and rebound, falling on its side. The braves, following the ring, threw the arrows with a peculiar underhand swing of the arm, so that the arrows would strike the ground and remain where the throwers judged the ring would fall. Previously they had determined on a particular bead. Now, the thrower of the arrow whose tip was nearest to this particular bead, took the stakes. Then two more players would step in and the game kept up for hours. Two umpires were stationed at each board and they ruled the game. But in the case of a close point the crowd gave the decision, the players saying nothing. The players played for a certain number of points or just one trial. The general score was best two out of three. They, the players, staked their money, ornaments, blankets, etc., and when these gave out, their horses and guns. It is said that they will stake their squaws and children. Though I have often witnessed the game, I have never seen that, but I have known them to sell their squaws and children when hard pressed for food. This is one of their worst games for gambling. They get very noisy and excited. Others, beside the players, are permitted to bet, and there are regular stake holders, everything being carried on most honorably. White men are poor hands at this game; the alertness of the eye in judging the distances being natural to the Indian.

G. E. LAIDLAW, Toronto, Ont.

EDITORIAL.

ANIMAL EFFIGIES AND NATIVE SYMBOLISM COMPARED.

One of the most interesting problems brought before the American Archæologist, is that which comes from the study of animal effigies and native symbols. 1. The effigies have great interest, if for no other reason than for this, that they reveal what animals once abounded here, the mounds and earthworks frequently preserving the images of these animals as correctly as if they were carved in wood, or preserved in sculptured monuments. 2. They help us to understand something of that remarkable totem system, which found its fullest embodiment among the various tribes of this continent. 3. The most im-

Fig. 121.
Turtle-shaped Mound in Florida.

portant point of all, however, is that in the animal effigies and other symbols, many think they discover traces of the migration of these tribes from other continents. This is a favorite theme with the European Archæologists, but the solution of it in all probablility will come from American students.

I. We shall first consider the animal effigies in connection with their geographical distribution.

We present, with this number, a cut of a mound in Florida. The description of the mound may be found in the Smithsonian Report for 1879. It was furnished by S. T. Walker, whose name has occasionally appeared in this journal. The cut has been kindly loaned by Prof. S. F. Baird. The mound is situated on a narrow island called Long Key. Mr. Walker says: "It is not without some hesitation that I attribute to this mound a turtle shape, as such an occurrence among the

mounds in this part of Florida is an anomaly. Whether the shape depicted was the result of deliberate design on the part of the builders or the accidental result of irregular ditching, I cannot say. The mound proper consists of a structure of sand 108 feet long and sixty-six feet wide. It is about five feet high at a point marked A in the figure. This constitutes the body, or carapace, and tail of the supposed turtle. The ditches a a a are distinct and leave the flippers B B and the head C at the natural level of the land. The view in section Fig. 121, will convey an idea of what I mean. A being the mound and B B the ditches, leaving the flippers as before stated. In other words, the flippers are not the result of heaping up sand, their shapes being given by the ditches. Whether the design was to give the form of a turtle or not, the result was precisely the same, the whole structure having a wonderful resemblance to that animal. It is not at all improbable that the ancient architects had that form in view in the construction of this mound, as the beaches on this island are still the resort of hundreds of turtles, which come up to lay their eggs in the sand during the summer, and successful turtle fisheries are now carried on in Boca Ciega Bay, immediately opposite this point."

We call attention to this mound because it indicates that animal effigies were more numerous and wide-spread than we have been accustomed to suppose. This point has been shown by the explorations of Mr. W. T. Lewis, in Minnesota, by Hon. C. C. Jones, in Georgia, by Mr. Evans, in Iowa, and various gentlemen in Ohio. Mr. Lewis writes to Science, Feb. 13, as follows: "The effigies surveyed by myself are, twenty-five in Minnesota, one in Iowa, ninety-six in Wisconsin. Among the effigies in Minnesota, are a frog, and a bird effigy at La Crescent, also two bird effigies and a quadruped, on the Root River, near Hokah, and a fish effigy near the village of Dakota, on the same river. The fish is 110 feet long." It is represented as having fins and a doubly divided tail. Mr. C. C. Jones, in the Smithsonian Report for 1877, describes two bird mounds in Georgia. One of these is near Eatonton, Putnam county, crowning a high ridge overlooking the little Grady creek. "It is composed entirely of boulders of white quartz rock, gathered from the adjacent territory. The boulders were carefully piled together, and the interstices were filled with smaller fragments of milk quartz. Into the composition of the structure enters neither earth nor clay. This stone mound represents an eagle lying upon its back with extended wings. (See Fig. 122.)

In the construction of the tumulus, respect was had to the object imitated, the height of the tumulus, at the breast of the bird being between seven and eight feet, its altitude thence decreasing toward the head and beak, where it is not more

than two and one-half feet high, and also toward the extremity of the wings and tail, where it has an elevation of scarcely two feet. The beak is slightly aquiline, and the tail is indented. Measured from the top of the head to the extremity of the tail this structure is 102 feet long. From tip to tip of the wings, measured across the body, we have a distance of 120 feet. The greatest expanse of tail is 38 feet, the same as the lateral diameter of the body. The proportions of the neck, head, wings and tail are cleverly preserved. About a mile and a half from Lawrence Ferry, on the Oconee river, and situated on a stony ridge near the main road, on the planta-

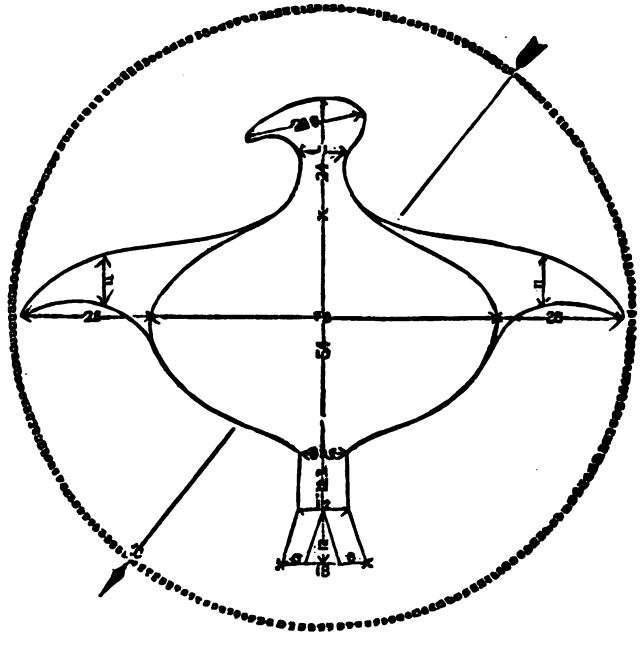

Fig. 122.
Bird-shaped Mound in Georgia.

tion of Mr. Kilichen D. Little, in Putnam county, is another of these bird-shaped mounds. Like the former, it is composed wholly of boulders and white quartz rock, collected from the hill on which it stands. Its dimensions do not materially differ from these of the tumulus on the Scott place. The tail, however, is bifurcated. The head of the bird lies to the southeast, and its wings are extended in the direction of the northeast and southwest. The entire length of the structure from the crown of the head to the end of the tail is 182 feet and three inches. For a distance of twelve feet the tail is bifurcated, and just above the part of bifurcation it is twelve feet

wide. Across the body, and from tip to tip of the wings, the tape gave us a measurement of 132 feet. The body of this bird, which is evidently lying on its back, is stouter than that of the eagle, being seventy-six feet in diameter. Its wings are relatively shorter. The proportions of the head, neck and tail are tolerably well observed.

These discoveries in Florida and Georgia, are important because they bring to light an important fact in reference to the pre-historic monuments of this country. Heretofore we have considered that animal effigies were confined to one or two localities, namely, Ohio and Wisconsin. But it is now seen that they are scattered over the Southern states as well.

The finds of new effigies are somewhat numerous. We have discovered many interesting groups,[1] and others think that they recognize some remarkable shapes in them, such as it has not been supposed that they possessed. A series of earth heaps was recently discovered in Minnesota[2] which, taken together, had the shape of a massive serpent, the head being in the form of a wide and flattened mound with a diameter of fifty feet. We have spoken of the serpent figure in the walls of the ancient fort on the Miami river,[3] and would also refer to the works at Portsmouth, Ohio, as still more remarkable than these.

In connection with this subject, the bird mound[4] in Ohio should be mentioned. (See Fig. 123). This has been pronounced by Dr. Brinton to be an arrow-head or a feathered arrow, and not a bird track. This we doubt, and yet we are happy to give the new interpretation, as it helps to arouse thought and increase study. The turkey tracks on the inscribed rocks at Barnesville, Ohio, may be arrows, but not the effigy at Newark.

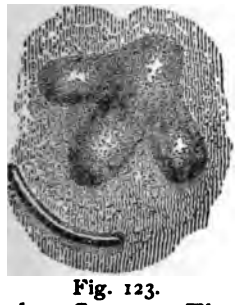

Fig. 123.

The discoveries by Mr. Lewis also show that the effigy builders occasionally crossed the borders and extended into other States. The Root River, on which these discoveries were made, empties into the Mississippi opposite LaCrosse. It is worthy of notice that in this vicinity is the pictured cave —the cave at West Salem. It was at La Crosse, also, that Prof. Putnam surveyed and excavated some emblematic mounds. A few miles north of La Crosse is Trempeleau, where emblematic mounds are found in great numbers. It is

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[1] See articles on emblematic mounds in this journal, also reports of the Wisconsin Academy of Science, and of the Wisconsin Historical Society, Vol. IX.

[2] See Young Mineralogist and Antiquarian, March 25.

[3] See American Antiquarian, Vol. I., No. 1.

[4] See report of Philadelphia Academy of Science for Oct., '84, also pamphlets on Pedographs, by Dr. D. G. Brinton.

also worthy of notice that on the Root River there is a burial mound concerning which there is a tradition. It appears that here there was fought a battle between the Sioux and Chippewas, and that the persons who were slain were buried in this mound. There was recently discovered a peculiar relic in the same region. It is a terra cotta figure representing a Mexican face, with head dress and ornaments. Thus we have in this vicinity traces of the early and later occupation. The emblematic mound-builders also occasionally extended down into the State of Illinois. We have recently discovered a turtle effigy at Rockford, and others have found similar effigies on the Kishwaukee, a few miles east of that city. These, however, were evidently built by the same people who erected the mounds in Wisconsin. The isolated mounds in Ohio, Georgia and Florida are interesting on account of their very isolation.

The native symbolism of America has not yet been understood, and we do not think that the monuments should disappear without a careful study of them. Still we realize that much care is needed, lest we be carried away by unsafe guides. To illustrate, Wm. Pidgeon has been generally regarded as altogether unreliable, yet he is being quoted as authority by Nadaillac, and Mr. W. T. Lewis thinks that he is finding confirmations of his strange assertions. Mr. Luther Conant also quotes him, and says that he has discovered symbolic structures in Missouri which correspond even to the most fanciful figures found in the tabooed volume. An accurate survey, and a reasonable interpretation of the monuments will, perhaps, correct the vagaries which have come to us from the crude and visionary descriptions contained in the book, and which have been made current by quotation.

II. The question arises whether there was not a totem system among the different tribes which would occasionally lead them to the erection of these effigies. Ordinarily, the tribal signs were exhibited in more perishable material. They were painted upon cloth and wood. They were drawn on the sides of the houses; occasionally inscribed in stone, and are, at the present day, found carved into totem posts. Thus we find them in every part of the continent. They were formerly in New York State, among Iroquois. They are now seen on the northwest coast, among the Alaskans. Possibly the animal figures which are seen carved in stone among the ruins of Nicaragua and Yucatan are designed to represent the same thing, namely, the animal worship which prevailed so extensively. This discovery in Florida is interesting, as it brings up one more locality and shows that these figures, whatever their significance and object may have been, were as widespread as animal worship or the totem system was. We throw out the suggestion, hoping that others will make it a point to seek all such effigies, that we may ascertain the extensiveness

of the territory in which they appeared and learn more about them.

We respectfully suggest that the symbolism found in the mounds be compared with that found in the relics. The animal shapes in pottery, in carved stone, in inscribed rocks, in pictures, should be brought together for comparison, and then the traditions prevalent among the tribes, studied with the same point in view.

III. In reference to the introduction of symbols and animal effigies from other continents, a few facts may be mentioned. On this point there are necessarily differences of opinion, and yet both sides should be considered.

It is well known that the chief seat of these figures is Wisconsin, and that in this State a mound has been discovered which proves, it is claimed, one of *two* things; either that the effigy builders were very ancient, so ancient that they were associated with the mastodon and the elephant, or that they were so recently emigrants from the lands where the elephant abounded, that they retained the memory or the tradition of this animal, and were able to restore its image in the earthwork.

In order to ascertain the facts in reference to this, it is now necessary for us to examine the effigies which are found elsewhere, and to search among them for traces of the same or similar figures.

*The elephant mound is so far obliterated that it can no longer be relied upon as evidence in the case. There are those who have visited the region with the express object of settling this point, but while one imagines that he sees resemblances in the obscure image which has been subject to continued leveling from the plow and from the wear of the elements, others conclude that no such resemblances can be discovered. The survey and plotting of the mounds in Wisconsin are important, because the identifying of the forms of the mounds with the effigies of the animals, will help us to to determine what animals were known. So far as investigation has been carried on, no other effigy resembling an elephant has been discovered, but the images are generally imitative of the animals formerly occupying the region.

Still there are effigies in other States which, by some, are supposed to prove an exogenous origin, as it is claimed that these present a symbolism which could not have originated on this soil.

Among the figures which have been thus referred to, is

*The cut of the elephant mound which has been used in a former paper, was through the blunder of the engraver, made out of scale, and cannot be relied upon as correct. The cut used by the Smithsonian is a better representation of the figure as it was surveyed, though it is doubtful whether a proboscis should have been ascribed to the figure.

the great serpent in Adams county, Ohio. This, by some, has been said to have embodied the old Hindoo tradition of the serpent and the egg, a tradition which is connected with the cosmogony of the east. The new measurement and description made by Rev. J. P. McLean, overthrows this theory, though another, like it, has arisen in its place. Miss A. M. Buckland,[1] in a paper read before the British Association at Montreal, claims that this serpent has striking resemblances to the serpent figure at Avebury, England, though her essay does not state very definitely in what respect the two figures resemble one another. There are earthworks in Ohio which resemble certain stone monuments in England, but they are not the great serpent in Adams county. The earthworks of Portsmouth are much more elaborate, and are more deserving of study in this connection, for here we find not only the covered ways which resemble the tortuous walls at Avebury, but we have the circles and horse shoe figures which are found in Stonehenge.

These works extend for several miles along the river, and cross the river twice, that is, the walls approach the banks of the river, showing that there was a connection between the different parts, a ferry, by canoes, having probably existed between the ends of the covered ways. There are traces also of the serpent effigy and of the sun symbol in these works, so that it proves the most striking place where resemblances are found, and furnishes the chief evidence that there was a common symbolism on the two continents.

Generally, however, the effigy mounds are destitute of any such evidence, and the more they are searched the more do they disprove the connection. The analogies which exist are more likely to be found in connection with the relics which are exhumed from the mounds, and in connection with the sculptured and inscribed figures which are at times discovered upon the surface of the rocks. The last point, namely, that of resemblance between the effigies and symbolic effigies in the mounds, and the symbolism which may be traced in the relics, has already been studied by certain archæologists in America. A recent letter received from E. Boetticher, of Germany, shows that the same idea has been entertained by European Archæologists.

On this point we shall have something to say in the future. For the present, we shall only dwell on the resemblances which are seen between the effigies found in the different parts of this country, and the animals which were peculiar to the same region. The geographical distribution of the animal effigies is here worthy of especial notice. New effigies are

[1] See Journal of Anthropological Institute of Great Brittain, Feb., '85, article by Miss A. M. Buckland.

being discovered from time to time in widely separated localities. But those which have been discovered so far, have only presented images of animals which are native to this country, and so far as we know, or at least can ascertain with any degree of certainty, do not represent either animals which belong to foreign lands, or symbols which can be ascribed to a foreign source.

THE THREE-FOLD DIVISION OF THE HUMAN RACE.

The study of Ethnology, in connection with the different racial divisions, is an old one, but needs to be reviewed as there are many facts which have recently come to light, but which have not as yet been arranged or systematized. There was a time when the superficial resemblances which are found in the complexion, shape of face, and general appearances of the person, could be taken as a basis for classification and division of the human races. The old system of Cuvier, of Blumenbach, and of J. C. Prichard, were accepted and considered as sufficient to account for all the varying phenomena. But so many changes have come in, and the divisions or classifications of the races have become so numerous, that it is now difficult to fix upon any system and consider that as the established one.

A few words here in reference to these methods of dividing the races may be in place. The history of ethnology is as follows: The first method or that which was followed by the earliest ethnologists, was derived from a study of the color of the complexion. This gave rise to the continental division. The second was the method which was introduced by Camper and Blumenbach. This was based upon the facial angle. The difficulty with this system was that the angle could not really be accurately measured. It is however, a test which is still in vogue, and has the authority of Broca, Topinard and Welker.

A third method was that introduced by J. C. Prichard. This was the method of studying the face as viewed from the front, and dividing the races according to the shape of the face; those having the pyramidal head are placed in one family; those having angular faces and high projecting cheeks, placed in another family; those who have the oval face, are placed in a third family.

Fourth, the method of studying the human countenance, with a view to the shape of the eyes, whether oblique or horizontal, has been adopted by some. In connection with this is the prominence of the zygomatic arch. These tests, namely the shape of the face, the zygomatic arch, and the orbicular cavities, are structural, and are legitimate grounds of study. This is the fourth method.

Fifth, the proportions of the pelvis and the limbs, and the relative length of the arm and general stature has been studied with a view to ascertain the structural differences between the races. The European has an oval; the American round; the Mongolian square; the Negro a wedge shaped pelvis.

Sixth, the shape of the skull has been studied with a view to determine the races. The skulls are measured, and their longitudinal and transverse diameter are obtained, and their relative length taken as the index. According to this system of classification we have a three-fold division of the race: 1, The Dolico cephalic or long skulls; 2, Meso cephalic or medium skulls; 3 Bracho cephalic or short skulls. This three-fold division is one which brings the linguist and ethnologists into common ground, although the correlation between the shape of the skull and the manner of speaking, or the method of constructing languages, has never been carried out. It is however a structural test, and has this advantage, that it answers for the prehistoric races as well as the historic.

Seventh, the capacity of the skull is another test of ethnic affinity. According to Peschel, the capacity in cubic inches of the different races is as follows: Australian, 81.7; Africans, 86.2; Asiatics, 88.7; American, 89.0; Europeans, 92.1. This seems to be the most reasonable and reliable division, as it gives the prominence to the organic growth of the brain, which is the distinctive peculiarity of the human race. Yet there are difficulties in this, for the Neanderthal skull and some others, which are supposed to be the lowest or most ape-like, have internal capacity quite equal to many of the highest European skulls.

This system is a good one, especially for the student of prehistoric archæology. Skulls can be measured. Shot has been used and proves to be the most satisfactory. A series of centimetres would be convenient for the standard, as these give the fractions, and the cubic measurements are generally written in two ways, the scale of inches, and the centigrade scale. The difficulty with all these systems, has been that there were no specific or definite standards of measurements, as the points from which to measure differ with every new investigator. The methods have also varied with different authors; some taking one standard and some another, but no two original investigators uniting upon the same method. There has been great liability to go astray on account of these diverse and conflicting views. This liability has appeared, especially with those who take up the subject from second-hand. Gentlemen who are engaged in verifying facts, acknowledge that there are difficulties in the way of every system. They acknowledge that there are wide differences between man and the animals, and that no discovery has really been made which fills up the gap. The inferior writers have however taken it for granted that the difficulty could be easily overcome.

This brings us to a second point. The problem now before ethnologists is as to what basis they shall adopt for their classification. Certain writers on the subject have been satisfied with taking the superficial resemblances, and to classify the races according to these. In this way we have the divisions given by Prof. Winchell on the basis of color, into white, black, brown. This is hardly satisfactory however, for the effort is to find the structural qualities which shall show the actual organic growth and development. There have been several systems which were based solely upon the color or complexion, but the indefiniteness of such systems has brought much confusion into science.

The structural differences have therefore come to be recognized as furnishing the best basis of classification. These are as follows :

I. Those which are found in the osseous facial apparatus. Under this system there are three or four methods of viewing the subject; 1st, that which looks at the face as a profile, the size of facial angle determining the race character. There are however, several methods of measuring the angle, and it has been found that great differences in measurements exist among the same people.

The term prognathic expresses the thought with many, as certain races have projecting jaws, and these are regarded as the inferior people. Haeckel considers that the lower races are prognathic, but that as man ascends in the scale, the animal characteristics disappear, and the human form and face become marked by other peculiarities, such as the erect statue, high forehead, and general symmetrical shape of limbs and features.

II. The character of the hair. It is very remarkable that the mere section of a human hair should be used to decide so general a subject as the division of the human family. Such, however, is the case. Many of the best ethnologists, such as Haeckel, Topinard and others, depend largely upon this as a reliable index and place it on a level with the color of the complexion and the nasal or facial angle. The stock divisions are made according to this standard.

III. A third standard is one which depends upon the proportions of the skull. This is, however, a standard which proves to be of doubtful utility, especially when applied to the generic divisions. Quatrefages maintains that almost all Negroes are dolicho-cephalic, that nearly all Yellow races and most of the American Red races are Mesaticephalic, but the Whites are both Brachycephalic and Dolichocephalic, the extremes being frequently seen in the same locality.

Dr. Topinard's classification is as follows:

1st, According to the section of the hair; 2nd, According to the nasal index; 3rd, According to the proportions of the skull; 4th, According to the color of the complexion, including the various shades, as well as the mere positive colors; 5th, According to the size of the body.

His classification, according to the hair, is as follows:

1. Hair curled or wavy, oval in section. Europeans and Nubians.

2. Hair straight, round in section. Yellow and Red races of Asia and America.

3. Hair nappy or spiral, section elliptical. Negro races of Africa.

His classification, according to the facial angle, corresponds to this, and is as follows:

1. Leptorhines index 69° or less, white or Lencoid races. Anglo Scandinavian, Celts and Semites.

2. Mesorhines, nasal index 70° to 80°. Yellow races (Xanthoid) Eskimo, Red-Skins and Yellow races of Asia.

3. Platyrhines, nasal index 82° and more. Black races. Melanoid. African Negroes.

Topinard uses the skull as a race index, but relies upon it only

in classifying the subordinate divisions or branches, and does not regard it as a stock sign at all. According to the cranial index, the races are divided by Dr. Topinard as follows:

I. White races	Dolicho	Anglo-Scandinavians, Franks and Germans. Fins of one type, Mediterraneans.
	Mésati	Semites, Berbers, Egyptians.
	Bráchy	Celto-Slavs, Ligurians, Laps.
II. Yellow races	Dólicho	Eskimo, ancient Tehuelches, some Americans, Santa Barbara, Micronesia here and there; in Asia here and there, Melanesians.
	Mésati	Polynesians.
	Bráchy	American type, Alaska Siberia, Mongols, Mantchoos, Indo-Chinese Dravidians, Thibetans, Malay.
III. Black races	Dólicho	Australians, Veddahs and congeners, typical Melanesians, African Negroes, Bushmen.
	Mésati	Tasmanians, Mandingos, Haoussas.
	Bráchy	Negritos of Malaysia and the Andamans.

Topinard makes further distinctions by describing the skulls in all their minute characteristics and has given the following tables of definitions as applied to the crania:

Acrocephaly, high skulls.
Oxycephaly, in shape of sugar-loaf.
Platycephaly, flat skulls.
Chamæcephaly, low skulls.
Stenocephaly, narrow skulls.
Trochocephaly, spherical skulls.
Macrocephaly, large skulls.
Microcephaly, small skulls.
Plagiocephaly, oblique skulls.
Cymbocephaly, with hollow bregma.
Scaphocephaly, with keel-shaped crests.
Sphenocephaly, wedge-shaped skulls
Trigonocephaly, triangular skulls.
Pachycephaly, skulls with thick walls.

The application of the color index to the divisions of the human species previously considered, results as follows:

Combining this mark with all previously mentioned, Dr. Topinard groups the races studied as follows:

Color and Nasal Index.	*Hair.*	*Cranial Index*	*Skin Color.*	*Height.*	*Races.*
White sub-species. Leptorhine	Wavy (oval section)	Dolicho-cephalic	Blond	Tall	Anglo-Scandinavians
			Ruddy	Tall	Fins, type 1.
			Brown	Short (relative)	Mediterraneans
		Mesaticephalic	Brown	Short (relative)	Semites, Egyptians
Yellow sub-species Mesorhine	Coarse, straight round-section, long on the head. body glabrous	Brachy-cephalic	Brown	Short	Laps, Ligurians
			Chestnut	Medium	Celto-Slavs
		Dolicho-cephalic	Yellow	Short	Eskimo
			Reddish	Tall	Tehuelches
		Mesaticeph-alic (.76)	Reddish	Tall	Polynesians
		Brachy-cephalic	Reddish	Tall	Redskins
			Yellow	Short	Yellow race (of Asia)
			Yellow'h	Medium	Guaranis
			Olivish	Short	Peruvians
Black subspecies Platyrhine	Bushy (oval section)	Dolicho-cephalic	Black	Tall	Australians
	Wooly (elliptical section)		Yellow'h	Very short	Bushmen
		Dolicho-cephalic	Black	Tall (eyebrow salient, nose deep at the root)	Melanesians
			Black	Tall	African Negroes
		Mesaticephalic	Black	Medium	Tasmanians
		Brachycephalic	Black	Short	Negritos

The union of the several standards in one, by Topinard, is a triumph of science, and worthy of especial attention.

We are indebted for this and the preceding tables to Prof. Mason, who has given some valuable suggestions in the last number of the American Naturalist. He says:

"It will be readily seen that the cranial index in its three branches applies to each of the three divisions of humanity (sub-species), the significance of which seems to be that the tendency to pass from one to the other belongs to the whole species rather than to any of its three divisions."

Peschel, the best authority on the subject, makes all the physical characteristics the basis of classification as follows: I. The proportions of the skull; II. The human brain; its weight and size; III. The facial apparatus; IV. The proportions of the pelvis and limbs; V. The skin and hair; VI. He also takes the linguistic characters, and VII. The social and religious stages of development, including VIII. The system of relationship, and IX. The religious systems as traits which mark the different races.

The great question is, how are we to divide the races? The linguists have retained the three-fold divisions, but ethnologists until quite recently, have discarded it and adopted other systems. Will they come back to the three-fold division ?

Cuvier divided races into three, namely, the Caucasian, Mongolian and Ethiopian, corresponding apparently to the three-fold divisions recorded in Genesis as descendants of the sons of Noah. C. H. Smith also makes a three-fold division of the race, using the hair as the test, as follows : I. The wooly haired or tropical type. II. The beardless or hyperborian type. III. The bearded Caucasian type.

Linnæus established a continental division: American, European, Asiatic and African. Count de Buffon thought that there were six races: Hyperborean, the Tartar, the Southern Asiatic, European, Ethiopian, American. Dr. Pickering has concluded that there were eleven races of men, but classified them under a four-fold group, making color the basis of the general divisions, but physical characteristics as race signs. His classification is A. White; 1, Arabian; 2, Abbysinian. B. Brown; making 3, Mongolian; 4, Hottentot ; 5, Malay. C. Blackish Brown; making 6. Papuan; 7, Negrillo ; 8, Indian; 9, Ethiopian. D. Black ; making 10, Australian ; 11, Negro.

Prof. Broca has the following classification : Division, Vertebrata; Class, Mammalia; Order, Bimani Genus. Homo ; Species, Homo, Varieties. I. Caucasian; II. Mongolian; III. Malay; IV. American.

Under the I. Caucasian race he includes the (1), Caucasian family; (2), the Celtic; (3), the Germanic ; (4), Arabian ; (5), the Libyan ; (6), Nilotic; (7), Indostanic.

Under II. Mongolian; (8), Chinese; (9), Indo Chinese; (10), Polar; (11), Mongol-Tartar ; (12), Turkish.

III. Ethiopian; (13), Negro; (14), Kaffir; (15), Hottentot; (16), Australian; (17), Alforian; (18), Oceanic.

IV. Malay; (19), Malay family; (20), Polynesian family.

V. American race; (21), American Indians; (22), Toltecs.

Lastly, Oscar Peschel has made a seven-fold division, depending upon the physical characteristics for his classifications, as follows: Peschel's classification is as follows:

I. Australian; II. Papuans; III. Mongoloids. 1, Malay; 2, Southern Asiatics; 3, Corean Mongolians of the north; 5, Northern Asiatic; 6, Behring's Nations; 7, American Aborigines. IV. Dravidics; V. Hottentots; VI. Negroes. 1, Bantu; 2, Soudan; VII. Mediterranean race. 1, Hamites; 2, Semites; 3, Indo Europeans. It is the same as that which Winchell adopts as the basis of his theory, and is virtually the one which Haeckel has advanced.

The objection to this system is that it classifies all the American races together as one, and apparently makes them inferior to the Negroes and Hottentots, not to say the Dravidic races of India.

The linguists have always held to the three-fold classification, having divided the languages into the three stocks or families: 1, Aryan or Indo European; 2, Semitic; 3, Turanian. Geographers have favored the continental division: 1, Australian; 2, African; 3, Asiatic; 4, Polynesian; 5, American; 6, European. The common division has been one which combined the geographical with a supposed racial classification, the Asiatic being divided into two; Mongolian and Malay. This classification has prevailed for a long time. And yet the three-fold division is consistent with it, the geographical corresponding to the linguistic, and the old classification into Aryan, Semitic and Turanian, still continuing in vogue.

Prof. Winchell has adopted Peschel's classification, but has given a new interpretation to it, having modified it to suit himself.

His theory is, that the white race is the one which is spoken of in the Bible, and this race divided into three, compose the present inhabitants of the civilized world, or historic nations. All the other branches of the human family, including the so-called Turanian, and Allophylian and all the dark, or colored people of the earth he considers to have been pre-Adamic.

In this classification he has maintained that there are three types: I. The White; II. Brown; III. Black. The White or Mediterranean race he divides into three: Blondes, Japhetites, Aryans; Brunettes, Semites, Sunburnt family, Hamites. II. The Brown races he divides into two families: 1. Mongoloids including: (1), Mongolians; (2), Malays; (3), American; (4), Altaic Chinese, etc. 2. Dravidic including Dekkan, Chingalese, Munda family. III. Black races: 1. Negro race; (1), Bantu; (2), Soudani, Hottentots; (1), Koi Koi; (2), Bushman; (3), Papuan; (4), Australian.

Prof. Winchell's book shows considerable research, but does not establish a system, for the three-fold or tripartite division seems to be deeply founded in the very constitution of the human being, and must be traced further back than to the white race, and is one which preceded history.

THE DARWINIANS IN AMERICAN ARCHÆOLOGY.

The Darwinian theory has long been a disturbing force in the various departments of science, but in none is it making more havoc than in that of American Archaeology. While in other directions, such as biology, zoology and ethnology, new adjustments have been made which have proved a positive benefit to those engaged in the special study, the changes and effects here produced are not such as to secure confidence. Thus far, the theory has given rise to only crude and confusing speculations. Especially has this been the case in craniology.

It has been the ambition of every novice to find some skull which should be as ape-like as possible. The American races have been studied, and the pre-historic remains have been sought for to make out the theory. It has been maintained that the flattened tibiæ, which are peculiar to all hunters, have been signs of ape-like qualities. Skulls with thick frontal bones and retreating foreheads have been considered as Simian in character, and so the occidental specimens are brought out as if they were standards from which to judge whole races. There is one singular point which is overlooked. It is said that the origin of the race is to be found in the lower animals, and the home of those animals was in the Indian ocean. American students have taken up with the last theory which science has advanced, and have been endeavoring to show the ape-like character of many of the aborigines of this continent. They have, however, been led astray by their own theory. We consider that the skulls which have been found among the mounds are by no means primitive or ancient, yet every new skull which is brought out is examined with a view to ascertaining if it is not the missing link. Occasionally a specimen is found, in which the retreating forehead, the thick frontal bones, and the broad animal development of the base are seen, and from these traits it is concluded that the man was peculiarly ape-like, and yet it might be that this very skull was worn by an Indian of a modern race. These occasional specimens have given rise to many speculations. Many a book has been written within the last ten years in which the idea of man's descent from the lower animals has been taken for granted, and the facts and discoveries have been interpreted by this theory. Some of these books, notably that of McLean's, contain repulsive pictures, called the Neanderthal man, and the object is dwelt upon as if it were an ideal, in which the author takes great delight. Others, and among them Winchell's Pre-Adamite man, give a very perverse and untrue pictures of the negro faces, and make the resemblances between these faces and the gorillas very striking. It would seem, then, there was an undue anxiety to make out a case.

In reference to this point we would say that the unity of the race seems to be acknowledged by most authors, but the difficulty is to reconcile the discrepancies in the theory. Some, to be sure, have maintained that man may have had an origin in different localities, but the opinions of Morton and Agassiz are now rejected, and the majority are agreed as to the question of the unity of the race, and with one or two exceptions look also to the southern portion of Asia as the starting

point. The exception to this rule is a writer who seems to delight in advancing startling theories, and to catch at popular notions, and write for effect; we refer now to Mr. Ignatias Donnelly and his work on Atlantis. We do not understand that Ethnologists have accepted his theory, for the burden of proof is all against it. The lines of migration, if traced out by the surviving specimens of the early races, prove to have been from a centre farther east, rather than from this Island in the midst of the Atlantic Ocean. There are to to be sure, a few relics on this continent and in Europe which would indicate either a common origin or an intruded art; and yet the development of art on parallel lines might account for the majority of these specimens. In reference to the traditions, the opinion seems to be arising that migratory lines can be traced across the North Atlantic. The recent book by Mr. Charles Leland has given a fresh start to this line of enquiry. Possibly the traditions may lead the ethnologists to trace the origin of the American races to a European source, rather than to the Asiatic, and the system which has for so many years placed the American races with the Mongolians may need to be revised, but these traditions do not point to Atlantis as the starting point, nor do they indicate any ape like origin of the human race.

Haeckel's theory is that the race originated in a sunken continent in the Indian Ocean.

The fact is however, that the region indicated, geologically speaking, has no existence, and there is no reason for supposing that it ever did exist. It would be much more reasonable to suppose that the highlands, such as are found in the Himalay mountains, were inhabited by a primitive people, as this would be naturally the oldest part of the globe, or the earliest to appear. It is purely a work of imagination, to describe a continent which once existed and lies now sunken beneath the waters of the ocean, and in this central point to place the original home of the human race, and then decide that in that unknown locality the descent of man from the lower animals occurred. The idea seems to be, however, that in some period in which these imaginary continents existed, there was spread over the whole world, and especially over the continent of America, a certain imaginary low formed race; a race which has left its remarkable skulls and skeletons in the caves and caverns. This wave of human population spread so gradually that the remote regions have retained the tokens, but the region which was submerged, drew down with it all traces of this extinct race, and only the survivors can be seen in the living inhabitants of Australia and Africa, whose physical organizations are supposed to be so inferior. The comparison between the skulls and skeletons of the cave dwellers and the inhabitants of the tropics, do not, as yet, prove the theory to be correct. Even if it did, we question whether Ethnologists will find any specimens of this primitive stock of the human family in America. The absurdity, then, of taking mound-builders' skulls as evidence of this theory of the descent of man, will be seen. No thoroughly scientific student would look so near the surface for any specimen of the kind. We consider the theories and speculations which have arisen over certain discoveries as

very crude. The flattened tibiæ found on the river Rouge, and skulls, with thick bones and flattened foreheads, which are sometimes found in the mounds, are by no means specimens of this primitive race; for they are too near the surface and evidently are too modern for this. The discovery of skulls in the auriferous gravels of California might more reasonably be interpreted as proving man's great antiquity, but can not be accounted for on the theory of Haeckel and others of his school.

The Calaveras skull is by no means inferior in its character. By all standards of measurement it is proved to be quite equal to the skulls of the present living races of aborigines, and fairly judged, must be considered as superior to many of the skulls which are upon the surface. It would seem also that the relics found in California which are associated with this skull, and which are discovered at various depths, are also of a superior order. Ethnologists find it difficult to reconcile the conflicting theories, but they find it more difficult to reconcile the facts with the Darwinian theory.

NOTES FROM THE FAR EAST.

By Prof. John Avery.

The Pigmy Races.—In connection with Ktesias' account of a diminutive race of men in the interior of India, to which we referred in the last number of this journal, we may give a brief outline of the evidence, ancient and modern, of the existence and distribution of races of men much below the average stature, as it has been collected by the eminent French anthropologist, M. Quatrefages.

Our first informant, Homer, speaks of the cranes, in their winter migration, as bearing war and death to the pigmy race. This must have been in Africa, since the poet knew well that the cranes passed the cold season there. Aristotle, without alluding to any antagonism between the cranes and the pigmies, places both at the marshes in Upper Egypt, near the sources of the Nile, as these were understood in his time. The same writer speaks of their living in caves, and having a liliputian breed of horses. Herodotus tells of some adventurers who undertook to explore the desert of Lybia. After traveling across it in a westerly direction for many days, they came to fruitful fields, where they were set upon by a multitude of little men, who carried them off to a city inhabited by black people, on the banks of a river, which must have been the Niger. Pliny does not hesitate to accept the marvels current at his time, and locates the pigmies now in Thrace, now in Caria, then in India and, lastly, about the Nile Marshes. He enlarges upon Homer's account, and tells of pigmies in India who are not more than twenty-seven inches in height, who ride upon rams and goats, and every year make an expedition to the sea-coast, where they feed on the eggs and young of the cranes. They live in huts made of mud, feathers and egg

shells. Pomponius Mela, a contemporary of Pliny, remarks that a race of dwarfs once lived on a recess of the Red Sea, but became extinct on account of their wars with the cranes. The basis of fact in these statements of Greek and Roman writers, which accords with modern researches, is that there have been from the earliest times, races of diminutive men living in South-eastern Asia and Central Africa. M. Quatrefages has proposed for the Asiatic dwarfs the name Negritos, and M. Hamy suggests the term Negrillos for those of Africa. These names, equivalent in meaning ("little negroes") but slightly differing in form, conveniently distinguish locations. The Negritos form a population extending, according to the views of the French scholar, "from the south-eastern regions of New Guinea in Melanesia to the Andamans in the Bay of Bengal, and from the Malay Archipelago to Japan. On the continent these tribes are scattered about from the Malay peninsula to the foot of the Himalaya in Kamaon, and from the mountains of Assam to the right bank of the Indus in Daman and Beloochistan." It is to the last part of thia statement, that a negroid element exists in the population of India, that scholars will most generally object. Still, it must be admitted on all hands, that there is an ingredient in that population which is hard to account for on the common theory of a Mongoloid origin. M. Quatrefages divides his Negritos into two sub-races: The Eastern or Papuan Negritos and the Western or Negritos proper. The former, whose center is New Guinea, are inferior in development to the true Negritos, of whom the Aëtas and Mincopies are types. As an indication of the stature of these dwarf peoples, we may say that the measurement of a considerable number of individuals gives a mean height of about 1m 416.

In order to complete the subject, it is necessary to speak of the Negrillos, whose existence is as certain as that of the Asiatic dwarfs, though it has not been proved until very recent times. Without detailing the accounts of travelers, it appears that, beginning with Senegambia on the western coast, there are dwarf populations extending across the continent to the sources of the Nile in the far east. The most interesting of these are the Akkas, who were discovered by Schweinfurth in a region about 3° N. lat. and 25° E. long. Several of these people have been brought to Europe, where they have been under scientific observation. The mean height of both sexes is about 1 m 356, which is considerably less than that of the Andamanese, and below even that of the Bushmen. They are also remarkable for a large head upon a long, slender neck, and greatly projecting jaws with protruding lips. The upper limbs are rather long in proportion to the lower ones, and the hair is woolly. They are active and courageous, and in procuring subsistence by the chase, are not afraid to attack the elephant with their diminutive spears. Their intelligence is not inferior to that of uncivilized peoples generally. Two young Akkas who were educated in Italy, made quite as rapid progress in study as European children ten or twelve years of age. They acquired a good knowledge of reading, writing and arithmetic, and one of them was taught to perform difficult pieces of music on the piano.

It appears, then, that the ancients were not wholly astray in their accounts of the Pigmies. Their chief mistake was in locating them too near home, which is not strange, considering their imperfect acquaintance with geography.

KTESIAS, the court physician of Artaxerxes Mnemon, was the first Greek to devote an entire treatise to the subject of India. His residence of about seventeen years at the capital of Persia gave him an opportunity to learn about the productions and inhabitants of the country he describes, which, if he had used it with diligence and critical skill, would have made his statements invaluable at the present time; but so intent does he seem to have been upon astonishing his readers with unheard-of marvels, that even a credulous antiquity hesitated to believe him. All that remains of his Indica is an abridgment of Photios, and brief extracts in the writings of Aelian, Strabo, Aristotle and others. These fragments have been brought together and translated, with notes, by J. M. McCrindle, in the tenth volume of the Indian Antiquary.

In Ktesias' account of the people of India, we recognize without difficulty the aboriginal tribes. One of these lives in the mountains beyond the sources of the Hyparkhos River, probably the Himalayas; they do not work, and neither eat grain nor drink water, but subsist on the milk of their flocks and herds. Their complexion is swarthy. Another is called Kynamolgoi, "dog-milkers," or Kynokephaloi, "dog-headed." They are also black, have the teeth, claws and tails of dogs, and though understanding the language of the other Indians, can express themselves only by barking. They dwell in caves, and wear the tanned skins of the beasts killed in the chase, by which they principally subsist. They keep huge dogs to protect them from the attacks of wild oxen, and are accustomed to milk the bitches, hence the name. They perform military service for the King of the land, and receive from him presents in return. Their home in the mountains secures them from subjugation by their neighbors, with whom they carry on a limited trade in the products of their forests. It is curious that the corresponding Indian name, Sunamukha, "dog-faced," occurs in Hindoo literature, and is applied to a tribe living on the Indus. Ktesias does not forget to speak of the ubiquitous Pigmies. He locates them in the center of the country, and says that they are but one and a half to two cubits in height and of a swarthy complexion. They allow their beard and hair to grow very long, and, when it has reached their feet, bind it about their loins with a girdle and make it serve for a garment. They excel in the use of the bow, and are found in the retinue of the king. Subtracting from these accounts what is evidently fabulous, there still remain many features—the undersize, the dark hue, the mode of subsistence, the skill in archery, the secluded abode—of the primitive settlers of India.

GOLD DIGGING ANTS.—Among the marvelous stories told by classic writers regarding India, hardly one has gained wider currency or invited more various attempts at explanation than the tale of the gold-digging ants, as related first by Herodotus. He says that there is a tribe of Indians living north of all others, and near

the city of Kaspatyrus, and country of Paktyika. These people, who are warlike in disposition, despatch parties to a desert region, for the gold found there. This is thrown to the surface by ants that burrow in the ground. These ants are in size between a fox and a dog, and can run so swiftly that nothing can outstrip them. The Indians cautiously approach on their swiftest camels, and hastily filling sacks with the auriferous sand, retreat with the utmost speed. If the ants discover them they give chase, and it is a chance if the robbers all escape with their lives. The problem to discover some gold-bearing region in or near India, and then some burrowing animal large enough to bring the precious metal to the surface, and swift and fierce enough to defend it, has been a great puzzle to the commentators. As to the region, the name Kaspapyrus, another reading for Kaspatyrus, suggests the name of the old capital of Kashmis, Kashyapapura; and Strabo says that it was the Dards, who are now found in the same vicinity, who carried off the gold. As to the ants, all suggestions that they were white ants, hyenas, jackals, foxes, marmots, or other animals, fail in some of the conditions. The true explanation was probably discovered, when in the years 1865–8, the Pandits sent out by the British government to explore Tibet, found some gold fields on the head-waters of the Indus, still worked by Tibetan miners. The piercing cold of the winter, the season when they prefer to work the mines, makes it necessary to dress in furs; and to escape the icy winds they are accustomed to place their felt tents in pits seven or eight feet below the surface of the ground. If the same fields were worked fifteen centuries ago, as seems probable, the animal-like habits of the miners might well give rise to the famous ant story. Then, as now, they doubtless suffered from the plundering incursions of their more active neighbors on the west, when they would defend their property with the aid of their huge mastiffs, which naturally came to be confounded with their masters in the legend.

The explanation of the story that we have outlined was conjecturally made by Prof. Wilson, before the journey of the Pandits, was afterward referred to by Sir Henry Rawlinson, in 1869, but was first laid out in detail with all the corroborating evidence by Prof. Schiern, of Copenhagen, in 1870.

LIBRARY AT ALEXANDRIA.—It has been generally believed, though doubted by some, that when the Arabs under Amru, captured Alexandria, in 642 A. D., they burned the great museum library there; and that it was so large that it sufficed to heat the four thousand baths of the city for the space of half a year.

In the July number of the Indian Antiquary, Mr. Rehatsek has brought together all the independent evidence we have on the subject, and concludes that the charge against the Moslems is not sustained; and that, had they been fanatically disposed, there was not at the time any great library at Alexandria to burn. The earliest authority for the story, and the one upon whom all later writers have rested, is Abul Faraj, a Syro-Christian author of repute, who lived about six centuries after the event. His principal work was a chronicle of secular and ecclesiastical history, written in Syriac, from which he afterward compiled an abstract in Arabic.

The latter work first appeared in print in 1663, under the title, *Historia Dynastiarum.* Many statements appear in this which are not found in the larger work, and which may have been added by the author, or interpolated by a later hand. One of these is the story of the burning of the Alexandrian library. To offset this suspicious account, we have the fact that two earlier writers, who were in a better situation to know the truth, do not mention the circumstance. The first is Eutychius, who died as Patriarch of Alexandria, in 940 A. D. He describes minutely the capture of the city by the Arabs, and, being a man of literary culture, would hardly have been silent about the destruction of a great library, had it occurred. The second is Al-Makin, who wrote three centuries later, in the same place, and on the same subject, but likewise recounts nothing of the loss of the library.

The story told by Abul Faraj, or some later writer, who lived in Mesopotamia, far from the scene of his narrative, may have originated, as Mr. Rehatsek thinks, from Byzantine authorities, whose attitude toward their Mohammedan conquerors was one of bitter hostility. As to the existence of such a vast collection of books at Alexandria at this time, it appears that, about 114 B. C., the cultivation of learning was much discouraged by the expulsion of scholars from the city by the reigning monarch. In 47 B. C., the museum, with a great part of its contents, was destroyed by fire, and so insignificant did the library become, that when Strabo visited Alexandria, twenty-three years later, it seems not to have attracted his attention among the wonders of the place. From this time on, notices of the Academy and its library become more infrequent; and, though the destroyed collections were afterward partly replaced, there is no evidence that they ever reached their former magnitude.

NOTES ON CLASSICAL ARCHÆOLOGY.

By Prof. A. C. Merriam.

The New Year's Day of Different Nations.—In the last number of the *Revue Archéologique* for 1884, M. Clermont-Ganneau publishes a number of Greek inscriptions from various parts of Syria, in one of which he recognizes a new chronological era, or more strictly speaking, year, which belonged to Damascus. The inscription says that a certain structure was completed in the 689th year, according to Damascus. This, calculated according to the Seleucidan era, gives the year 377 A. D., which accords sufficiently with the epigraphic character of the inscription and its probable epoch. But this era of the Seleucidæ is so common that its name is habitually omitted, and it might seem that in the present instance the era of Damascus is mentioned to distinguish it from that of Bostra, which began to reckon from A. D. 105, instead of 312 B. C., like that of the Seleucidæ. However, it ought to be distinguished from the last, and this distinction M. Clermont-Ganneau finds accounted for in a remark of Simplicius (Comment. in Physica

Aristotelis, v. p. 205 a.), where he says that the Athenians began their year with the summer solstice; the inhabitants of Asia with the autumnal equinox; the Romans at the winter solstice; the Arabians and the Damascenes at the spring equinox. Hence, as the Seleucidæ fixed their new year's day on October 1st, the Damascenes would begin to reckon on the 22d of March, and their year would differ by nearly six months from the Seleucidan. This may have an important bearing on disputed dates.

DIVINATION BY DICE-THROWING.—G. Cousin, in the December number of the *Bulletin de Correspondance Hellénique*, publishes an inscription from Phrygia, in which the longest account which we possess is given of astragalomancy, or divination by throwing dice. The dice used were the astragali, carrying the numbers 1, 3, 4, 6, and five were employed at each throw. Twenty-three different combinations out of the fifty-three that are possible, are given in the inscription, in a roughly metrical form, and each is headed with the several numbers cast, with the sum total of these, and the name of the divinity under whose protection the throw is supposed to rest. For instance:

"6, 1, 1, 1, 1,—10. (Throw) of the most powerful divinity.

"A six and four aces: It will be better for you to pay the vow you have to the divinity, if you expect to accomplish what you have in mind; for Demeter and Zeus Soter will aid you."

"1, 3, 3, 4, 4,—15. (Throw) of Zeus Soter.

"An ace, two threes, two fours: Do what you intend with full confidence. The gods have shown herein fair oracles ready to hand. Do not waver in purpose, for you shall receive no harm."

"1, 6, 4, 4, 3,—18. Of Zeus of the Thunderbolt.

"An ace, a six, two fours, and a three: You will not accomplish to your mind what you intend; for it is neither profitable for you to go abroad, nor if you buy will you find it lucrative."

"OBADIAH'S SEAL."—The *Revue Archéologique* appears with a double number for the opening of the year, and contains, besides a valuable *Chronique d'Orient* by S. Reinach, several other articles of interest. M. Clermont-Ganneau opens with an account of a seal from Syria, bearing a Phœnician inscription, which reads: "Belonging to Obadyahou (Obadiah), servant of the king (*obad hammelek*)." The characters are archaic and can easily belong to the eighth century B. C., and the expression must be one attributable to some functionary of a king of Israel. M. Clermont-Ganneau rejects the possibility of reading *Ham-melek* a proper name, and insists that the general sense must be: "Belonging to Obadyahou, a royal officer." He will not assert that the seal once belonged to the royal officer Obadiah, of I. Kings, xviii., but thinks that it might very well have done so, as the coincidences are so singularly striking.

PECULIAR BRONZE STATUETTES.—G. Babst also makes a report on some excavations made in the Caucasus mountains, the Daghestan and adjacent regions. In one place he found graves in which the men were inhumed with their weapons, but the women were burned, and their ashes placed in cloth bags with their

jewelry. In another he discovered a number of small statuettes of bronze, rudely wrought. They are represented standing, in two attitudes, either with the hands crossed over the stomach, or raised to their ears, to which the thumbs are applied with the fingers outspread, a gesture very much resembling that immortalised by Irving, in his Knickerbocker History, when he is relating the legend of Anthony, the trumpeter, only the thumb there was applied to the nose instead of the ear. What the significance was to the inhabitant of the Caucasus, we have no such veracious historian to describe to a waiting world.

A MAEONIAN GOLDSMITH'S MOULD.—In his introduction to Schliemann's "Troja," Prof. Sayce, speaking of the goddess "Ate," says (p. xviii.): "A leaden image of this goddess, exactly modelled after her form in archaic Babylonian and Hittite art, and adorned with the *swastika*, has been found by Dr. Schliemann among the ruins of Ilion; that is to say, the second of the prehistoric cities on the mound of Hissarlik (see *Ilios*, Fig. 226). Precisely the same figure, with ringlets on either side of the head, but with the pelvis ornamented with dots instead of with the *swastika*, is sculptured on a piece of serpentine, recently found in Maeonia and published by M. Salomon Reinach in the *Revue Archéologique*. Here by the side of the goddess stands the Baylonian Bel, and among the Baylonian symbols that surround them is the representation of one of the very terra-cotta 'whorls' of which Dr. Schliemann has found such multitudes at Troy. No better proof could be desired of the truth of his hypothesis which sees in them votive offerings to the supreme goddess of Ilion." And again (p. xxii.): "The ornamentation of the gold knob, given in this volume under No. 38, exactly resembles that of the solar disk on the Maeonian plaque of serpentine, of which I have before spoken." The statement that the plaque was then published was somewhat premature. It has just appeared in the number of the *Revue* above mentioned, with a commentary by M. Reinach, who had supplied Prof. Sayce with a proof in advance. The plaque was originally a goldsmith's mould for turning out votive offerings, and is extremely interesting as exhibiting the connection of ideas of a very early period. Besides the two central figures, in a style of art where the ideals of beauty and divinity do not appear yet to have become harmonised, certainly not in execution, one sees surrounding them from the right a lion, a whorl, perhaps a second without perforation, a square figure, an "altar," and a sun-wheel with six spokes. The lion has a ring attached to his back, and M. Reinach compares it in this particular with the bronze weights found by Layard. As the altar and the sun-wheel have something similar, we may ask if these may not be intended to be used at times as separate objects to be hung upon walls as offerings, suspended from the neck as amulets, or employed for some similar purpose. The Cesnola collection contains a number of terra-cotta statuettes of this goddess, and whorls of the same general stamp, from graves at Alambra, in Cyprus, where they were found habitually in connection with the toilet articles of women. M. Reinach agrees in the main with Sayce in his explanation of the representations on the plaque, but

instead of giving adherence to the Hittite theory, he inclines like Ramsay to give the art another name, and calls it Lydo-Phrygian. In the same article M. Reinach publishes a mould representing two figures in human form standing side by side like the first, man and woman, or rather god and goddess, but of a much better style of workmanship. The advance in our knowledge of this class of art within the past twenty years, is well illustrated by the fact that not longer ago than that, this object was described as belonging to the twelfth century A. D., and as depicting the Baphomet idol said to have been worshipped by the Knights Templars before the destruction of their order. The goddess is naked to the waist, but clad below to the knees. Her hands have the familiar attitude upon the bosom, large curls fall beside the cheeks, and an enormous head-dress ornamented with geometric figures surmounts her brow. The god is clad nearly to the knees, holds his hands against his breast, and wears a ribbed conical hat, with a horn turning up at each side. While the style of both these moulds approaches that of the Babylonian cylinders, it is still so far different as to exhibit the influence, rather than imitation, of such originals.

ADDITIONAL INSCRIPTIONS AT EPIDAURUS.—Kabbadias has discovered at Epidaurus a fragment of considerable size belonging to the second stela of miraculous cures, of which a description was given in THE AMERICAN ANTIQUARIAN of September last, and a dedication in verse of seventy-eight lines, both of which ought to add something to our knowledge of this cult when published.

AN ALTAR AND STATUES AT OROPUS.—On the site of a similar temple of healing, that of Amphiaraus, at Oropus, the Archæological society began excavations last June. Numerous inscriptions had already been published from this site, but the excavations brought others to light, as well as a statue of Hercules, and the bases of other statues, one of Ptolemy and Arsinoe of Egypt, and another of Sylla, in which he is given the name of Epaphroditus which he assumed in writing to the Greeks and in the dedication of his trophies (Plut. Syl. 34). The ancient altar of the temple has been found in place, and before it rows of seats.

A CYCLOPEAN GATE.—Borings, under the direction of Kabbadias, have been made at Cephallenia, and a gate of the Acropolis in cyclopean style has been found, and within it several buildings of excellent workmanship. In the lower town two mosaics of the Roman period with geometric decorations were met with.

ANCIENT LIBRARY AT PERGAMUS.—Conze thinks that he has been able to define the position of the famous library at Pergamus, which brought parchment into such general use that the very name has come down to us from that town. In the vicinity of the temple of Athena, on the height, the bases of four statues were found containing the names severally of Homer, Alcaeus, Herodotus, and the Milesian Timotheus, a noted poet and musician of the time of Alexander. Ch. Belger suggested more than two years ago that this was the place to look for the library, and Conze has examined the subject with great thoroughness, with a comparison of the position of other famous libraries in relation to palaces and temples,

and decides that the Pergamenian Library must have been amid some remains existing to the north of the temple of Athena, behind a hall of pillars.

NAUCRATIS believes that he has discovered the site of the ancient Greek colony and emporium in Egypt, Naucratis. An inscription was found bearing a portion of the name of this town, in the vicinity of the spot he described in his report last fall, as a proper one for excavation, as the ground was covered to such a degree with potsherds that they crackled under the foot at every turn. As the subscriptions of the Egyptian Exploration Fund can not properly be devoted to excavation on a site wholly unbiblical, efforts are making to raise a special fund for the purpose.

TEMPLE AT LUXOR.—M. Maspero has been engaged this winter in clearing out the temple of Luxor, and thinks that when this is completed it will be as striking and impressive as that at Karnac.

THE WOLFE EXPEDITION.—Not much is yet known of the results of the Wolfe expedition to Babylonia. Dr. Sterrett, who accompanied Dr. Ward, fell ill at Bagdad and had to be left there. Miss Wolfe has generously arranged to defray the expenses of a trip for Dr. Sterrett, through the southern part of Asia Minor, if he is well enough to undertake it on his return. This will be the first expedition made under the special auspices of the New York branch of the American Archæological Institute, whose president is now Mr. Fredrick J. De Peyster. Dr. Sterrett's journeys in Asia Minor last year have been made the special subject of a preliminary report published by the Institute, in which a number of inscriptions are made known for the first time, bearing especially upon the geography of the districts passed through and the identification of ancient sites. Both these and the notes of the journey will be largely used by Professor Kiepert in a new edition of the maps of Asia Minor, and will assist greatly in securing a more accurate knowledge of that region.

THE POET MENANDER.—Sp. P. Lambros has found in an Athenian manuscript a large number of excerpts from Menander and the elder poets of comedy, and intends soon to publish them.

THE COUCH ON WHICH CHRIST RECLINED.—A notable article by M. Charles Diehl appears in the January number of the *Bulletin de Correspondance Hellénique* of this year, in which he describes and comments upon a discovery recently made by M. Paris, while conducting some excavations for the French school of Athens on the site of the ancient Elatea in Phocis. The original object of the work was to unearth a temple of Athena, but excavations were also conducted amid the ruins of a church of the Holy Virgin, where a slab of grey marble veined with white was found, above seven feet long, two feet wide and one foot thick. The upper face was carefully polished, as also two contiguous lateral faces, the remainder being rough. Upon the longest smoothed lateral face was a Greek inscription, not disposed as usual, longitudinally, but in short lines across the face. The letters are deeply cut and belong to a late epoch. As is customary with Christian inscriptions, this begins and ends with the sign of the cross.

NOTES ON EUROPEAN ARCHÆOLOGY.

BY HENRY PHILLIPS, JR.

A PALÆOLITHIC IMPLEMENT weighing 19 oz. was lately found in the gravel excavated in the Clerkenwell road, near the Sessions House. It is larger than the one found in the seventeenth century near Gray's Inn Lane, which is now in the British Museum.—*Nature*, vol. xxix, p. 15.

AT *Cobern*, near *Coblenz*, a Franconian burial-ground was discovered, containing many objects of interest, such as ornaments, weapons, glass and clay vases, stones with inscriptions, etc.—*Nature*, vol. xxix, p. 246.

FETICH WORSHIP IN CHINA.—In Nature (xxxi, 442) is an article from the North China Herald on above subject, showing that it still survives.

PRE-CHRISTIAN INSCRIPTIONS.—In the *Rendi Conti* of the R. Accademia dei Lincei (vol. i, Fas. 6, 15th Feb. 1885), Signor FIORELLI presented a memoranda of twenty-four discoveries made in Rome during the month of January, 1885, which consisted mostly of inscriptions in tombs, generally pre-christian.

TUMULI near *Dax*, *Hagetman & Aire* have lately been examined, and found to contain remains of all kinds, including urns for ashes, broken weapons, and objects of ornament. These tumuli have been ascribed by MM. E. Dufourcet and L. Testut to the early portions of the so-called *Iron age*, and the results of their labors have been set forth at length in the Bulletin de la Société de Borda Dax (1884), in which the belief is related that these were originally circular earth-huts, serving as habitations; that the continual deposition above them by their dwellers has at the last completely hidden the dwelling; and that the interment portion of these remains was constructed subsequently within the hut.

STONE HATCHETS IN CHINA, is the title of an attractive article in *Nature* (xxx, 515), by Josiah Edkins, full of interesting matter. One reason which he gives for the absence of much knowledge of the stone age in that country is that *its people worked in metals 4,000 years ago.* A stone hatchet found recently near Kalgan, (110 miles west of Pekin), is about five inches long, of a black stone, not heavy, and in shape resembling those preserved in the Ohio museums.

TRIANGULAR AXE AT VERONA, ITALY.—At the meeting of the R. Accademia dei Lincei, held Feb. 15, 1885, Mr. L. PIGORINI presented a curious stone object found in the *grotta dell' orso*, a neolithic station at Breonio, near Verona. It was triangular in shape, and resembled a lance-head, but its weight (1,710 kilogr.) was so great as to prohibit the idea of its ever having been used as a weapon or utensil. The implement has been deposited in the Prehistoric Museum at Rome.

NUMISMATICS IN SPAIN.—Señor *C. Pujol y Campus* has been contributing for some time to the *Boletin de la Real Academia de la Historia* of Madrid, a series of valuable papers on the *Monedas Ibericas*, in which he sheds much light upon this important and obscure branch of numismatics.

In the same Boletin (Dec., 1884) Señor *Codera* has an erudite article on the Arabic coins struck at Tudela.

SPAIN.—Near Merida, close to the railway, a number of mounds have been opened which contain sepulchres, in some of which were inscriptions, of the beginning of the seventh century, remarkable not only for their execution, but as presenting the dove as a Christian emblem.

PELASGIC AND ETRUSCAN RELICS.—M. Le Normant in a late lecture, called attention to some pelasgic remains still existing at Concilinium in Lucania.

M. BERTRAND read a paper on late discoveries of Etruscan relics in Italy and Austria.

SAHAGUN AND HIS WRITINGS.—A valuable bibliographical notice of the various MSS. and editions of the writings of *Sahagun* will be found in the *Boletin de la Real Academia de la Historia de Madrid* (Tomo vi, Cuad. 2, 1885), from pp. 85 to 124, by Señor José F. Ramirez.

FOLK LORE SOCIETIES.

SPAIN.—A society has lately been formed at Madrid under the name of *El Folk-lore Español, sociedad para la recopilacion y estudio del saber y de las tradiciones populares*, which publishes a quarterly journal, "*El Folk-lore Bético-extremeño.*" The work of this society is stimulated by its prime mover *M. Antonio Machado y Alvarez.*

ITALY.—Folk-lore is being studied at Palermo, where a journal entitled *L'Archivio per lo studio delle tradizioni populari* is published every three months.

LYON.—Prof. *Leon de Rosny* contributes an article entitled, "*La grande deesse solaire* (of Japan) *et les origines du Sintauisme*," to the Annales du *Musée Guimet* (Tome ix, No. 2). Mr. *E. Henry Carnoy* contributes to the same number a paper, "*Les Acousmates et les chasses fantastiques*," in which the tradition of the wild huntsman and his knightly train is examined into.

AUSTRIA.—In the May number of the *Polybiblion* F. S. Krauss presents a lengthy and carefully written study of the legends of witches and wood-fairies of the Southern Slavs.

VOLK SONGS IN BOSNIA.—Dr. F. S. Krauss, of Vienna, has just made an archæological journey in Bosnia and Herzegovina which has been fruitful of results. He writes us: "I have already collected 37,000 verses of Volk songs, relating to heroes; especially noticeable is the epic of Buljubasa Mujo, who, over 350 years ago, was one of the captains on the Turkish frontier. I have likewise lighted upon 300 Mohammedan-Slavisch, Turkish and Arabic MSS., an inestimable find." Dr. Krauss will soon return to Vienna with his treasures, and give the results of his researches to the learned world.

BOOK REVIEWS.

Ten Great Religions.—A comparison of all Religions, by JAMES F. CLARK, third edition. Boston: Houghton, Mifflin & Co., 1884.

The first part of this work gave Mr. Clark, the author, a great reputation as a writer upon comparative religions. The subject was then new, but since that volume appeared, has made great advancement. The second volume continues the discussion, and presents the problems which have arisen, with the opinions of the author upon them.

Mr. Clark says: "When we come to the origin of all religion and ask whence religion itself arose, there are three answers; an original supernatural revelation; a natural revelation by religious ideas planted in human nature; and the transformation of the experience of the senses into something higher by the process of evolution." The latter is according to many authors the true answer. Mr. Clark maintains that the historic religions have retrograded from a primitive monotheism to polytheism and from that to idolatry; while other authors maintain that the process has been in the opposite direction, monotheism being the last product of the evolutionary religions. This is the point in dispute and it is not to be decided until much more study has been given to the subject There are many native religions which occupy different grades, and if we take these as the basis of a theory, we should say that the process has been, from the lower to the higher, the blindest superstition prevailing among the lower and ruder people, and the more elaborate and exalted conceptions, having come later in social development. There is, however, an undercurrent in native religions which would indicate that cruelty and human despotism have attended the advanced stages, and in this respect we might say that the earlier was the purer form. There is a remarkable parallel between the native prehistoric religions of America, and the earlier historic religions of Asia, but we can not say that monotheism appeared, either in the earlier or the later stages of growth on this continent, and so we are led to question whether it existed in the earlier native faiths of the Asiatic races. The historic religions, it is claimed, by other authors beside Mr. Clark, have this peculiarity that monotheism preceded polytheism. If such were the case, we should be inclined to ascribe it to a primitive conscience which, by the means of the traditions, cast its adumbration over the races of the east. Mr. Clark takes the position that native religions tended to polytheism, but the so-called prophetic religions tended toward monotheism. Between these two he would place the historic religions, some of which were characterized by ditheism and some tritheism. This is a just distinction and one which is confirmed by the facts. The question is whether the so-called prophetic religions were not, all of them, derived from this primitive revelation. Certainly, of the six prophets or founders of religion which Mr. Clark mentions—three, namely Moses, Mohammed and Jesus, may be associated with the revealed word, Mohammed having derived many of his ideas from the sacred scriptures. The three other "prophets" are Zoroaster, Buddha, Confucius. These are more properly the founders of historic religions and should not be classed with the prophets. They are, however, later than Moses, and it is not unlikely that two of these—Zoroaster and Buddha, borrowed many things from the scriptures.

Brahmanism, is to be associated with the native religions, just as the mythologies found in the Eddas are. Mr. Clark examines the peculiar system which Müller calls Henotheism and makes it a form of monotheism. This was a system in which the powers of nature are deified and were alternately worshipped. Varuna, the heavens; Surya, the sun; Indra, the atmosphere; Agni, fire; were worshipped. Mr. Clark says, as the supreme being with the same infinite attributes, infinite spirit, having appeared embodied in every part of nature. This is a strong point, but does not quite prove that monotheism was the primitive faith. It might, perhaps, be said to prove that natural revelation by religious ideas planted in human nature faintly suggests the monotheistic conception. Here then is the point where the the three classes of religions meet, the prehistoric nature religions, having struggled for this end, the historic and humanly founded religions having dimly apprehended it and the so-called prophetic religions having brought it out in its fullness.

Historically considered, the Mosaic faith surpassed most of the others, and if we take the scripture record as a guide, we should say that the Abrahamic faith also surpassed them. The Bible is called the "book of revelation" and yet it reveals that which native religion had struggled to reach, and which historic religion had just begun to reach, and on this account may be said to be the superior of all. As the record of a prophetic religion, it comes to us as an authoritative book. It certainly raises us above the plain of the degraded and dark superstitions which have appeared in connection with nature worship. It also brings into clear light the best principles, both in morals and devotional ideas, which are contained in the humanly-founded systems, but goes far beyond any of these, in the conceptions of the divinity and in the view of immortality. Whether the historic religions have retrograded from this standard as from a primitive revelation, matters not. This fact is the same, even if the book were not prophetic, but a mere historic growth and yet its prophetic character seems to be established.

The Life of Abraham Lincoln, by ISAAC N. ARNOLD. Chicago: Jansen, McClurg & Co., 1885. 462 pages. Price, $2.00.

This is a charming book. Mr. Arnold, the author, was a life long friend of President Lincoln. He was a cultivated gentleman, and saw the excellent traits of his friend in their true light. The biography which he has written is as high-toned as could be desired. It is exceedingly interesting. and brings out the facts of Mr. Lincoln's life in a very graphic manner. He does not parade the eccentricities of this great and good man, but rather shows the virtues which he wore in disguise. The struggles with poverty, and the success amid obstacles, are dwelt upon, but the clear-cut mind of Mr. Lincoln is brought out from amid the rough surroundings like a beautiful portrait. The religious motive which ruled Mr. Lincoln throughout his life, even when there was no external profession, is also clearly revealed by the biographer. The book seems to have been written at a white heat, every part of it inspired by a sympathy with the hero, and the whole illuminated by the intense interest which the author had taken in the events as they passed. It is decidedly the best biography of President Lincoln that has been written, and deserves an extensive reading. The career of Gen. Grant comes forth incidentally, and this, of itself, should make a demand for the book.

Fichte's Science of Knowledge. A Critical Exposition, by CHARLES CARROLL EVERETT, D. D. Chicago: S. C. Griggs & Co., 1884.

Mr. Griggs has been publishing a series of German Philosophical Classics for English readers and students, edited by Geo. S. Morris. This is the third in the series. It is a 16 mo. volume and contains 287 pp. The first chapter is a biography of Fichte. The second and third contains statements of the problems before the metaphysician. The fourth to the ninth consider the subject of the "I and the me." "The not-me." The ninth treats "perception and mental processes." The tenth treats of "the world of objects and its relation to the I." As a summary, the volume is a valuable one, since it brings the elaborate system of this philosopher into a small compass and gives the reader an idea of the profound depths which are contained in the German philosophical systems. The book like all of Mr. Griggs' publications is a model of neatness and beauty.

The Naturalist's Rambles about Home, by CHARLES C. ABBOTT. New York, D. Appleton & Co., 1885.

This book is made up in part of a series of articles which had previously been furnished to various European and American journals; "Field notes," the author calls them. Some of the stories seem to be almost too good to be true, yet they are interesting and give piquancy to the narrative. The style is versatile and familiar for young scientists. The book will be attractive and will have the effect to cultivate a taste for rambling among the scenes of nature. Dr. Abbott is a good observer and has a happy way of telling what he sees. His work does not add to science but may make science more popular.

The Lenâpé and their Legends; with the complete text and symbols of the Walam Olum, a new Translation and an Inquiry into its Authenticity, by DANIEL G. BRINTON, A. M., M. D. Philadelphia: D. G. Brinton, 1885.

This work is No. V, in Dr. Brinton's well-known Library of Aboriginal

American Literature, and forms a most attractive addition to the series. The Walam Olum, or "Red Score," is the rhythmical chant, partly mythological and partly historical, in which the Lenape or Delaware Indians embodied their myths of the creation of men and animals, and their traditions of the early wanderings and wars of their own tribal ancestors. The verses of this chant were kept in remembrance by certain picture-signs, nearly two hundred in number, which were painted with red ochre on slender sticks or tallies, about six inches in length. These "record-sticks" were tied up in bundles and preserved with care as the archives of the nation. Dr Brinton has given us all the symbols, appropriately printed in red ink, each accompanied by its Lenape verse, with a literal translation and a full commentary. This introduction comprises chapters on the Algonkin and the Iroquois stocks, the Wapanachki, or Eastern Confederary of the Algonkins, the Delaware tribes, their history, religion, political constitution, arts and language, their myths and traditions, and a detailed account of the evidence relating to the Walam Olum and its character as a genuine Indian record. The volume is a storehouse of information on all these subjects, and a contribution of the highest value to the history and ethnology of our continent. H. H.

The Lineal-Measures of the Semi-Civilized Nations of Mexico and Central America, by DANIEL G. BRINTON, M. D. Read before the American Philosophical Society, Jan. 2, 1885.

On the Language and Ethnologic Position of the Xinca Indians of Guatemala, by D. G. BRINTON. Read before the American Philosophical Society, Oct. 17, 1884.

On the Cuspidiform Petroglyphs, or so-called Bird Track Rock Sculptures of Ohio, by D. G. BRINTON, M. D.

Dr. Brinton's studies have made him familiar with the languages of Central America, such as the Maya, the Nahua or Aztec and Cak-che-quel. He has in the first of the pamphlets mentioned above, given the terms which were used by these different races, for the standards of measurement. In the second pamphlet he has used the same languages to ascertain the geographical location of the different tribes. The first pamphlet is the most interesting.

NEW PUBLICATIONS.

Inscribed Sepulchral Vases from Alexandria. A. C. Merriam.

Historical Epochs with System of Mnemonics, by E. A. FITZ SIMON. New York: Taintor Bros., Merrill & Co., 73-38 Broadway, 1884.

Poems from an Editor's Table, by HUGH FARRAR MCDERMOTT. New York: G. P. Putnam's Sons, 27 and 29 W. 23d street. 1881.

The Divine Authority of the Bible, by G. FREDERICK WRIGHT. Boston: Congregational House.

Paradise found. The Cradle of the Human Race at the North Pole, by WM. F. WARREN, S. T. D. L. L. D. Boston: Houghton, Mifflin & Co., 1885, $2.00.

Mexico and the Mexicans, or Notes of Travel in the Winter and Spring of 1883, by Howard Conkling. New York: Taintor Bros., Merrill & Co., 1883, $1.50.

Fichte's Science of Knowledge, by CHARLES CARROLL EVERETT, D. D. Chicago, S. C. Griggs & Co., 1884.

The Glacial Boundary in Ohio, Indiana and Kentucky, by Prof. G. F. Wright, Cleveland, Ohio, Leader Printing Co.

THE

American Antiquarian.

VOL. VII. JULY, 1885. No. 4.

RUINS AT PALENQUE AND COPAN.

*WITH QUOTATIONS FROM CHARNAY'S ARTICLES.**

Palenque, at present an insignificant village, marks the site of very famous and extensive ruins. They are the ruins of one of America's oldest cities, and in their pristine completeness were inhabited by a Maya people. They lie within the northern boundary of Chiapas and on the very confines of Tabasco in the southern limits of Mexico. The country about is elevated above the poisonous levels of Tobasco and offers to the eye a wonderful exuberance of vegetable life which M. Morelet in his travels characterized as *le reve biblique de 'l Eden.* There, buried in the midst of a dense forest, covering an area larger than Ohio[1] or Pennsylvania, whose umbrageous solitudes are only broken by the screech of the monkey or illumined by the flash of the fire-beetle, rest the remains of one of the great Maya cities. Its very extent is hidden in the vast jungle that enshrouds it, and its mournful edifices are dilapidated by the rank growth of vegetation that invades their sanctuaries, pushes aside their stones and crumbles their tablets and inscriptions. In 1750 the Spanish Government first became aware of the existence of these ruins and in 1787 Captain Antonio del Rio undertook their examination, but not until 1822 did the world of letters profit by his explorations. In 1805, 1806, 1807 Capt. Dupaix executed the second reconnaissance, but in a similar manner his observations failed to see the light until 1834–5. Individual enterprises succeeded these as Waldeck, Morelet, Charnay, Galindo—none, however, more memorable or successful than that of Stephens and Catherwood

[1] "The whole State of Tobasco and part of Chiapas are covered with ruins."—*N. A. Review Feb. 1881. Part VI, page 187.*

"The imagination fails to realize the vast amount of labor it would involve to explore even a tithe of these ancient cities."—*N. A. Review, May, 1881. Part VII.*

* For notes on this article, see editorial.

in 1839-40. [2]Fabulous stories of the size of this city have prevailed, as its covering over 20 square miles, but neither corroboration or, indeed denial, can be given so long as the present gigantic wilderness impenetrably conceals its past limits. This region, including portions of Tobasco, Chiapas, Yucatan and Honduras, is swept by one vast and thickly woven covering of primeval forests, and doubtless numerous cities are now crumbling into silent ruin unknown, unseen, beneath its gloomy and deadly shades. Palenque was unknown to Cortez, though he passed near them, because even then its glories had become forgotten by the natives [3]The so-called palace (Fig. 1) is the principal structure and here Stephens and Catherwood remained while studying this extinct city. It is a building of hewn stone placed upon a high pyramidal pedestal or terrace of earth which was formerly faced with stone, now littering its mouldering stairs. The terrace is 40 feet high, 310 feet long and 260 feet wide. The palace looking toward the east is 222 feet long by 180 feet deep and is entered by 14 door-ways 9 feet wide, separated by piers 6 and 7 feet wide. Within, are four courts embraced within [4]corridors and communicating with groups of rooms, while its whole intricate ground plan was probably enclosed in an outer corridor which surrounded the building. The piers are faced with painted stucco and elegant bas-reliefs ornament their sides. The height of the building is 25 feet and a projecting cornice of stone gives its top architectural dignity and beauty. Next within the outer corridor comes the inner corridor, running on all sides of the building and only interrupted in places by narrow long rooms or partitions. A long wall ten feet high divides them, and only one door connects the two, through apertures a foot wide of

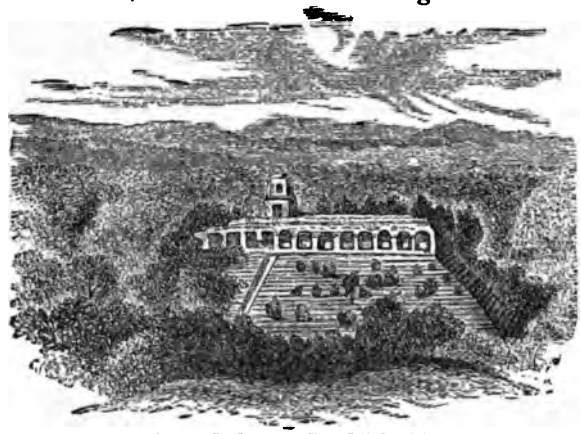

Fig. 1.—PALACE OF PALENQUE.

[2] "The city extended from north to south about one mile and a quarter and about one mile and three-quarters from east to west."—*Part VIII in N. A. Review for June, 1881, page 584.*

[3] "I still persist in the belief that this palace was inhabited by the priests who served the different temples round about, and that Palenque was a great religious centre like Rome, Jerusalem, Santiago, Cholula, etc."—*Part VII.*

[4] "The more I see of this palace the more forcibly do its corridors remind me of the walks of a cloister."—*Part VI.*

forms like –||–, ⊤, affording communication between them. They were each 10 feet wide. The ceilings were trapezoidal in shape, and in place of arches the stones ascended in inverted stairs, spanned at their narrowest approach by a flat stone, the whole smoothed by a plane surface of stucco. On penetrating further, a large courtway 80 by 70 feet, is first entered, the sides of whose steps were carved into strange shapes exhibiting astonishing manipulatory skill and expressional power. This courtyard was overgrown and impeded with trees. The other courtyards are smaller but are all decorated with sculpts, stucco ornaments and hieroglyphics. [5]A tower three stories high, forms a prominent feature rising above the lower apartments but terminating abruptly against a stone ceiling, and suggesting, from its utter vacuity of design no possible purpose in its now dismantled and imperfect state. This building (Fig. 2) is called the "Palace[6]" by the natives but whether the name expresses its original purpose is not known. The figures from Catherwood's drawings are instructive and striking. Central America, vol. I. p. 311.

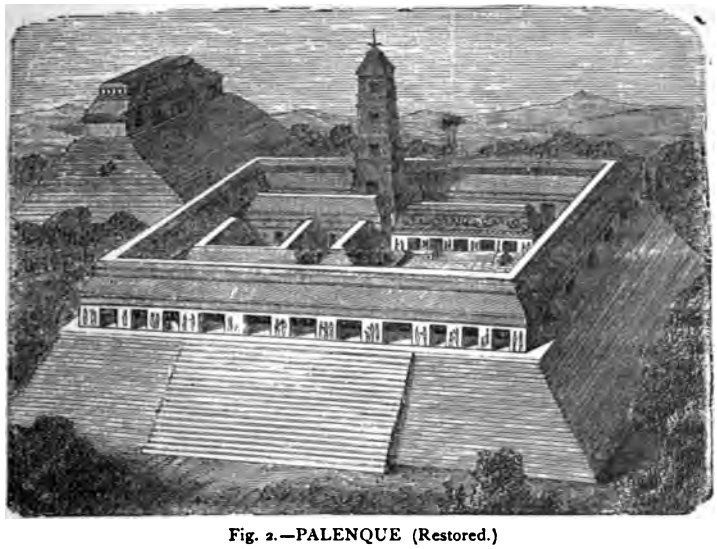

Fig. 2.—PALENQUE (Restored.)

One represents a standard bearer, perhaps a royal attendant in

5 Speaking of the ruins of Camalcalco, Charnay says: "Here we found no longer simple ruins, but veritable mountains of ruins. The first ruin that attracted my notice was a square tower surmounted by a gigantic tree like the famous tower of Palenque. To the north of this is a great edifice consisting of two parallel halls. Here again we are reminded of Palenque, but this building is much larger than any in that place, besides it has three square windows, whereas the buildings at Palenque have none."—*Part VI., N. A. R., page 187.*

6 The cut illustrates the palace restored. The restoration is, however, an imaginary one and may be very incorrect, for very little is really known of the shape of the superstructure or the finish of the building.—ED.

the very attitude of respectful waiting on majesty. A mace; flag, baton or ceremonial staff is held in hand, his head is decorated with plumes of feathers, a necklace falls down over his breast, a cape barred with studs covers his shoulders and a bunch of ornaments is suspended from his breech clout of leopard skin. His head is flattened and forced into a conical protuberance, an alteration doubtless artificial, though somewhat heedlessly accredited as a cranial peculiarity of the primitive builders. Two squatting figures in an attitude expressive of submission and reverence or both and much less modestly clothed, are at his feet. Their head dresses of feathers and the man's maxtli are visible.

The maxtli was a customary article of dress varying among the different ranks only in its texture and decoration, and described as "a long strip of cotton cloth wound several times around the loins and passing between the legs * * * its ends were often allowed to hang, one in front and the other behind, being in such cases more or less embroidered or otherwise decorated, (B vol. II, p 72). The female shows the skirt worn by women which amongst the higher classes descended to the ankles, but was, with the plebeians only a winding sheet of cloth reaching to the knees, the breast was sometimes covered with a sort of chemise, but more generally exposed and uncovered. Forming the cellar or basement of this building is a series of vaults or chambers. The front of the corridor is pierced by doors between which are piers ornamented with figures which supported a heavy, high and intricately sculptured frieze. Above this, the roof receded to the flat top, guarded by a balustrade.

[7]Among other ruins of this city, Stephens has described four structures or houses all of which crown the summits of pyramids of earth and stone, all ornamented with stuccos, built of hewn stone and of the general plan of an inner apartment, distinguished by ornate and pictorial tablets and an outer corridor, which may or may not form a room on either side of the central chamber.

Casa No. 1 is 76 feet front, 25 feet deep, on a terrace with a slope of 110 feet. The bas-relief repeats the dress of the female figure in the palace and exemplifies the character of the decoration on the piers. This figure has been regarded by some ingenious speculators as the Goddess Astarte of the Phœnicians and has been adopted as an argument to prove the Tyrian origin of these works. Hieroglyphics in this building were on tablets 13 feet long and 8 feet high, affording 240 symbols or squares.

Casa No. 2 is smaller but exceeds the former in interest from the wonderful and expressive tablet covering the back wall of its

7 "I directed my steps toward the Temple of the Cross Number 1 (for there are two), but my guide lost his way and we came upon the Temple of War. This temple lies south of the palace. The only means of reaching it is first by a steep ascent leading to a plateau on which are the ruins of two temples, then, after another very steep ascent you are at the Temple of War. Here we found three fine sculptured tablets of stone. They at one time formed the base of an altar."—*Part VI.*

single room as restored by Stephens. (See Fig. 4.) This building stands upon a double terrace, the first 60 feet in slope rising to an esplanade 110 feet broad from which again another pyr-

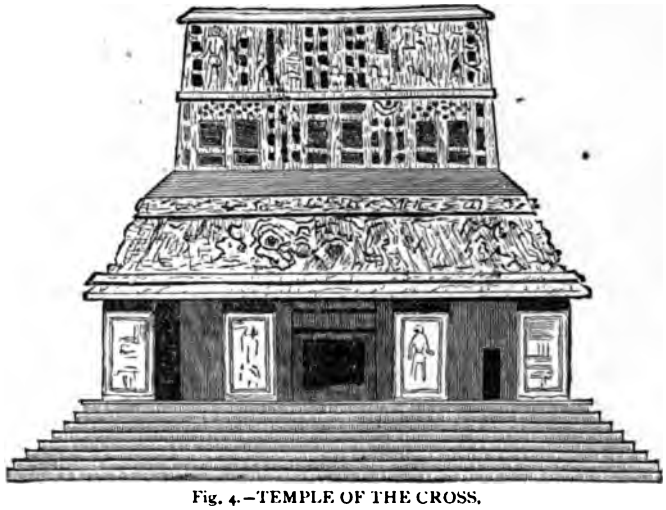

Fig. 4.—TEMPLE OF THE CROSS.

amid ascends 134 ft. on the slope and this turn supports the sacred structure. The building is 50 ft. front, 31 ft. deep. Stuccoed figures covered its front, and its piers are similarly decorated with hieroglyphics and figures intermingled. The interior after passing the outer corridor is composed of the inner hall surrounding an inner room where a supposed altar stood surmounted by a ceremonial tablet, flanked by pannels of hieroglyphics. This room is 13 ft. wide, 7 ft. deep, with no admission of light save by the door. (See Fig. 5.)

Above this main floor two more stories were entered, though without any visible access from below, the roof inclining up to the narrow platform on which they stood, which latter was only 2 ft. 10 in. wide. "The superstructure of the first story is 7 ft. 5 in. in height, that of the second 8 ft. 5 in., the width of the two being the same. The ascent from one to the other is by square project-

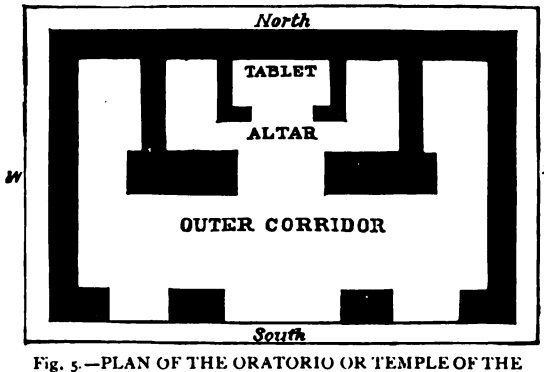

Fig. 5.—PLAN OF THE ORATORIO OR TEMPLE OF THE CROSS.

ing stones and the covering of the upper story is of flat stones laid across and projecting over. The long sides of this narrow structure are of open stucco work formed into curious and indescribable devices, human figures with legs and arms spreading, and apertures between, and the whole was once loaded with rich and elegant ornaments in stucco relief. Its appearance at a distance must have been that of a high fanciful lattice."[8]

Near this structure upon an elevation which immediately adjoins it is a third building, Casa No. 3, quite similar in general details but containing several remarkable tablets. [9]The first occupies the central portion of the back wall of the interior chapel, oratory or sanctum, as in Casa No. 2, and is framed in hieroglyphics. It represents the same pair as the previous tablet, apparently presenting offerings to the grotesque mask in the centre.[10] (See Fig. 6.) They may be engaged in consecrating newly made idols, or presenting diminutive images representing good crops and plentiful rain-falls, which vicarious types were used in this way. On each side of the doorway a stone tablet formerly stood, bearing bass-reliefs of strikingly different expression. On one a figure with lofty head-dress of leaves and feathers resembling the crouched creatures in the tablet of the mask, or so-called sun, less painfully disfigured and dressed in a leopard's skin while opposite erect and martial is a warrior-like personage caparisoned in plumes and chains, tippets, belt, and buskins.[11] The doorway of this holy place is surrounded with elaborate decorations most of which have fallen away. Casa No. 4 completes the list of ruins inspected by Stephens and is remarkable for the double tiger headed couch depicted in stucco, suggesting similar dicephalic ornamets found at Uxmal. This very striking fragment was in great measure effaced, but Waldeck's figure exhibits its elegant and impressive character. These comparatively unsightly remains form the vestiges of what was formerly a great and populous city. Doubtless they represent the [12]palaces

8 "To-day as our men were opening the road to the south of the palace at a point some 500 feet distant from that edifice they came upon three buildings, two of which are of the same style as the temples, but without altars inside or sculptured tablets. The two larger buildings consist each of a large front chamber or hall, with two dark chambers in the rear, and, like all the temples, their columns were richly ornamented with bass-reliefs."—*Part VII.*

9 "I made a cast of one of the three large stone tablets in the Temple of Inscriptions. This tablet is 9.18 feet wide and 6.50 feet in height and contains 140 cartouches."—*Part VI.*

10 The figure called a mask represents an image of the Sun. —ED.

11 "Hitherto only profiles have been found at Palenque. My Indian laborers continued the work of clearing the palace and found in the principal court a front face, and in high relief and of natural size. I have furthermore photographed the lower half of the figure of a man to be seen in the frieze of the second building. The head is especially interesting because it differs essentially from the profile heads carved on tablets. The forehead is far less receding."—*Part VII.*

12 "A party of laborers employed by the Mexican government are making openings in different directions and are finding new buildings from day to day, but these buildings are identical in type with those already known and described.' —*Ibid.*

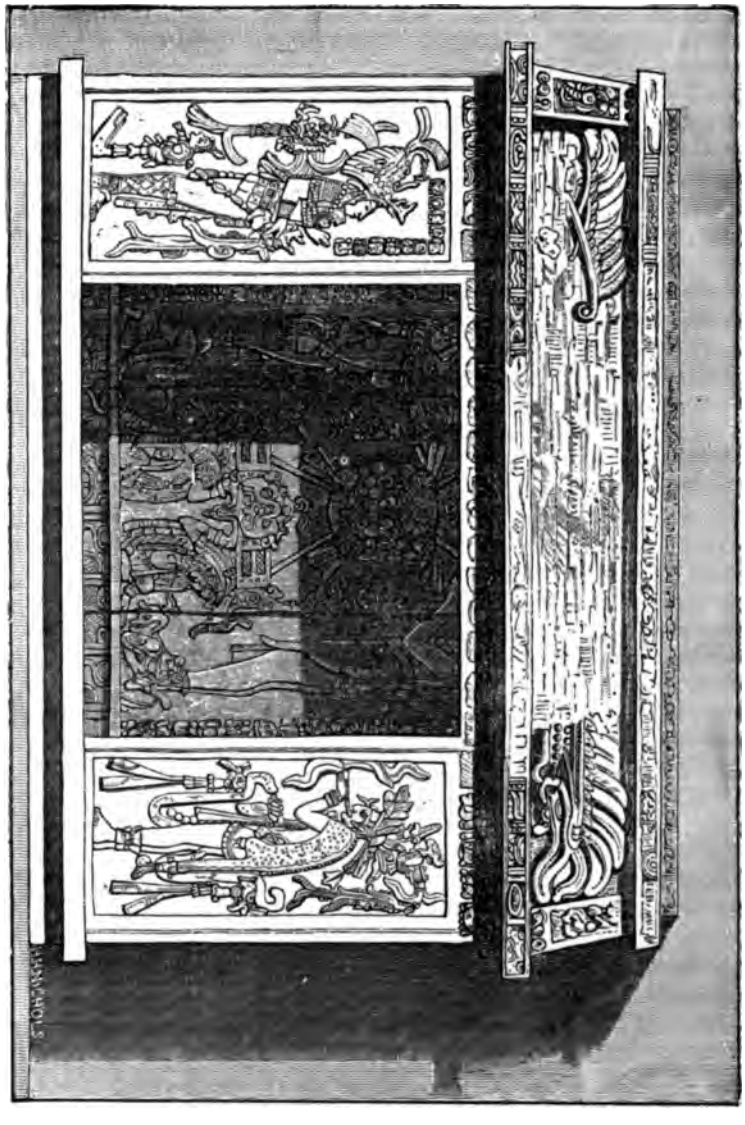

Fig. 6.—TEMPLE OF THE SUN.

[13]temples, [14]great residences, &c. which were erected with a solidity and care corresponding to their preeminent uses. The streets lined with wooden structures which clustered about and comprised these, have all disappeared, their perishable material through long centuries succumbing to the violence of storms and the rankness of decay. No more fitting words expressive of that spirit of contemplative speculation evoked in the presence of these venerable fragments, can be used than those with which Stephens closes his description of these ruins. "In the midst of desolation and ruin we looked back to the past, cleared away the gloomy forest and fancied every building perfect, with its terraces and pyramids, its sculptured and painted ornaments grand, lofty and imposing, and overlooking an immense inhabited plain; we called back into life the strange people who gazed at us in sadness from the walls, and pictured them in fanciful costumes and adorned with plumes of feathers, ascending the terraces of the palace and the steps leading to the temples; and often we imagine a scene of unique and gorgeous beauty and magnificence, realizing the imaginings of the Oriental poets, the very spot which fancy would have selected for the Happy Valley of Rasselas." South of Palenque and still within the province of Chiapas, near the modern village of Ococingo, a group of ruins is known though they have received but indifferent treatment at the hands of explorers, and their reports are unfortunately conflicting. [15]They appear to consist in a lofty central eminence, probably artificial, with five terraces, on which a steep pyramid stands, supporting a structure resembling the buildings at Palenque, and bearing over the doorway of its principal apartment an ornament surprisingly like the winged globes familiar in Egyptian architecture. [16]Other buildings are seen from this point and through the wilderness about, occur indications of an extensive series of aboriginal constructions. A few singular sculptures from this locality have found their way to Vera Cruz and are there in the possession of private persons.

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13 "In another excursion through the woods to the north-east of the palace I everywhere found ruins and remains of buildings all standing on pyramids. The number of these structures is enormous."—*Ibid.*

14 We have made excursions into the woods in every direction, discovering ruins everywhere, but these ruins are all of the same general class, temples and palaces. Nowhere have we found a structure which could pass for a dwelling."—*Ibid.*

15 "Everything that I see here confirms me in the belief that Palenque was a holy place, a religious centre, a city of pilgrimage filled with temples and altars."—*Ibid.*

16 Charnay takes the ground that the buildings at Palenque were palaces. He does not seem to recognize the communistic method of living, or mention the fact that these localities may have been the central capitals of different tribes or clans, but carries his European ideas with him wherever he goes. He says "in some localities there stood groups of buildings of considerable size and rather close to each other; in other quarters the buildings are far apart."—ED.

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THE CROSS AT PALENQUE.

This tablet is of a very singular and ornate character. It has attracted the closest study of archæologists and the recent monograph of Prof. Rau, published by the Smithsonian Institute, attests to the wide spread interest and learned discussions it has excited. It is commonly designated as the Group of the Cross from the prominence of that object upon it. It consists of three slabs, the left one of which is yet in place, the middle one was found by Stephens lying at some distance from the temple whence it had been removed, and the right one is preserved at the Smithsonian Institute. The relief sculptured upon it and flanked by rows of quadratic glyphs affords, both by reason of its admirable execution and the obscure character of its symbolism, one of the most deeply interesting tokens we possess of aboriginal culture and civilization.

The cross as its central object has excited a great deal of imaginative speculation and the zealous Catholic fathers have ascribed the introduction of this christian symbol amongst these people to St. Thomas, whose early disappearance from authentic fields of missionary labor was due to his pre-occupation with this interesting mission. To correct the natural impression, that this sign is inseparably associated with christianity, it is only necessary to recall the prevalent use of this emblem amongst historic and pagan peoples. The Phœnicians used it; it was found by Mr. Layard, amongst other sacred forms, sculptured on the neck of a statue in Nineveh; in Egypt, as an emblem of life, it is frequently found in figures of deities; and it forms an almost invariable feature in representations of the Syrian Goddess Astarte. Spanish writers instance its frequent occurrence in America as an object of religious import and superstitious veneration. In fact the cross is one of those ethnic symbols, whose wide dissemination is connected in a recondite association with the fructifying and regenerative forces of nature, in the religious conceptions of early races. Dr. Muller, as quoted by Prof. Rau, says "the cross is also met as a nature-symbol among the ancient nations of our hemisphere, a fact which, in view of its simple shape, can hardly cause any surprise. All attempts thus far made to interpret it as a Nile-key, phallus, or sign of the seasons, unite in the conception of the fructifying energy of nature. Hence it appears in connection with sun-gods and the Ephesian goddess, and it is also the fitting symbol of the rain-god of the tropical lands, whom, as stated by the natives, it represents. In China, too, the rain signifies conception, and the Greek myth of the golden rain which the cloud-gathering Jupiter showers upon Danae has the same significance.

Whenever, therefore, mention is made of a veneration of the cross in Central America (and adjacent regions) it appears least

hazardous to connect its worship with the fertilizing rain-god crossing the receiving maternal earth. The bird which appears associated with the cross on the Palenque bas-relief is a fitting attribute of the god of the rain and sky. To the bird and the rain belong the regions of the air. Somewhat at variance with this interpretation Dr. Brinton regards the cross as a symbol of the four winds and says " it represents the god of rains and of health and this was everywhere its simple meaning. The Aztec goddess of rains bore a cross in her hand, and at the feast celebrated to her honor in the early spring victims were nailed to one and shot with arrows. Quetzalcoatl, god of the winds, bore as his sign of office a mace like the cross of a bishop; his robe was covered with them strown like flowers, and its adoration was throughout connected with his worship. The arms of the cross were designed to point to the cardinal points and represent the four winds, the rain bringers. As the symbol of the fertilizing summer showers, the lightning serpent was the god of fruitfulness. Born in the atmospheric waters it was an appropriate attribute of the ruler of the winds. Here also we see the solution of that monument which has so puzzled American antiquaries, the cross at Palenque.[17] It is a tablet on the wall of an altar representing a cross surmounted by a bird and supported by the head of a serpent. The cross, I have previously shown was the symbol of the four winds and the bird and serpent are simply the rebus of the air-god, their ruler."

As can be readily seen the mask[18] upon which the cross rests would not appear to be even a conventional representation of a serpent's head, and so far as its significance is concerned would hardly support Dr. Brinton's theory, in other respects ingenious and appropriate.

The bird which surmounts the cross is the quetzal or toucan, that resplendant creature whose exquisite green tail-feathers were used in the brilliant feather mosaics and the georgeous head dresses of the Maya nobility.

The ceremony celebrated at this cross has been regarded as a baptism, and as a sacrifice, but the latter view seems in every way the most probable. It is certain that the Mayas practiced the loathsome custom of offering up their children, and as Prof. Rau

[17] The belief that the purpose of these edifices was a religious one gains confirmation from the character of the bass-reliefs. These present always the self-same action, viz: A man standing, holding in his hand a sceptre from which is emitted a flame typifying speech—preaching. The kneeling personages accompanying this principal figure are neither slaves or conquered enemies. I have studied them closely and am convinced that they are worshipers."—*Ibid.*

[18] See the Temple of the Sun, Fig. .6 Here is the winged ornament but without the globe. The figure on the tablet is undoubtedly an emblem of the sun. It has the same peculiarities that the face of the sun has in the so-called sacrificial stone in Mexico; the round face, open mouth and tongue protruding from the mouth; an emblem which is representative of the sun in the Fiji Islands as well as in Central America.—ED.

remarks, "the event of the baptism of a child certainly was not deemed among the Maya nations of sufficient importance to be perpetuated in stone or stucco, while the sacrifice of a child by which, according to their conceptions, some great disaster had been averted, evidently constituted a more powerful motive for transmitting the recollection of the occurrence to coming generations."

The priests on either side, if they be such, offer a striking contrast in their apparel, the larger one to the right, barely clad in a loin cloth and apron, the smaller one furbelowed with wraps, scarfs, cloaks and weighted with an oppressive head-dress. The taller and presumably the superior prelate exhibits the customary arrangement of the hair shaved off from around the sides of the head and collected in a queue, or sometimes a long pigtail at the apex of the head. Innumerable cyphers, pendants and inscrutable embellishments surround the cross.

COPAN.

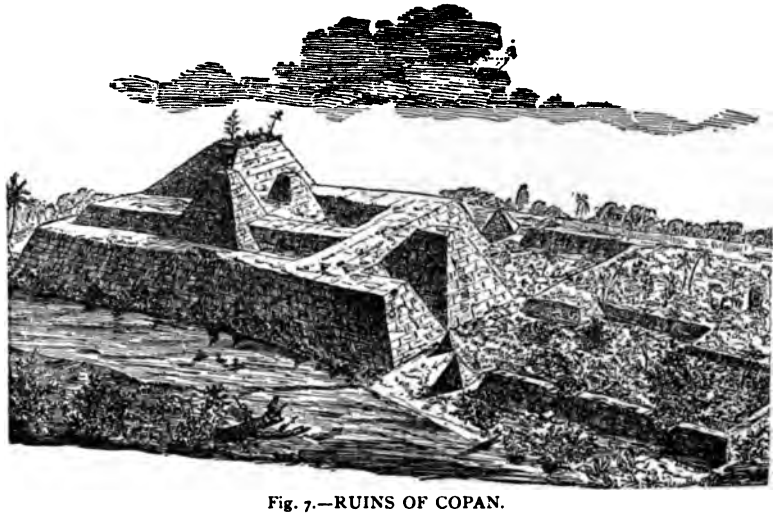

Fig. 7.—RUINS OF COPAN.

In Honduras mounds, terraces, ruined temples, disintegrating scepultures and prostrate idols are found in numerous localities. They have been imperfectly described and the most important as the ruins of Tenampua on the cliff pictures at Aramacina give way in interest and extent to the famous remains found at Copan. The ruins known under that name are situated in the western extremity of Honduras, within easy distance of the territory of Guatamala. They may be identical with that city whose recalcitrant cacique or governor, Copan Calel, was subdued by the Spaniards, under Hernandez de Chaves, when in 1530 the former refused submission to the Spanish dominion. Copan Calel encountered the invaders with an army of 30,000 men and,

Fig. 8.—IDOL PILLAR AT COPAN—No. 1.

only after the most desperate and intermitted resistance retreated before the impenetrable phalanxes of the Spaniards. The ruins lie on the left bank of the river Copan and present features of strength and imposing solidity inconsistent with the trivial reference to its capture made by Spanish historians. The actual extent of the ruins it is impossible to determine, a tangled forest shrouds its outlines, and will forever conceal many of its rarest fragments. Trees, bushes and vines in knotted confusion are slowly pushing down its stone terraces and substantial walls, while storms are corroding into indistinguishable shadows the once bold lineaments of its numerous statues. Terraces, pyramids, 120 ft. on their slope, quadrangles 250 ft. square to which stone steps lead by an easy descent, high walls of hewn stone recesses and enclosures are mentioned by Stephens in the particular area he examined. The whole is designated by him "The Temple," and forms a complicated plan enclosing no complete edifices but strown with sculptures of astonishing power and expression, ornamenting the steps, scattered up and down the terraces, and interspersed with magnificent columns whose sides are fretted with luxuriant alto-reliefs encrusting a central figure, to which they bear some definite relation. These idols (see Figs. 8 and 9) were thirteen feet in height, four feet wide, and three feet. deep, many of them were painted and all profuse in extraordinary details, emblematic insignia, and subsidiary portraiture. Certainly no remains found in all that marvelous district strikes the beholder with more amazement than these stupendous fragments of an art, which for its developement of ideas, formation of its technique, and acquisition of skill demands a long and peculiar history, staggering the imagination with endless questionings. Altars occur in many spots, usually before the great statues, made of single blocks of stone, some almost buried beneath the surface, all badly weathered, in many instances their ornaments obliterated by moss.* On one of these sides are very elegantly inscribed rows of sitting figures while its table like top bears 36 compound hieroglyphics similar to those seen at Palenque, the whole altar reposing on four stone globes. These statues, altars and sculptures, are made from a soft grit excavated from neighboring quarries and have been probably worked by flint implements, some of which form collections in possession of resident Spaniards. Heads carved from stone noted by Stephens on the spot as "death heads," were seen throughout the ruins with striking frequency, but resembling closely, as was suggested to Stephens on his return, a monkey's skull. Such simian suggestions recall a curious legend told in the Popol Vuh, an important Maya manuscript, translated by Breboeuf viz: When man was first made it was from the earth, but this inert material refused leavening by any mental, moral or spiritual forces, and it was resolved

Fig. 9.—IDOL PILLAR AT COPAN.—No. 2.

into nothing by the waters. A second attempt from wood proved more successful, but this insensible substance produced a torpid and insensate creature, that withered away, and a third effort, using the *tzite* tree, resulted in another stupid race who were destroyed, except a remnant which existed ever after as a group of monkeys in the forests, the creation of the human race being finally consumated under circumstances of profound mystery. Naturally man was early impressed by the human habits of his strange prototype, and gazed with mingled feelings of amazement, awe, and curiosity, on these roving simulacra of himself, and, in a zone where they were abundant, incorporated their forms in the medley of his religious ideas. Hieroglyphics are found covering the sides of some columns in vertical series, and as with those at Palenque have so far resisted all attempts at translation. These enigmatical symbols doubtless would enlighten us as to the nature of the sites these ruins now occupy, and possibly lift the veil from off their hidden origin, or at any rate tell us something of their worship and its rites. Fragments of sculpture, an immense head 6 ft. high, with numerous pieces half protruding from the soil cumbers the ground in places and offer a curious spectacle. "A pit 5 ft. square and 17 ft. deep cased with stone" is mentioned near the ruins of two circular towers. This vault was entered and its floors and recesses were found littered up with red earthenware dishes "full of human bones packed in lime," sharp knives of chaya, and a death's head carved from a green stone, exquisitely done. Above this a low passageway leads through the terrace to the river side upon which its outlet looks. Palacios a Spanish writer has described 300 years ago superb ruins in this place, an eagle carved in stone bearing a shield covered with cyphers, six statues standing within a plaza circular in form paved with beautiful slabs, its centre a stone basin and its sides formed of ascending steps.

Huarras, another historian, indicates a similar amphitheatre as late as 1700 probably now buried in the heart of this great forest. Copan appears to be an older city than Palenque, and Stephens imagines its art less polished than the bas-reliefs of the latter. Such is Copan, a dead city, filled with statues and altars. A forgotten, unused sanctuary whose solitudes hear the current-like sweep of emigrating tides of monkeys through the forest boughs, where once the cries of victims, chants of priests, prayers of a great people and processions of devotees filled its limits with ceremonial pageantry. Ourigua, a group of ruins to the north-east of Copan, consists of pyramids, altars, carved obelisks and scattered fragments.

L. P. GRATACAP.

SACRED DANCES OF THE PAWNEES.

Although the Pawnees are adopting the ways of the white man more and more every day and the Government is steadily bringing them to the level of their white brother yet every effort to induce them to give up their barbarous dances has as yet been fruitless. The dances continue the same as in years gone by when they were kings of the forest: their own masters, when none dictated to them. To-day scarcely a night passes but the wierd sound of the tom-tom and dance song is heard at one or more of their villages and seldom ceases until the sun appears in the east.

THE SCALP DANCE.

The most wierd and important of these dances is the Scalp Dance which in these days seldom occurs. The last one among Pawnees to my knowledge was in the fall of 1879. At these dances no white man is allowed, but through "Knife Chief," son of "Comanche Chief," head chief of the Skee-dee, (upper people) band of the Pawnees, I was invited to attend. As I approached the lodge an hour before sunset, I saw dangling from a lodge pole which arose far above the lodge, the scalp around which the dance was to be held. The scalp was that of a woman. The hair was fully 18 inches long and of a red color. As I entered the lodge no one was within, except the dancers, 10 or 12 in number, who sat in a semi-circle at the back of the lodge and opposite the entrance, and two attendants who busied themselves attending the wants of the dancers. All was quiet, not a word being spoken, until near the setting sun, when occasionally two or three beats of the drum were heard, as if testing its tone when of a sudden and in concert the most unearthly war whoop broke the quiet of the lodge. The drummers beat with all their power, and in came the spectators (mostly men) pell mell, yelling at the top of their voices. All seemed confusion, all were talking at once; but once in, all again became quiet as before. The dancers were naked except as they wore a G string and head dress of white, made from the cottonwood bud. They were painted most fancifully, many being covered all over with white or clay paint. Where only the face was ornamented the more rare colors were used, such as red, green, blue, yellow, but all were painted beyond recognition. Spotted Horse, (the head chief of the Kit-ka-hacks band) was the first to dance; he being the one who had cut the scalp from its owner. He came forth with dignified air, first described how he had killed the woman cut the scalp off before she was dead, even describing how she

had screamed and plead for mercy. By use of the tomahawk he held on that particular day he acted out as near as possible the dreadful tragedy in which he had played so important a part. Then came the dance. This was single. In it first the dancer's head and body are leaned forward, the head reaching very near the ground, next lifting the feet high in the air, he throws himself back into a sitting posture with such force as to seem to jar the very lodge. A knife was held in one hand, a medicine gourd in the other, the latter of which was shook accompanyment to the music of the Indian drums. The dance was in exact unison with the music. At intervals he stopped and reviewed the story he had already related or some part of it, then again danced with more energy than before. Thus the dance was kept up for an hour when he was joined by the rest of the dancers. One by one they came forth and related some act of valor, after which the dance was again begun. This dance was kept up until midnight when the presents were given. Many of the spectators became so excited that they took from their own body their wearing apparel and threw it to the dancers. Then came the big smoke. The chief's pipes were filled by the chief himself with (Now-eo-cow) Indian tobacco which is kept in a buffalo head and thought to possess spiritual virtue, and sent by the attendant to one of the spectators who is known to have made some present. He smokes and passes it to such friend as he wishes. After all who have given presents are handed the pipe of sacred tobacco the dance is either ended or they begin anew and repeat exactly what I have related, dancing around the same scalp, but after that night that scalp is never danced around again.

THE PONY DANCE.

This is the only dance of the Pawnees in which all the warriors and braves are allowed to participate, and it is at this dance that the young beginner usually makes his first attempt. Many spectators are always present, not a few being of the opposite sex, consequently it may be called the "gala dance." In order to give the reader a clear idea of this great dance, I will describe the last one I saw which was in September, 1881. The Skeedee band gave the dance to the Kit-ka-hack band, (people at home.) The Skee-dees go to the Kit-ka-hacks (people at home) band taking with them their wigwams, dishes, cooking utensils, food, tobacco, pipes and in fact every thing that is required to entertain their brother band for at least ten days. Their first work is the preparation of the dance grounds which is done by stretching all the wigwams in such a way as to form an immense tent, enclosing half an acre of ground without stop but arched in such a manner as to protect the spectators from the scorching rays of the noonday's sun. This done, the dance begins. Ten or twelve of the most elegant dancers are chosen to open the dance. These dance until thoroughly fatigued, some-

times dancing five or six hours, then they retire and another lot takes the place. Thus the dance is kept going from daylight until 12 or 1 o'clock, then the dance ceases until morning, when it begins with renewed vigor, and thus for ten days all is glee and excitement. All feast, smoke, and enjoy themselves, at the expense of the Skee-dee band. The Skee-dee squaws being obliged to cook for all present, the number often reaching eight or ten hundred, but no murmur is heard.

One day described, nine are described, but the tenth day is the all important one, for on this day is the presentation of ponies. At noon the young men begin to enter the dance, often seventy-five or a hundred young braves are seen on the arena at once painted and bedaubed in the most fantastic manner, each one frantic in the performance of his sacred dance. Their movements are in unison and to the measured time of a half a dozen Indian drums or tom-toms assisted by the wailing songs of two or three very pretty Indian girls. Soon as seen the Kit-ka-hacks approach the dancers and give them crooked sticks, often these sticks are presented by little children. At each donation the wildest hilarity is manifested. This big dance is kept up until daylight next morning when the exchange of sticks for horses begins. Each stick when presented to the donor will demand in return the choice of his herd. The dancers all receive horses. The chiefs and medicine men often receive as high as a dozen or more. At the dance I have just described nearly 400 head of ponies were given to the Skee-dees by the Kit-ka-hacks.

MEDICINE DANCE.

This is probably the most frequent of the Indian dances. There are several kinds of these dances. At some they pretend to make medicine, "Te-whar-uks-ty," (wonderful medicine); at others they cure the sick. When the medicine, Te-whar-uks-ty, fails to cure the patient, the medicine men are sent for and they give their medicine dance over the death bed of the patient. I say death bed because the medicine men are never sent for until the patient is dying or supposed to be. When they arrive, usually two, three or four of them, they set about their dance immediately by use of their medicine gourds and pouches, which are shook over their heads to the time of their dance and song, new life is supposed to enter the patient, the whole night or for six or eight hours. If no signs of new life are manifested at the end of the dance orders are at once given to the old squaws to smother the sick to death. There is a superstition among the Pawnees that one who dies a natural death never enters the hunting grounds in the hereafter. One who is smothered will, but he will never attain the honors of a chief or medicine man. One who is killed in war is sure to go to the hunting ground and may attain any degree of honor in the tribe.

THE WHITE HORSE DANCE.

This dance is given in honor of a famous white horse once owned by the head chief of the Pawnees and killed in battle with the Sioux many years ago. They yet have the tail of the horse. In the dance this tail is fastened to the back of the leader of the dance and sticks out behind very gracefully. The dancer imitates the horse and is supposed to be the leader of a wild herd. The dancers behind him all have tails of horses which have been killed in battle affixed to them and are the wild herd. Tails of horses killed in battle are always saved and highly prized. But this white tail must always be used as leader in this dance of the White Horse. This dance, once very popular, now seldom occurs, but is still looked upon by the Indians themselves as one of their great dances.

THE EAGLE DANCE.

In this dance many eagle feathers, claws and beaks are displayed. It is very similar to the dance of the White Horse, inasmuch as the dancers are supposed to be inspired by the dead eagles whose feathers they wear and imitate the flight of the eagle.

CIRCLE DANCE.

This is the most common dance and is participated in many times by the young men only, although the chiefs and medicine men at times take part in it.

WAR DANCE.

The Pawnees have many war dances but are very similar in performance, so much so that a casual observer would notice no difference between them. The main difference, however, is in the songs they sing. During these dances the dancers themselves sing war songs, the subjects of which are always dead heroes. Some of these songs are very old, so old that none living now know anything of the subjects but by tradition.

THE BUFFALO DANCE.

This is a dance which is like the White Horse, but instead of imitating the horse, it illustrates the hunting and killing of the buffalo, (once the Indian's storehouse). The dancers all have buffalo tails attached to them and it is not unfrequent to see the head and the robes of the buffalo in the dance.

There are also many other dances of the Pawnees but of less importance.

THE PIPE DANCE

Might however be mentioned as one of their principal dances, for in this dance they smoke good will to the bad spirit, also in all the above dances they smoke their will to the good and bad spirit. Before lighting their pipes they throw a pinch of the tobacco into the air, this with the first three puffs of smoke which are also blown high in the air goes to the good spirit. The ashes they are very particular to throw to the fire and this is ill luck

w ind will n he ind spirit. The pipe, the Indian's idol and
throne, s n the Pawnee what the bible is to the white man and
goes hand n hand with al their principal dances.

Samuel Wm. Lucas, (Pawnee Bill.)

Wellington, Sumner Co., Kansas.

ANCIENT WORKS IN IOWA.

I give here a brief description of a very interesting ancient work in Iowa, examined by one of the assistants of the Bureau of Ethnology, last year, but of which no notice has hitherto appeared. It forms part of a group situated on the Little Iowa river a short distance above New Albion. This work, the largest of the group, is an enclosure, shown in figure 1. It stands on the margin of the bluff overlooking the river, is circular in form, the circle being broken on the east side where it touches the brink of the bluff, and here made to conform to the line of the latter. The ends at the southeast, overlap each other for a short distance, leaving at this point an entrance way, the only one to the enclosure. A ditch runs around the circle on the inside from the entrance on the south to where the wall strikes the bluff on the north. The north and south diameter, measuring from outside to outside, is 277 feet, from east to west 235 feet, the entire circumference 807, the length of the portion along the bluff 190 feet, and of the overlapping portion at the entrance 45 feet.

The wall, with the exception of the portion along the bluff where but slight traces of it remain, is quite uniform in size, about four feet high and from 25 to 28 feet wide; the entrance is 16 feet wide and the ditch from five to six wide and about three deep.

"As this ground," remarks Col. Norris, who explored the works, "including the circle, has been under cultivation for fifteen years, it would be supposed the heighth of the wall is considerably lower than it orignally was, but I am inclined to believe such is not the fact. It is composed chiefly of yellowish brown clay obtained, in part at least, from the excavation and the ditch, but during occupancy the accumulation of bones of animals used as food, stone chips, river shells, broken pottery and dirt, and since abandonment, the accumulation of sand drifted from the crumbling sandstone butte overlooking it, have not only filled the ditch, but elevated the whole interior and the wall two feet or more. This accumulation of sand is so great and so uniform over the elevated plateau on which the works are situated that fifteen years cultivation has not reached the clay of the original surface, nor has it unearthed or penetrated to the bones, pottery fragments and other refuse matter covering the original surface in the enclosure."

"A trench was run through the wall on the northern side along the line *a b* fig. 1. Here I found first, a layer of sand about one foot thick; immediately below this a layer of refuse matter from one two feet thick and below this the clay embankment, two feet thick, resting on the original surface of the ground. A section of the ditch, embankment and excavation at this point is shown in figure 2. The dotted line *a b* indicates the natural surface; No. 1 the original clay layer of the wall or embankment; No. 2 the layer of refuse material which has completely filled the ditch, and No. 3 the top layer of sand. In No. 2 were found charcoal, ashes, fragments of pottery, fractured animal bones, &c.

"A broad belt of the inner area next the bluff was plowed and carefully examined. By using a very heavy plow, running as deeply as possible and repeating the operation several times, the refuse layer was reached and broken up. It was found to consist of the same kind of accumulations as No. 2 in fig. 2, except that there were more shells and also many burnt stones."

There are two other small enclosures and quite a number of small mounds in this group which were examined by Col. Norris, but his description of these is omitted, as our object at present is to call attention to one significant fact revealed by the exploration of the circular enclosure.

"Nearly all of the implements found," (we quote again from his notes), "were of stone and very rude, being little more than stone flakes with one sharp edge, which appear to have been used as knives, scrapers and skinners."

"The immense number of charred bones, not only of fish, birds and the smaller quadrupeds such as the rabbit and fox, but also of the bear, wolf, elk and deer furnished proof that the occupants of this place lived chiefly by the chase and hence must have used the bow and arrow and spear. Yet strange to say during my examination, although careful search was made for them, less than a dozen arrow and spear-heads were found, and these so rude as scarcely to deserve the name."

This group of works, which is described by Col. Norris with sufficient accuracy and detail to enable us to understand clearly the positions, plans and construction of the different parts, is certainly very interesting, and so far as I am aware presents some features which differ from any other found in this north-western section. The form of the enclosure reminds us at the first glance of the enclosing palisades around Indian towns figured by DeBry and some of the other early writers, and which Lafitan asserts was usual form. Here we have the circle, the overlapping of the ends and the single narrow entrance way. We have here also the clay with which it was the custom, at least in the southern section, to plaster the palisades. The indications are therefore very strong that this enclosing wall was originally a palisade

plastered with clay, and if so that these works were built by Indians.

Be this supposition correct or not, the evidence is conclusive that the area on which the group is situated has been the abode, in the past, of two different tribes or peoples; the first the authors of the works, whose stay was probably not very protracted, and after them a second tribe differing in manners and customs from their predecessors, a people who did not rely upon enclosing walls for protection against their enemies. In no other way can we account for the fact that the refuse layer which covers the inner area also spreads in equal depth over the clay remains of the enclosing wall, as those who left this refuse layer could have made no possible use of the wall as a defensive work, for which the position chosen and other particulars show conclusively it was originally designed.

The top layer of sand, which the winds and rains have worn from the "sandy butte" and spread over the refuse stratum, indicate a considerable lapse of time since the place was abandoned by its last occupants; and the thickness of the refuse layer indicates a protracted occupancy by this second wave of population.

Do we find in this another evidence such as the works of Aztatan, Wisconsin, assuredly furnish, of the attempt on the part of southern tribes to push colonies to this region for the purpose of settlement or to procure copper? That the wall at Aztatan was a plastered palisade I think is evident from the facts given by Dr. Lapham and others. We also have reason to believe that it was destroyed by fire, probably during an attack made by some successful assailants; but the Iowa circle bears the indications of having been deliberately abandoned by its builders and first occupants. There are some two or three limited groups in Brown and Pike counties, Illinois, which so evidently belong to the southern type and are so distinct from any northern type as to warrant the conclusion that here, for a time at least, dwelt colonies from the southern tribes, probably while the builders of the Cahokia group occupied that region, as from several indications they appear to have been allied to the mound-builders who occupied this portion of the immediate Mississippi Valley.

CYRUS THOMAS.

NATIVE AMERICAN SYMBOLISM.

FIRST PAPER—ANIMAL FIGURES.

The subject of Symbolism in art and architecture is always interesting, but as presented in America is especially suggestive. No other continent presents better opportunities for the study of the subject, for no where else are there so many or so interesting specimens, as here. It is well known that symbolism belongs to one particular stage of social development, the one which in most countries precedes the historic period but it is here preserved without being obscured by historic growths.

There are many advantages for the pursuit of the study furnished by the prehistoric tokens, and yet, if the subject is to be understood, every favorable circumstance must be seized upon or the opportunity will soon be lost. If obscurity once settles down it will do so permanently, and symbolism in America will then take its place among the lost arts. This country when discovered, was in just that stage in which symbolism had full scope. Many of the factors have since been lost and yet enough has been preserved to make the continent an interesting field. We propose to search out the tokens which are presented by prehistoric America with the view of ascertaining what symbolism is contained in them.

These tokens are scattered far and wide, and have not been studied with a view of comparing them, but it requires only a passing glance at the forms to convince us that the continent is very rich in symbolic relics and figures. There may indeed be much mystery surrounding these symbols, and the signs may be very poorly understood, even at the best, yet if there is any place where the problems are to be solved, we believe it will be among the remarkable works which are here found. We do not say that symbolism was here autochthonous, or that it does not present signs of an intruded cultus, yet the line of development has been so isolated, that for all practical purposes it is the same as if it had originated and grown exclusively on this continent. We may see here the early and the later stages, both marked with great distinctness, and may in the different sections of the country, trace out the peculiarities which characterize each successive stage, and possibly may ascertain the causes which produced them.

The study of American Archæology may not seem particularly important, and yet it is possible that here, in this very department we may find the explanation of many mysteries which

have arisen in connection with the religious symbols of the east, but which have hitherto baffled investigation. 1. Here we find the first stages of the art and by ascertaining from what sources they arose, we may ascertain what causes were set at work, and what laws ruled the development throughout. We believe that the symbols here originated from the various systems of aboriginal religion and that they, in their different stages, can be connected with the various superstitions which appeared on this continent. 2. The correlation between the traditions and myths which are common in America and the symbols which are being discovered, forms a clew to the native faiths which prevailed in prehistoric times. The study of the myths helps us to understand the symbols, and the study of the symbols helps to understand the myths. Symbolism in every country needs to be studied in connection with the various religious systems which prevailed, but the opportunity of studying the myths in explanation of the symbols is only to be enjoyed on this continent. This makes the subject here very suggestive. 3. A view of the architecture and art of America reveals the fact that a vast amount of symbolism is embodied in them, and it seems probable that this symbolism was the product of superstitions and of mythologic conceptions so that we have the same phenomena here which is found in the East, art and architecture and mythology and native customs being closely associated. The very specimens of the symbolism which have been found, convince us that the religious purpose controlled the method of erecting architectural structures and of fabricating relics of art and architecture and that in this light the ornamentation must be interpreted. If classic art is to be interpreted by classic mythology, then American art and architecture must be interpreted also in the light of native American mythology, the religious sentiment being at the basis of both.

4. The interpretation of the symbols may be learned from the living witnesses, or from those who are survivors of the races who originated them. There is a peculiar combination of religious ideas and of artistic culture in the tokens which are presented by prehistoric America. The religious sentiment here expressed itself in the allegorical form, and the art and architecture of the country perpetuated the allegory.

5. In most countries the early symbols are lost, or if they exist at all are to be traced out from among indistinct tokens as the later growth has obscured them. Here, however, they stand out in bold relief, social development having embodied itself in the various forms of art and architecture, which are still preserved.

6. In the eastern continent the symbolic art overlapped the historic period but its earlier stages belonged to the prehistoric. It is on this account presented in a fragmentary way. The various stages are discoverable but they are obscure. In Greece and

Troy, the first stage recognized is that presented by the relics of pottery and spindle whorls found at Hissarlik. The last stages are those presented by the pillar and lions over the lion gate at Mycenæ. In Assyria and Babylon the earliest form of symbolism was contained in the terraced Pyramids of the first monarchy and the cylinder found in the ancient tower of Mugheir. The last stages are discovered in the human headed animal statues which line the palaces of the Kouyunjik and Nineveh during the third monarchy. In Egypt it began with the sun symbol, contained in the pyramids and ended with the dog-headed human images found in the temples at Karnak and Thebes. In all of these countries we find it beginning at a low stage and ending at a high stage of art. The bass-relief sculpture, and the figures in the mound are the last form in which it appeared.

There were several lines of symbolic development, each line being distinguished by a peculiar style of expression but the stages of growth being correlated to the different materials. 1. We trace symbolism in the architecture of the east, for the shape of the pyramids and the temples and even the palaces were often symbolic of the religious worship which prevailed. 2. The specimens of art which have been preserved whether moulded or carved or sculptured were also full of a symbolism which was at the time expressive of a hidden meaning in them. 3. The inscriptions which have preserved, the earliest specimens of writing out of which phonetic characters have grown, the hieroglyphics of Egypt, and the cuneiforn characters of Assyria, all owe their origin to a symbolic art which has disappeared but which has left the marks of its impress too unmistakably to be denied.

4. The various coins and other relics of a primitive culture also contain symbols which were well known and which were very significant to those who understood them. These coins we in our day seek for, for we trace out in the symbols inscribed upon them, many facts of history which are no where else recorded.

These four lines of symbolic development may be recognized in the east, each great nation having left tokens which were significant upon which they impressed their own ethnic peculiarities and recorded their history. Symbolism seems to have been a universal language, an alphabet which all could read and in which many histories were hidden. The early stages are lost, yet enough has been preserved to show that the art had a very great effect upon the public mind. Doubtless if we could find the earlier forms, we should discover from what sources they arose, and could see how the alphabets, the hieroglyphics, the sculptured ornaments, the architectural styles or orders and the legends were drawn out from this mysterious and powerful symbolism. Unfortunately the earlier stages were committed to perishable material.

In America we have all stages preserved to us and if we properly study them we may restore that which the other continent has lost. If we cannot restore the same forms we can at least show the counterparts.

1. Here we find the art of builing in its most primitive form; here are the primordial stages of architecture; here the very beginnings of art; and mingled with all, is a native symbolism which is very marked. We may compare the later stages of art and architecture with the same stages in Egypt and Assyria, but here we may go back farther and learn the significance of the symbolism contained in them. The carved images of Assyria and the carved images of Yucatan, the sculptured palaces of Nineveh and the sculptured facades of Palenque, the ornamented columns of Karnak and the ornamented pillars of Uxmal, have many points of resemblance, but they teem with a symbolism which has not been investigated. There is, to be sure, a great difference in the dates. The cylinders found in the pyramid of Mugheir are supposed to belong to a period as early as 2200 B.C., while the symbolic relics of America must be assigned a date at best as late as 600 A. D., and possibly as late as 1200 or 1400 A. D. The engravings on these cylinders show a high stage of art and yet they are symbolic. The spindle whorls found at Hissarlik are more primitive, but these present symbolism at a somewhat advanced grade.

2. Here we have sculpture or carving, which presents all stages of symbolic and artistic growth. The sculptured tablets at Palenque and the remarkable symbolic sculptures of Cosumalhuapa are the highest or best specimens but the rude pieces of pottery and carved stone relics found in the mounds the lowest.

3. The statuary of America has this advantage, that while it was arrested at an imperfect stage of development, it presents the primitive forms in which religious ideas found their embodiment and though it is regarded as inartistic yet it contains the most instructive specimens of religious art and contains within its diversified forms the most thoroughly developed symbolism extant. Not only this, but the native statuary is preceded by rude forms which show how the system of idolatry originated and what ideas embodied themselves in the idols. We thus find in the idols of the mound-builders and in the idols of the Toltecs the two extremes of statuary, but in both we discover that the religious sentiment was the ruling force, the hand of the sculptor having been always guided by his conception of divinity.

4. Inscribed figures and hieroglyphics in bass-relief are found in America as they are in Egypt. The inscriptions upon the stone pillars of Mexico are evidently expressive of the religious sentiments which prevailed there. These are among the highest or best specimens of American sculpture. Below these are the different grades. The inscribed rocks of New Mexico and of Colorado are one stage lower, the inscribed tablets of the mound

builders one stage lower than these, and the picture writing of the wild Indians a stage lower than these. Possibly the carved bone implements from the caves of Europe are a grade lower than the pictographs of America. Do these inscribed figures and hieroglyphics contain any symbolism? We propose to consider this question in connection with others, and shall search out the different grades and styles of the symbolic art as they are presented in America.

The study of the animal figures in conjunction with the symbolism contained in the relics and various specimens of art and architecture, is the one to which we call especial attention. We here give the comparison in a broad and comprehensive manner and shall give the details in full in the future part of this essay. We place the animal figures at the very beginning of all symbolic art, and maintain that symbolism found in the architecture, art and the pictographs were first embodied in these animal shapes.

If there was any earlier stage of symbolism than that found here it has disappeared. The animal figures which were painted upon the sides of the houses of the Iroquois may be considered as primitive specimens of symbols, as are the pictographs which are found among Western Indians. If we compare these rude figures to the carved images which are contained in pipes and specimens of carved stone, or if we compare them to the massive effigies which have been formed out of earth, we should say that they were the most primitive class of symbols. These were evidently symbolic, for the figures of the animals among the Iroquois are known to be clan or tribal signs and the pectographs are also known to have been symbolic. We believe that the effigies were all of them symbolic, for many of them were used as mechanical contrivances but were fetichistic in their character, symbolic form and mechanical structure, serving the double purpose of convenience and fetichistic protection. The religious sentiment was doubtless the motive which led to the erection of these remarkable mounds, but this same motive led also to the engraving or carving of similar figures upon pipes, to the moulding of them into pottery, and inscribing them upon tablets. The same motive led to the erection of carved pillars in front of the houses of the inhabitants of the north-west coast, and to the erection of the sculptured stone pillars at the basis of the pyramids of Central America. It is very singular that these animal forms are found so extensively in all parts of the continent and that they form so prominent feature in the primitive art of America. We judge from this circumstance that they all had their origin from one common source, namely, the primitive animal worship which prevailed upon the continent but which appeared most forcibly among the emblematic mound builders.

This animal worship may not be recognized in all symbols,

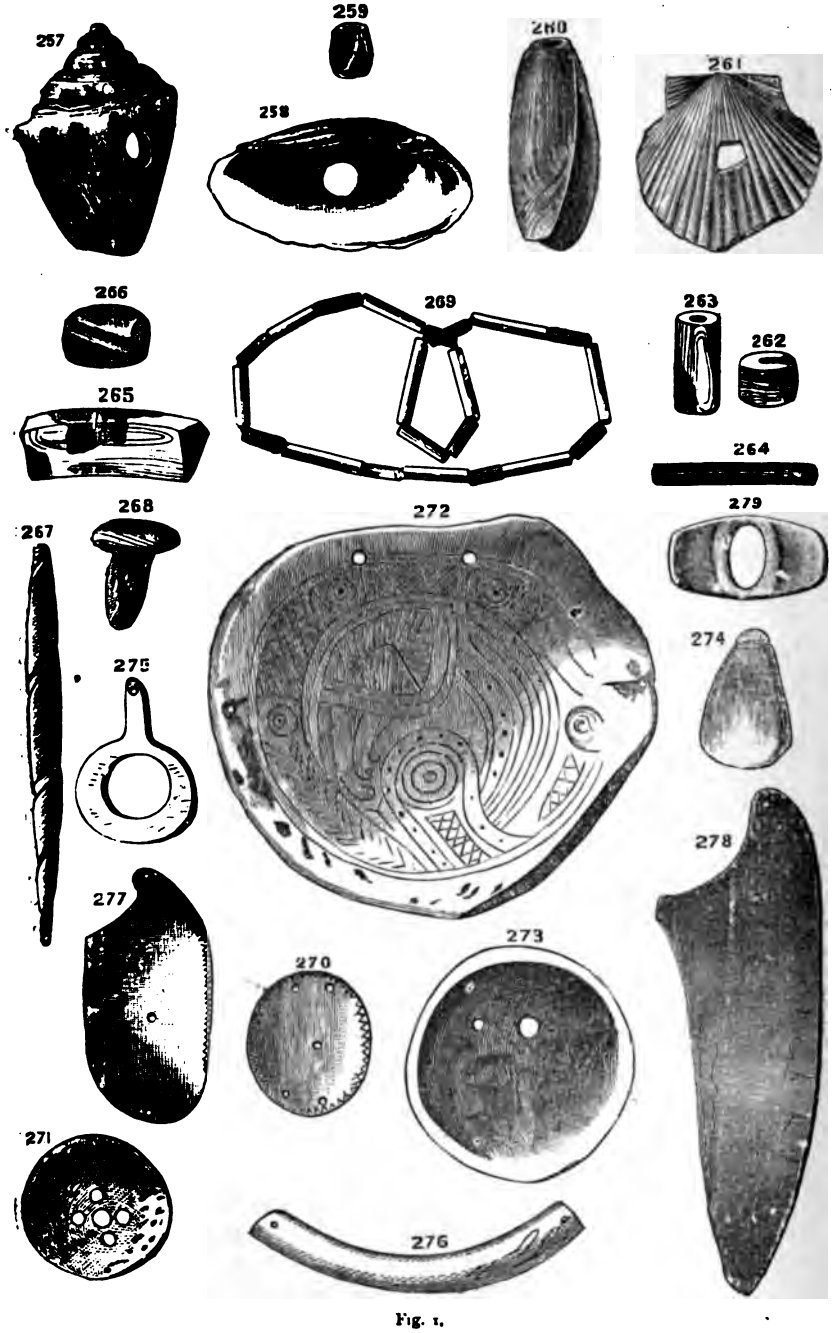
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Fig. 1.

for there are many kinds of worship. Sun worship and even idolatry or human personification may be recognized in some of them, yet the earliest or most primitive forms are those which present animal figures. We judge that this worship was really the first source of the whole system. This idea we shall endeavor to illustrate, as one of the chief points which arise in connection with the study of the subject. The comparison of the emblematic mounds with the carved relics and inscribed figures would suggest this, but the study of the figures themselves enable us to carry out the point to a much greater extent.

Turning to these animal figures we shall illustrate from them the different stages of symbolic growth. There were many different lines by which symbolism has been perpetuated. 1. The inscribed figures. 2. The line of pictographs. 3. In the line of sign language. 4. The carved relics. 5. By architectural structures. 6. By hieroglyphics.

I. We call attention first to the inscribed figures. We shall show how a latent symbolism may have been contained in the rude ornaments but which has come out by degrees. The progress of the art of inscribing figures has been illustrated by Dr. Rau in connection with the description of the relics which were seen at the Centennial Exhibition. See Fig. 1. The shell ornaments which are now in the cabinet of the Smithsonian Institute, have been described by him and their artistic and symbolic character pointed out. Some of these were mere perforated shells which were worn as rude ornaments, but others are quite elaborate and suggest latent symbolism in the figures inscribed upon them. They were gathered from many different localities; the shell heaps of Florida (257); the mounds of Tennessee, (258); the shell heaps in California, (260). Some of them are beads taken from Dos Puebloes Santa Barbara, California, (262, 263, 264 and 265); from Georgia, (266); one pin shaped relic from Florida, (268); Wampum beads, (269) from Upper Missouri; disks perforated with holes, from Santa Cruz Island; pendants from New York, (274 and 275); Crescent shaped pieces (276), symbolic irregular forms from California, (277, 278 and 279); and last the inscribed serpent (272) from Tennessee. These different specimens show how ornamentation grew into symbolism, the gorgets which were worn as ornaments ultimately being charms and totem symbols which were expressive of the religious sentiment of the person wearing them.

We call attention to one figure which is here formed upon the inscribed shell. It will be noticed that the figure of a serpent or rattle snake with mouth open, body coiled up, is the one which here presents itself. This is a very common figure in the so-called shell gorgets and especially on those found in Tennessee. It would seem that in this region and in Ohio, serpent worship had become very extensive. At least the form of the serpent

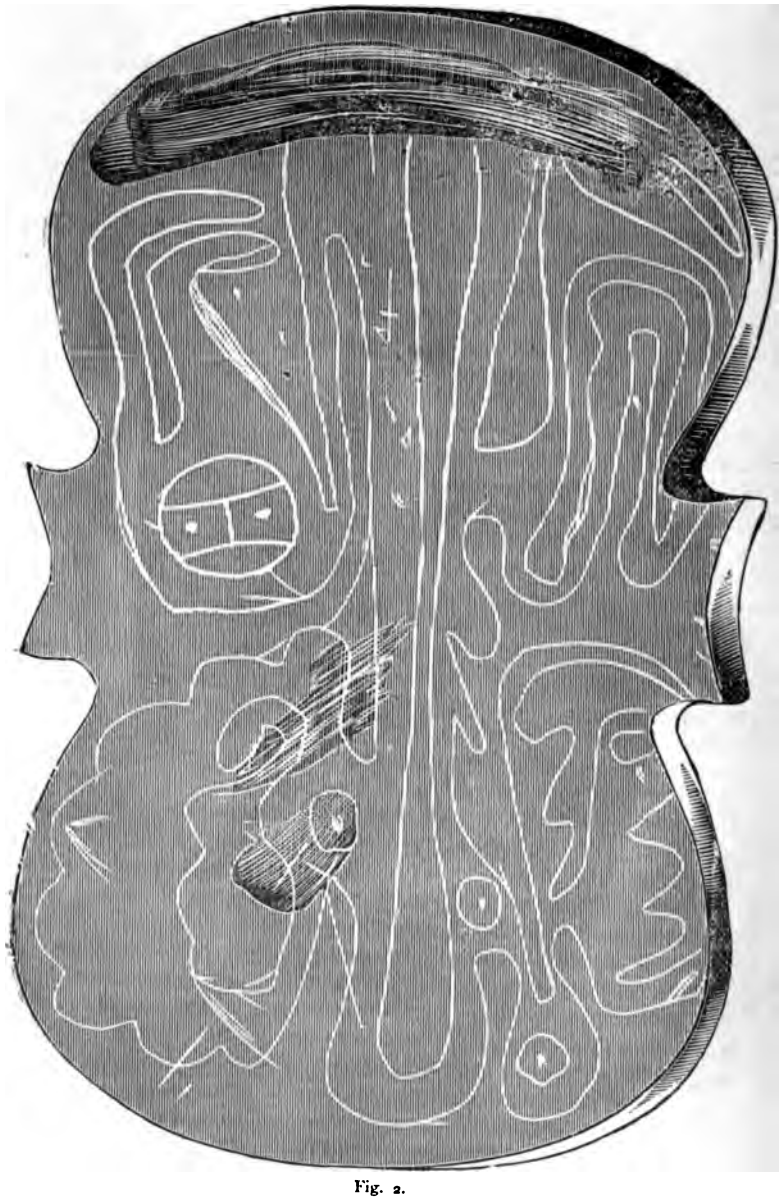

Fig. 2.

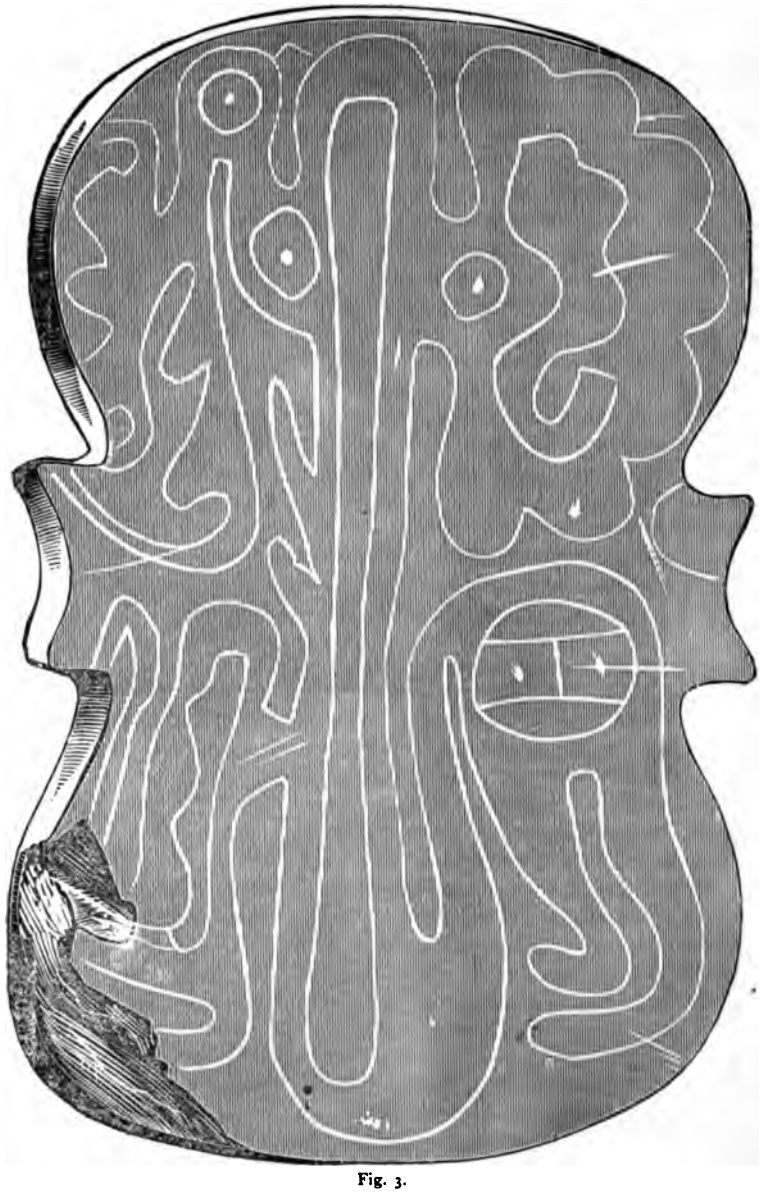

Fig. 3.

was as much set by as if it was a ruling symbol and gives the impression that this peculiar form of superstition had gained lodgement in these localities. It would seem that serpent worship had great effect upon the art and architecture of America for the form of the serpent appears everywhere. The serpent was not, however, the only animal which was embodied in the symbols of this region, for there are many other figures on the inscribed shells and tablets. Among these we may mention the duck and wild goose and other feathered creatures.

We call attention to the so-called "Berlin Tablet," (see Figs. 2 and 3.) This was evidently symbolic. The shape of the tablet presents the same contour which many of the ceremonial axes do. The same shape is sometimes seen in the earth works themselves. The tablet is inscribed with a certain mystical figure which resembles in its outline a feathered creature, either duck, loon or goose. The tail is spread out, head thrown back, breast thrown out, legs drawn up in front, wings drooping behind, but all traced by a single unbroken line which follows the contour of the tablet itself. The only separate figures upon the tablet are an oblong oar in the centre, a drawing which resembles a duck or goose in the tail and three dotted circles which resemble the sun.

This tablet we believe is genuine. *It was taken from a mound near Berlin, Jackson county, Ohio. The material is fine grain sand stone. It was found by Dr. J. E. Sylvester below charcoal and ashes and mucky dirt and burnt sand rock, about five feet below the surface of the ground. It was standing on edge unattended by other relics except pieces of graphite and two arrow heads.

The Gest Stone or "Cincinnati Tablet," is another prehistoic relic which shows that symbolism was common among the mound-builders. This is supposed to contain a picture of the human form but the figure is a complicated one and is not easily recognized. †

The Gest Stone has the same characteristics which the Berlin tablet has. Its contour is expressive of a familiar symbolic shape and is bordered by parallel lines. It contains various marks as if it might have been used either for a tally stone or tablet or as a sort of calendar to keep the record of feasts. It was taken from a mound in Cincinnati in 1841 and is undoubtedly genuine. The tablets found near Wilmington resemble these in some particulars but this has been doubted and so we leave it out of the account. The inscribed figure is

*It was described by Dr. Sylvester in the Antiquarian for July, 1878.

† See American Antiquarian Vol. 1, No. 2, and North Americans of Antiquity, pp 46, also pamphlet by Rob't Clark. The inscribed shells have many figures resembling this and together with the tablet show that symbolism was quite extensive among the mound-builders.

folded together and presents many complicated lines and yet contains within the folds a hidden likeness this time to a human face and form, rather than to any animal shape. It resembles certain inscribed shells in that the human figure is represented with limbs and arms so drawn up as to be scarcely recognizable and yet when the human figure is once seen it can scarcely be lost sight of again, thus making the tablets to resemble the puzzle pictures which have become common in modern days.

The Berlin Tablet is very interesting, as it shows that animal figures were sometimes used in a symbolic manner, and that a hidden significance was attached to them. We do not pretend to interpret the tablet or to explain its object. It seems, however, to have been placed in the mound as a sacred memento and possibly may have been used as the shell gorgets were, as a personal charm or fetich. It may have been an object which was regarded as sacred, and which symbolized the clan totem of the person who was buried, or it may have been a symbol of the Dream God or personal divinity of the individual, or it may have been the official badge of some medicine man, or the plate on which the tribal record was perpetuated. We know that such figures were common and that they were frequently painted or carved upon the grave posts of Indians to indicate the clan connection and the personal name of the individual. Sometimes there were two or three animals inscribed upon a grave post and with them, certain arbitrary marks. In these cases one animal figure would represent the tribal name, the other the personal name and the arbitrary marks would represent the history of the individual.

II. In the line of inscriptions and pictographs, we also see that animal figures were used in a symbolic manner. There are many specimens of pictographs among the prehistoric races of America. We have referred to these in another treatise*. Some of these pictographs were the work of the modern Indians, and have been explained by them. Others, however, are more ancient and are without explanation. One peculiarity of most pictographs is this, that they contain certain conventional signs, which were used as symbols, to express thought in a secondary manner. The primary method of picture writing, is to make the picture itself express the thought, but the secondary is to make the symbol express it. These two methods are nearly always combined in pictographs, for we seldom find a picture except, certain signs accompany the figure. Schoolcraft has described the pictographs of the Indians. These pictographs are used for a great variety of purposes. One use was to make a record of the treaties which the tribes had made. In these treaty records, the picture of certain animals is given. The animals signify the

*See papers on Picture Writing.

tribal names or totems, but a line is drawn from the eye or the heart of each one of the animals to the eye of the others, thus signifying that the head and hearts of the tribes were united. This was the primitive method of expressing thought by a symbol, the line itself being the symbol.

There were many other signs which were more arbitrary and more difficult to understand than this, but it shows the method of using symbols. The question here arises whether this kind of picture writing was common among the ancient mound-builders. There are a few tablets and relics which have been exhumed from the mounds which would indicate that some such method of picture writing was common, but as a general thing symbolism among the mound-builders was more advanced than among the modern Indians. The Davenport tablet is a good specimen of picture writing, it resembles a pictograph, but contains no symbols. An interpretation of these tablets has been given by Mr. Horatio N. Rust. His interpretation is, that both were descriptive of a hunting expedition. The picture of the mound represents not a sacrificial scene but an earth lodge, in which a dance was being held.* The "prostrate forms" represented those persons who were overcome by the efforts and excitement of the dance. The "curling smoke" arose from a fire in the lodge, indicating that the dance was held in cold weather. The "moon and stars" indicated that the dance was held in the night. The "upright marks" around the lodge, represent a fence of sticks set in the ground. The "irregular markings" (phonetic characters) which some persons have tried to interpret as evidence of a written language, were simply ornamental markings, conveying no intelligence. This interpretation was secured by Mr. Rust from certain old men of the Dakota tribe. His opinion is that the tablet is not very ancient, but was the work of the Indians who built mounds in quite recent times. We call attention to the tablets because there are many animal figures upon them. The query is whether they are mere pictographs or whether they have a symbolic significance.

If the tablets are genuine, they belong to a low stage of social cultus, and would more properly be classed with the relics of the modern Indians than the works of the older mound-builders.

A better specimen of symbolism as connected with picture writing is found among the inscribed rocks of Colorado and New Mexico. We give a cut of one group of pictographs. (See Fig. 5). It is taken from the report of Mr. W. H. Holmes and represents the picture writing which was practiced by the cliff dwellers. In this group of pictographs there were several figures which were intended to represent human forms. (1, 2 and 3). These were inscribed on the rocks. Others representing human

*See proceedings of the Am. Association at Montreal, Aug. 1882, page 584.

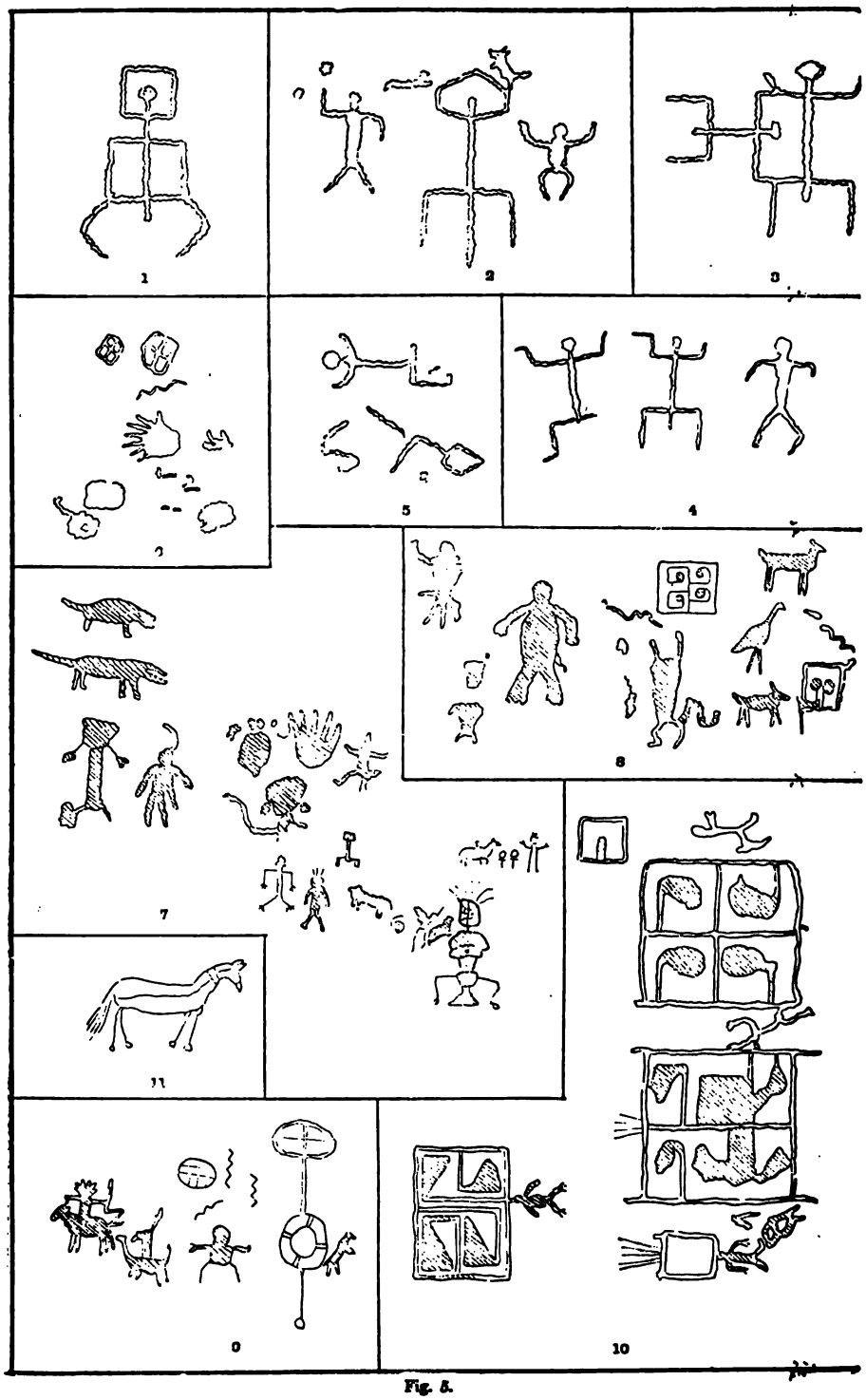

Fig. 5.

forms (4, 5 and 6), were painted in red and white clay. Others (7) represent animals, such as the lizard or alligator. Others however, were symbols, (10), and may represent pipes or tribal emblems. They resemble the pattern on pottery of this region. Others (11) are modern, are supposed to have been made by the Navajo Indians. A description has been given by Mr. E. A. Barber* and by Mr. Holmes. Mr. Holmes says that in the figures given in the ancient work there is no animal resembling a horse and we can hardly suppose that artists who would so cleverly delineate birds and deer and men, would fail in an attempt to represent an animal of so marked a character.

These pictographs are valuable to the archæologist as they exhibit the grade of civilization reached by the tribes which inhabit the cliff dwellings. They are found in the Canon of the Mancos, on the bluffs of the San Juan, and are associated with the cliff dwellings. There is no doubt that some of them are ancient and it is noticeable that these contain symbols, while the modern contain only pictographs.

Another specimen of picture writing in which animal figures are conspicuous and in which symbolism is apparent is found in Fig. 12 of the same report.† The interpretation of this Mr. Holmes says: "The most striking group observed is given in Fig. 1, plate XII. It consists of a great procession of men, birds, beasts and fanciful figures. The whole picture as placed upon the rocks, is highly spirited, and the idea of a general movement to the right skillfully portrayed. A pair of winged (human figures) hover above, as if to watch or direct its movements. Behind these are a number of odd figures followed by an animal resembling a (reindeer) which seems to be drawing a notched sledge, containing two figures of men. The figures in the main body of the procession appear to be tied together in a continous line. Many of the smaller figures above and below are certainly intended to represent dogs, while a number of men here and there as if to keep the procession in order. The symbols of this picture are found in the pipes and not in the animals, though the line which connects the animal figures may be regarded as symbolic. The object of the picture may be to represent a treaty, or the allegiance which certain tribes were ready to make with the tribe whose symbol is seen in the council house or place where the pipes were stored. In that case the animal figures would represent the totems of the clans or tribes making the treaty.

III. The sign language should here be mentioned. There are many specimens of sign language extant. In these specimens animal figures are very common. One good specimen

*Hayden's report for 1876, plate 11, page 20.

†See also Am. Antiq. Vol. V, No. 3, and the papers on Picture writing, reprinted from the same.

of sign language* has been given already upon the article on picture writing.

The "picture caves" at West Salem also contain good specimens of this same sign language. Here the animals are represented with the line projecting from the mouth as if it indicated speech† These inscribed figures were evidently the work of modern Indians. The question arises whether there was any such practice among the ancient mound-builders. We do not say that sign language was not known to the mound builders, but in specimens which have been discovered, so far as we know, the symbol of speech is a very simple affair. This symbol is frequently seen on the sculptured tablets of Mexico and Central America, and it is singular it should not have been employed by the mound-builders.

IV. Carved Relics. The prevalence of animal figures in the carved relics has often been noticed. These are found especially in the pipes, but they are also exhibited by the specimens of pottery and by other relics found in the mounds. We shall not dwell upon these but shall turn to the carved and moulded animal figures which are common among the Pueblocs. These illustrate the point. It may be disputed whether the mound-builders' relics were symbolic or not but these Pueblo relics certainly were. Our authority on this point is Mr. F. W. Cushing. He has entered into the study of the subject and has learned the significance of many of the carved objects. We give here a cut which was used by Mr. Cushing in his report.‡ (See Fig. 6.)

"Another highly prized class of fetiches are those which are elaborately carved. They show evidence in their polish and dark patina of great antiquity. They are such as have been found by the Zunis about Pueblo, formerly inhabited by their ancestors, or are tribal possessions which have been handed down from generation to generation until their makers have been forgotten." The use of these fetiches is chiefly connected with the chase, though they are sometimes supposed to possess the guardianship of the six regions, a sort of geographic mastership, but the medicine powers are supposed to emanate from them. The "prey-gods," through their relationship to the chief divinityship, po-shai-an-k'ia, "as Makers of the Paths of Life," are given high rank among the Gods. There are six species of prey animals, and each species is again divided into six varieties, the color determining the location or region to which it belongs. The animals represented are as follows: The "Mountain Lion," which is the hunter god of the North; the Coyote, the hunter god of the West; the Wild Cat, the hunter god of the South; the Wolf, the hunter god of

*See Mallory s Sign Language Ethnological Bureau Report, also Am. Antiq. Vol. VI, No. I.

†See Am. Antiq. Vol. VII, No. 2.

‡See second annual report of the Ethnological Bureau.

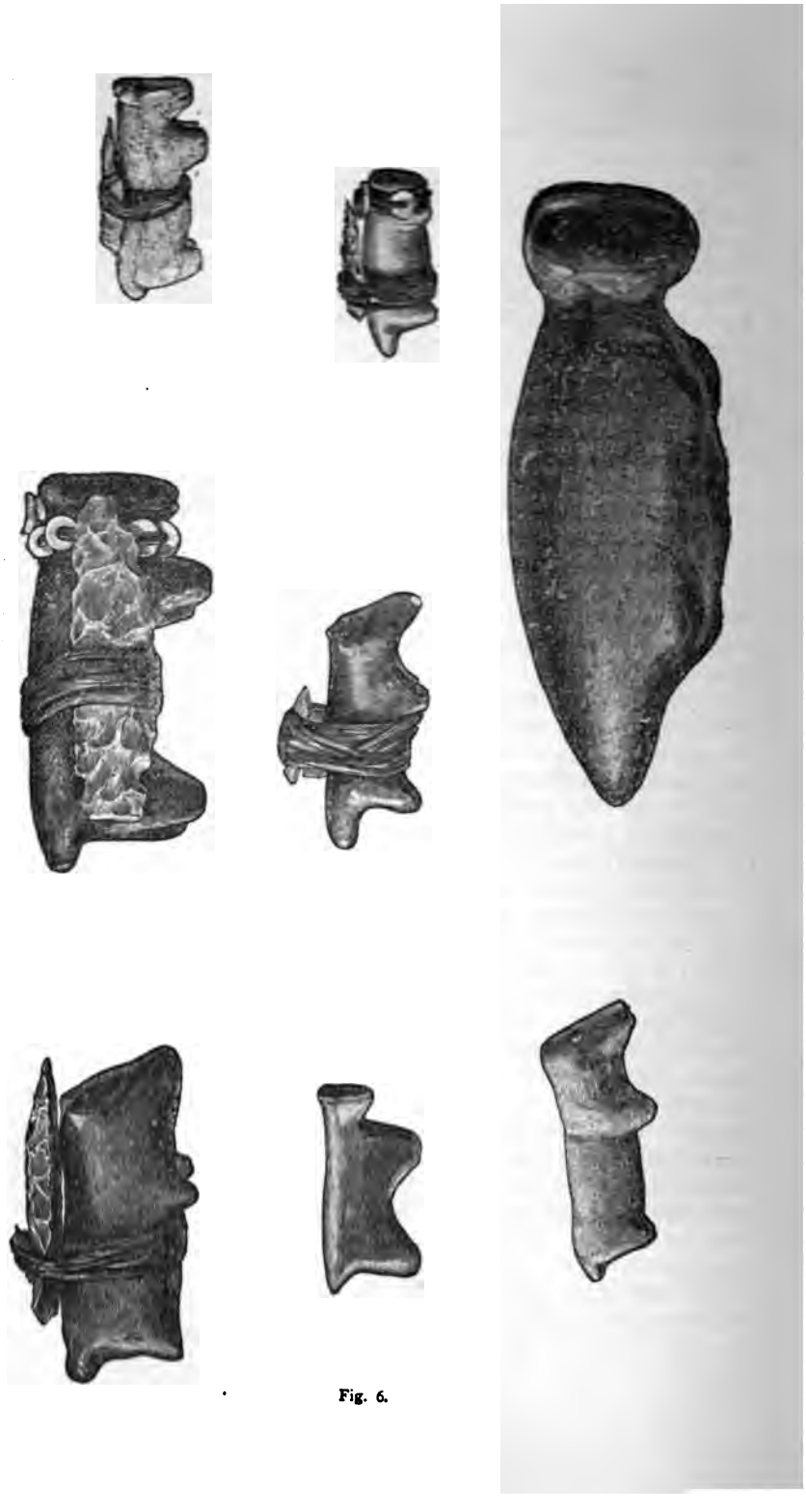

Fig. 6.

the East; the Eagle, the hunter god of the Upper Regions, and the mole, the hunter god of the Lower Regions. The fetiches of the wild cat are represented on the plate, Fig. 6. They are characterized by short horizontal tails. Fig. 1 represents the fetich of "the yellow wild cat" of the North. It is of yellow lime-stone, stained with blood. It contains an arrow point of chalcedony bound with blood stained cordage and a necklace of white shell beads. Figure 2 represents "the blue wild cat" of the West. It is formed of Basaltic clay of a grayish blue color and is furnished with an arrow point of jasper. Figure 4 represents "the red wild cat" of the South. It was formed from gypsum, but changed red by the application of paint. It is supplied with the usual necklace and arrow point. Figure 6 represents "the white wild cat" of the East. These are of compact white lime-stone carefully polished. Figure 7 represents "the many colored wild cat" of the Upper Region. It is made of Basaltic clay, stained black with pitch and pigment and furnished with a flake of flint and a small fragment of stone attached to the back, with a binding of sinew. Figure 8 represents "the black wild cat" of the Lower Region. It is little more than a concretion of compact Basaltic rock. Its natural form is suggestive of the animal. Long use has polished it to the hue of shining jet. These different fetiches of the wild cat show that the symbolic character of the relics became very elaborate. The color and the shape of the relic, as well as the ornament attached, all have a special significance and indicate the region over which the divinity presides. Other specimens of carved animals might be referred to, but these will suffice to show the symbolic character of the animal figures.

V. Architectural ornamentation and sculptured stone facades frequently illustrate the symbolic character of animal figures. We give one specimen. It is taken from the drawings of the ruins at Xochicalco in Mexico.

We quote the words of Mr. E. A. Allen, the author of "The Prehistoric World." He says the ornaments are not stucco work, but are sculptured in bass-relief. As one figure sometimes covers parts of two stones, it is plain they must have been sculptured after being put in position. The height of this front is nearly fifteen feet. In the left hand corner of this sculpture will be perceived the head of a monstrous beast with open jaws and a protruding tongue. This figure is constantly repeated in various parts of the facade. Some have supposed it to be a crocodile. The rabbit is another figure which constantly appears in portions of the wall. "Some idea may be formed of the immense labor with which this building was constructed from measurements made of several of the masses of porphyry that compose it. One stone was nearly eight feet long by three broad. The one with the rabbit is five feet by two and a half. This

specimen is interesting, as it illustrates the prevalence of animal figures in the symbolism of the civilized races.

In passing over the symbolism of the uncivilized races, we have seen that there were three grades of it, corresponding to the three grades of cultus. We have found its embodiment in many and various tokens, such as the inscribed tablets, specimens of carved stone, specimens of picture writing and symbolic effigies. In all of these, animal figures were common. We now find that the symbolism of the civilized races was much more complicated and much more difficult to understand. A great change appears, giving rise to the idea that possibly there was an intruded cultus which had an effect to greatly modify the system among these races. Everything is so far advanced that the primitive symbols have disappeared.

Fig. 7.—RUINS AT XOCHICALCO.*

The figures have now come to contain a secondary meaning which is very remote from that which is suggested by a picture. Symbolism had reached a stage which can be compared only to the ideographs of the Egyptians. The symbols represent ideas but they are neither pictures nor are they phonetic characters, but are arbitrary signs which have come to have a meaning known only to the priests or to certain classes of the people. The meaning was not suggested by anything in the signs themselves. The ideographic art has taken a leap, which precludes our following the scent. We must come to it from a different side, and we may not be able to connect the two lines

*We are indebted for the use of this cut to Mr. E. A. Allen.

of growth, even if we discover the place where the new form of symbolism entered upon its course. In reference to these ideographs of the civilized races, we would say that there are two or three classes of them, those of Mexico being of one grade, and those of Yucatan and Central America of another grade, and those of Peru and the United States of Columbia of still another. There is, however, a similarity between these different grades, and the system in one can be understood by that found in the other. There are three or four sources of information in reference to the symbolism of the civilized races. These are as follows. (1.) The sculptured glyphics on the monuments and tablets. (2.) The carved figures which are found in bass-relief and sometimes in the round. (3.) The various written characters which are contained in the so-called "Codices" or manuscripts, which have been preserved by the Spanish and which are supposed to represent the primitive alphabet of this region.

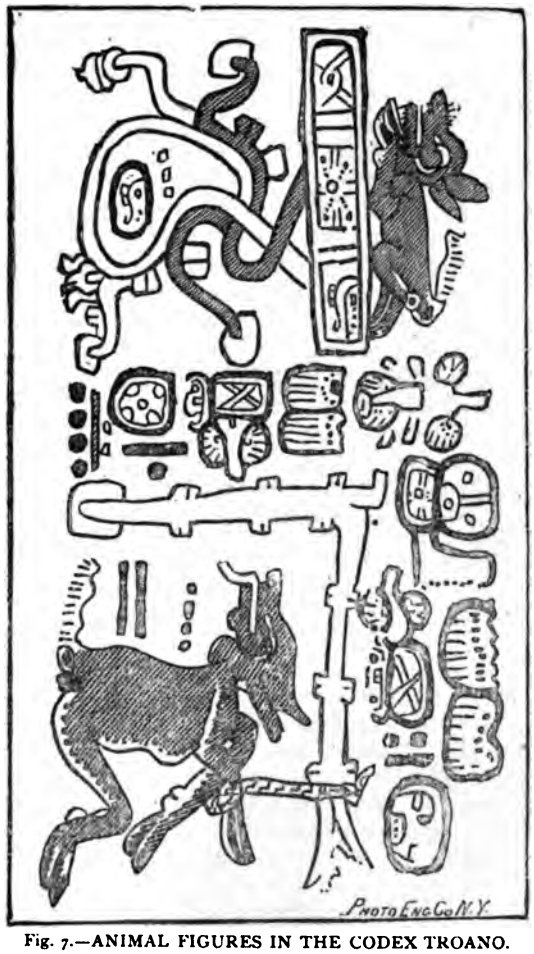

Fig. 7.—ANIMAL FIGURES IN THE CODEX TROANO.

VI. The hieroglyphics and the accompanying pictures, which are found in the Codices will form the last class of objects of which we shall at present speak. These illustrate the stage of symbolism which was common among the prehistoric people of Central America. We present a cut which will illustrate this.

This is taken from plate 10 of the Dresden Codex Troano. If the reader will study the hieroglyphs in the cut he will see that they were similar to phonetic letters.

The animal figures are worthy of especial notice. These are very rude in their appearance and in their form resemble the common picture writing. The symbolic or phonetic characters seem to be explanatory of them, still the animal figures are supposed to be symbolic, though no one knows what the meaning of them is. A free translation of the column of hieroglyphics, according to Prof. Cyrus Thomas, is as follows: "Facing the south, place the tortilla of Maize on the pan of burnt clay and turn it six times."*

This is not very clear and does not throw much light on the meaning of the animal figures.

The animal hanging to the branch of a tree Prof. Thomas calls a deer. The other to the left may represent the hare. These animal figures evidently meant something, and it is probable that the hieroglyphics and the pictures explain one another, but the symbolism is so hidden that we can not at present interpret either of them. We refer to it here merely to show how common animal figures were. The ideographs of the Toltecs and the Maya races abound with these animal figures.

We have now passed over the different parts of the continent and have shown that these figures are very common in the prehistoric art. A comparison between the different specimens will show how universal animal symbols were, but it will also illustrate the fact that the symbolism became more elaborate, mysterious and complicated. The historic connection between the animal worship of the effigy mound builders and the sun worship of the monument builders has not been shown. What is more, it would be difficult to show it, but we think our readers will conclude that symbolism has exhibited various stages of development in the different parts of the continent and yet retained animal figures throughout all grades.

*A study of the manuscript Troano pp. 162, Contributions to American Ethnology, Vol. 5.

CORRESPONDENCE.

THE IROQUOIS WHITE DOG FEAST.

It is an interesting question whether the White Dog Feast is of any great antiquity among the Iroquois, and it would seem that it is not. My own impression is that it came from the west at a comparatively recent period, being first adopted by the Senecas, and extending partially to those farther east. I do not remember any early allusion to such a feast, beyond the fact that dogs were often eaten at war feasts. Father Jaques, when in captivity to the Mohawks in 1642–3, said that they offered at that time sacrifices to the demon Agreskoi in mid-winter of two bears, entreating his indulgence because they had not eaten human sacrifices before him, when they last took Algonquin captives. "But if we ever again capture any, we promise thee to devour them, as we now do these two bears."

While Dablon and Chaumonot were among the Onondagas, in 1655–6, the annual war feast took place in the latter part of January and the first of February, but they mention no sacrifice of dogs. Dablon gave an account of the Honnonouaroria, or Dream Feast, which began February 22d and lasted three days. This is now connected with the White Dog Feast among the N. Y. Onondagas, but is shorn of its old turbulance. There was great disorder and strange interpretations and exemplifications of dreams. A feigned mad-man desired to kill the French, and burst into their cabin. Their host was indignant at the insult, pretended to be crazy, and set fire to his own house. Chaumonot rescued him, but he still raged. "They then offered him a dog as a victim to his anger, and to the god of his passion. It is not enough, he said, to efface the disgrace and infamy of the attempt to slay a Frenchman lodged in my house. They then made him a second offering similar to the first, when he at once became calm, and retired by himself as if nothing had occurred." But here there is no intimation of any national sacrifice. This is probably the original form of the feast, as much of the masquerading was almost identical with some existing forms and observations at Onondaga.

Charlevoix, in 1721, being familiar with Iroquois life, took notice of an usage peculiar to the Miamis, and perhaps some other western nations. "After a solemn feast," he says, "they placed on a kind of altar some figures of pagods. * * * The victims were to be dogs, and the cries of these animals, which were howling with all their might, and of the Indians who howled as if to

answer them, were heard on all sides. When the viands were ready, they were offered to the pagods; they were afterwards eaten and the bones were burned." His only mention of anything like this among the Iroquois, is that a chief going on a war party, makes a feast, "at which the chief, and, sometimes the only dish, is a dog. Some pretend that this animal is offered to the god of war, before he is put into the kettle, and possibly this may be the practice amongst some nations." Here is again no hint of a periodical feast.

Other writers might be cited who seem perfectly ignorant of any such custom, in any national way, among the eastern Iroquois at an early day. The earliest that we have is late in the last century, and among the Senecas. It was given by the Rev. Mr. Kirkland, and describes a seven days' feast among the Senecas, in January or February, when two white dogs were painted, adorned, and strangled the *evening before* the feast commenced. They were hung up in the center of the village, where they remained several days. "Toward the close of the festival they erect a funeral pile, place upon it the two dogs, and set it on fire. When they are partly consumed, one of them is taken off, and put into a large kettle with vegetables of every kind, which they have cultivated during the year. The other dog is consumed in the fire. The ashes of the pile are then gathered up, carried through the village, and sprinkled at the door of every house. When this ceremony is ended, which is always near the close of the seventh day, all the inhabitants feast together upon the contents of the kettle." As Mr. Kirkland preached to the Onondagas, and dwelt among the Mohawks and Oneidas, the presumption is that this feast was not customary in their villages. In the same way, during the Revolutionary War, while Mrs. Campbell was a captive at the Seneca capitol, Canadesaga, now Geneva, she saw this feast. A white dog was killed and carried in procession to a large fire, where it was thoroughly roasted and then eaten. This was early in the winter and not towards the spring.

The account given by Mary Jemison, the "white woman," is substantially the same, in time and circumstances, though she connects with it the idea of the forgiveness of sins, certainly now held by the N. Y. Onondagas in connection with part of the ceremonies. Mr. Morgan is the only authority to deny this belief. As late as 1813 a white dog feast was celebrated at Rochester, and in his account Mr. O'Reily says, "It may be premised that the Senecas, and probably others of the Six Nations, have five feasts annually," and he adds that formerly two white dogs were killed. It will thus be seen that the sacrifice of dogs was at first peculiar to a western nation, that all the early accounts of the White Dog Feast in New York are among the Senecas, and as many of the accompanying dances came from the west, it is every way probable that it is of modern occurrence in the east.

Apparently it varies a good deal in time. The earlier accounts make it a thanksgiving feast for success in hunting and war, as well

as beginning of a new year. Mr. Hale says that the Canada Onondagas celebrate it towards spring, in February or March. This year the N. Y. Onondagas celebrated it about the middle of January, and then went to join in the Tuscarora white dog feast a month later. But at the old council fire of the Onondagas it comes late in January or early in February, as a rule. There is some change even here. A generation since it was held at the old moon nearest the first of February; this year it came earlier.

It is easy to see how the ceremony is losing its most striking features at Onondaga, by a comparison of its observance this year with J. V. H. Clark's account of it in January, 1841. Ten to twenty young men were then chosen as managers for each side, who superintended all things. On the first day part of these went through the nation, calling all to the council house, and all the fires were extinguished, the ashes scattered to the winds, and a new fire was kindled with flint and steel. The second day the managers, in fantastic costumes, went everywhere gathering gifts for the festival. This continued for several days, while games employed those at the council house. On the first of the three great days, in still more fantastic costume, the managers went around, and were supposed to be gathering the sins of the people. In the evening, horribly arrayed, they "danced off the witches." The next day was one of festivity and preparation.

On the last day half a cord of wood was arranged as a sacrificial pile, and a house near the council house was selected as a place of preparation, where the managers were placed. At nine in the morning these led out two white dogs, decorated with red paint, wampum, feathers and ribbons. One was quickly strangled and hung up on a ladder, and the other one soon followed. Firing and yelling succeeded, and a half hour later the dogs were taken into the preparation house, where the people's sins were transferred to them. Then they were slung over the shoulders of two men, and a double file of Indians followed them slowly around the house of preparation, through the council house and around it. In single file they re-entered, and the dogs were laid on a low platform.

In the council house, meanwhile, offerings had been made, which were received with blessings by the chief in charge. The procession with the dogs, moved thrice around the platform before they were laid down, and each time the chief stopped the foremost bearer and whispered in his ear. When they were deposited the procession still moved around singing loudly.

The wood outside had been fired, and was now half consumed. The procession formed again, and marched, singing, thrice around the fire, when the master of ceremonies stopped on the west side, facing the east, and offered prayer. During the singing that followed a dog was cast into the fire, and with another prayer and more singing the second followed. Then came the casting of tobacco and other things on the pile. The other proceedings were unimportant.

This differs somewhat from the feast that Mr. Morgan attended

among the Senecas. That also, was about the first of February, and lasted seven days. The white dog was burned on the fifth day, and before that the people confessed their sins. On the first day, however, the white dog was strangled, and besides his other decorations a string of white wampum was hung around his neck. I think the significance of white among the Iroquois is of recent origin. The dark wampum is most precious, and the strings that represent the nations are mostly composed of this. Yet the moral law is taught to a new chief on ten strings of white wampum. "All white, all good," said a chief to me, "same as your bible."

On the second day came the cleansing of the hearths, but it does not seem that there was any extingushing or kindling of the fire. On the fifth day the dog was taken down from the pole on which he had been suspended, and burned soon after. It was first laid on a bench in the council house, where an address was made, which was followed by singing. Then a procession was formed, the officiating Indian leading, followed by four others bearing the dog on a bark litter. They marched around the altar, and the leader faced the rising sun; the dog was laid on the fire with some usual ceremonies. Two days of feasting followed, and the peach-stone game concluded the festival.

In 1882 the N. Y. Onondagas assembled towards noon for the annual burning, but there is but one dog now. First the squaws told their dreams, and there was an attempt at interpretation. Just at noon a tall Indian came in with the dog hung over his shoulder by a strap about its neck. Receiving some directions he went out, but soon returned bearing the dog, while another brought in a basket of tobacco. The animal was laid on a platform, and a procession moved around it with a solemn chant, when it was taken up and carried forth and burned. The chief removed his head-dress during his prayer, and the usual offerings of tobacco followed.

Last year and this, the feast has had a curious practical turn in burning the dog. For instance in the one just held, at 11 a. m. the door of the council house opened, and the procession came in, the last man, Thomas Webster, bearing the dog by a cord slung over his shoulder, and tied to its forelegs. It was laid on a bench, and the procession moved around it. Prayer was offered, the dog taken up, and the procession went to a house near by where the Beavers were assembled. Offerings of tobacco were made here, and the procession returned to the council house. A basket of tobacco, adorned with ribbons, was placed by the dog, the cover of the great and glowing stove was removed, and dog and basket were placed within it. With singing the ceremony ended.

The house where the Beavers were assembled has been mentioned. All of the Onondagas do not attend the white dog feast, but the Bear, Wolf, Turtle, Beaver and Snipe clans continue faithful. Some of these are now divided into two clans, and the Eel clan, now one of the largest, is unknown to most writers. The Onondagas have at least nine clans. Those which take part in the ceremonies are said to be now unequally divided into the Long

House and the Short House. These are the terms in use on the reservation, but they seem unknown to writers on the Onondagas.

Mrs. E. A. Smith says they are divided thus: The Bear, Deer, Eels and Hawk against the Wolf, Beaver, Snipe and Turtle. She also says that the Tuscaroras observe none of the national feasts, and it may be that the Onondagas went there this year to inaugurate a reformation.

Returning from this digression, it may be said that on the fourth day of the feast, a round dish containing six peach stones, is carried into each of the two houses, and the game begins. If in shaking these, one white side comes uppermost, it counts one bean. If all come up white, or all black, it counts five; and the house that makes the largest count in two days, takes charge of the remaining ceremonies. On the last day comes the peach stone game between the men and women, and if the women gain it is a sign of good luck. The day after the sacrifice is the time for naming infants and young men; and during this also, sins are confessed on a string of wampum, perhaps a memento of early Jesuit teaching.

A comparison of these feasts in New York, with that described by Mr. Hale among the Onondagas in Canada, shows wide differences in details, and many also exist between the Onondagas and Senecas. I doubt whether the other nations ever observed it as a customary feast. It may complete the view to outline Mr. Hale's account. There is a difference in time, the Canadian feast coming in February or March. The preparation of the dog is as at Onondaga, but it is brought in apparently without ceremony. The manager comes from without, and though followed in by a procession, he does almost every thing that immediately follows within and without the council house, the others keeping their seats. When he re-enters, a young man carries the dog out in his arms, and all the people follow. The pile has just been lighted, and the dog is laid on it, while another leader chants a hymn of thanksgiving, varied by the praises of others. More wood is heaped on the pile, hiding the victim; and as the end draws near, tobacco is repeatedly cast into the fire. With something like a benediction all is concluded.

Such is the past history, as far as we know it, of the White Dog Feast among the Iroquois; and such is its present observance. It may have had some foundation in the old cannibal feasts to Agreskoi, dogs taking the place of bears, as they did of men; but it seems more probable that it came in at the west door of the Long House, and may long have been a feast peculiar to the Senecas. However it came it is losing its solemn character, and will soon be among the things of the past.

W. M. BEAUCHAMP.

A MODERN MOUND BURIAL.

Editor American Antiquarian.

DEAR SIR: I herewith send you the following description of a mound, opened by one of the Bureau Assistants on the bluff back of Dunleith, Illinois.

This mound is conical in form, very symmetrical, sixty-five feet in diameter at the base and ten feet high. It was found to contain a rectangular vault thirteen feet long and seven feet wide, (inside measurement). The surrounding wall, three feet high and of uneven thickness, was rudely built of stone. Three feet from each end was a cross wall or partition of like character, thus forming a main central chamber about seven feet square and a narrow chamber or cell at each end something over two feet wide and seven feet long.

The whole vault had been covered over with a layer of logs extending across the width of the vault and their ends reaching slightly beyond the side walls.

In the central chamber were found eleven skeletons, six of them adults, and four children of different sizes, and one an infant in the arms of one of the adults, probably its mother. They had all, apparently, been interred at one time, and arranged in a circle in a squatting or sitting posture, against the walls.

In the center of the space, around which they were grouped, was a fine large shell of *Pyrula perversa*, which had been converted into a drinking cup by removing the columella. There were also numerous fragments of pottery.

The end cells, walled up as heretofore stated, were filled with a very fine chocolate colored dust, which gave out such a sickening odor when first uncovered that the workmen were compelled to stop work until it had evaporated.

The covering was chiefly of oak logs, nearly all of which had been peeled, and some of the larger ones had been somewhat squared by slabbing off the sides, and the slabs and bark thus removed, together with the small brush, had been laid over them. Over the whole vault, thus covered, had been spread layer after layer of mortar containing lime, each succeeding layer thicker and harder than that below it. Over this was a foot or more of soil.

CYRUS THOMAS.

EDITORIAL.

RELICS FROM SIBERIA AND JAPAN.

We propose to give a series of articles upon the relics of this country as compared with those in other lands. We have received a number of cuts from the American Antiquarian Society. These cuts illustrate one point and that is the resemblances that exist between the stone relics of this country and those which are found in Northern Europe. They are taken from an article prepared by Prof. Heinrich Fischer, of Freiburg, Baden.

CELTS IN SIBERIA.

Several of these cuts represent stone relics which are common in Siberia. Three of these are of unquestionable celt form. They are of polished stone and have the general shape of stone axes or fleshers, but two of them differ from the American type in that they have ridges or protuberances instead of grooves.

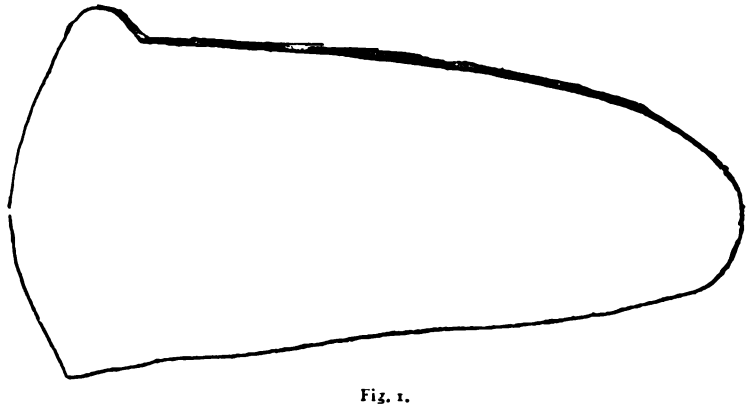

Fig. 1.

Figure 1 represents a celt which was taken out of the earth at Kegma on the river Angara. The material is of felsite tufa; color, yellowish gray. Its form is almost flat with a moderate convex swelling toward the middle. Its edge is semi-lunar with two protruding wings; size, 195 mm. in length and 95 mm. greatest width. This resembles the common hand fleshers found in America, except that the flare of the edge or blade has a sharper angle than is common.

Figure 2 is a celt found near the village of Zaledejewo. It is of a reddish color; material is felsite tufa; its length is 240 mm.,

width 70 mm. In shape the implement is flattened at one en
It has two wing-formed projections in the place where America
specimens have a groove. The ax
presents a kind of swollen back with stee
slopings. The edge has the lingual forn
These two specimens are chipped, n
ground or polished.

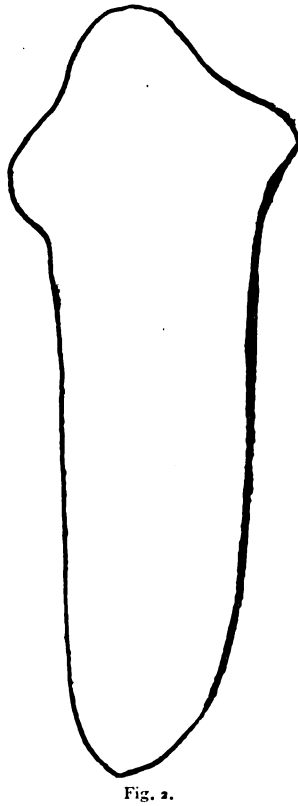

Fig. 2.

The third stone (Fig. 3) is similar t
the second, save that it is shorter an
wider. The color, green; size 200 mn
by 80 mm. It is said to have been brougl
from Kamtschatka. Material the same as the preceding. The peculiarity of the felsite tufa is that when chipped it shows a conchoidal fracture of sharp edges. The Siberian prehistoric man was careful to select this species of stone and shape it for his purpose by chipping. It is generally regarded as a sign of a lower grade that implements are chipped instead of being ground. We have in this country chipped stone axes and celts like these, but they are generally of a different form, having no projections on the axes and very seldom flaring at the edge. We do not pretend to say which is the most advanced, the Siberian or the American. Tennessee is the chief place where chipped flint celts, scrapers and fleshers are found. There are great numbers ot them in that State. The Tennessee specimens are ground at the edge and differ from the Siberian specimens in this respect.

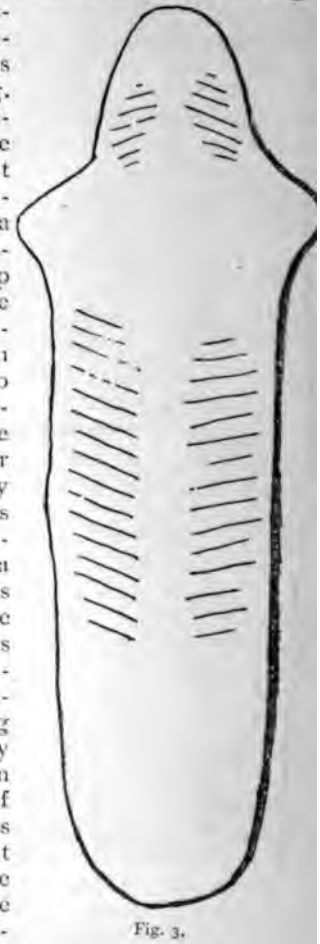

Fig. 3.

TABLETS, TUBES AND PICKS IN SIBERIA.

Figure 4 represents a stone relic found on the borders of the river Tchadobetz. Its form is four cornered, tapers gently toward

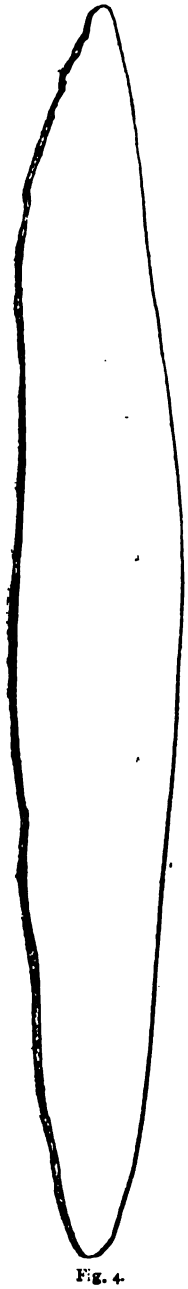

Fig. 4.

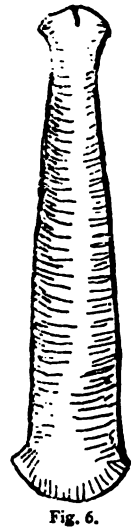

Fig. 6.

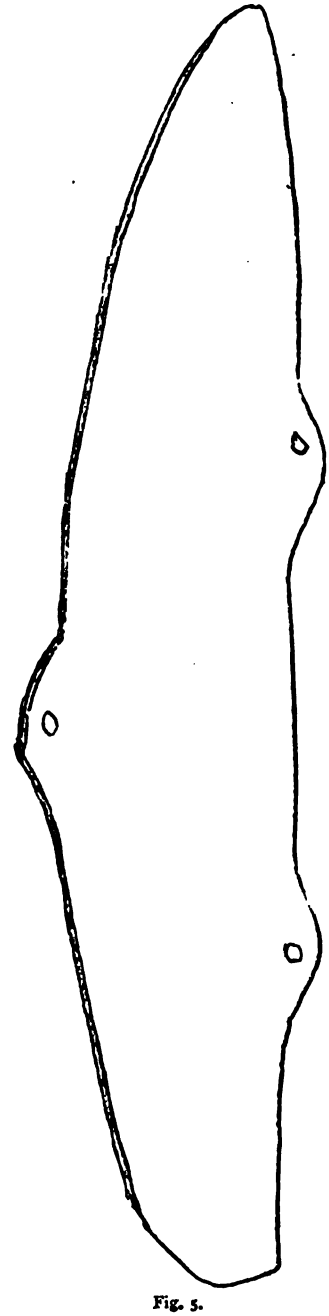

Fig. 5.

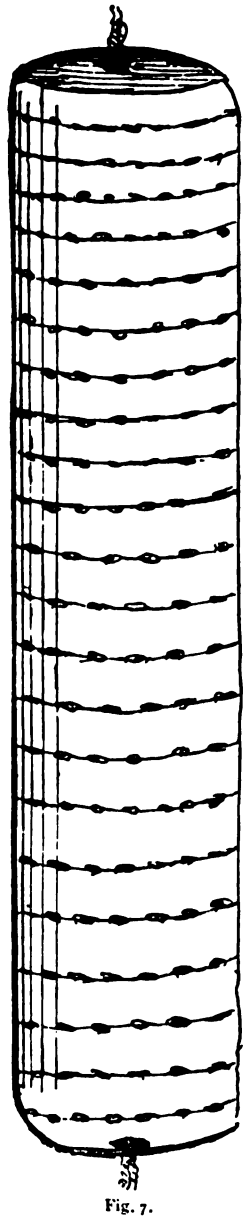

Fig. 7.

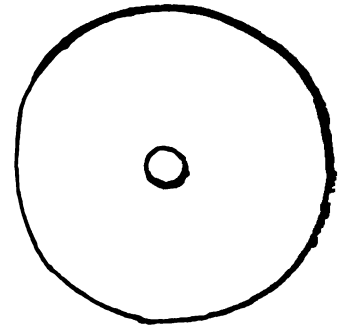

Fig. 8.

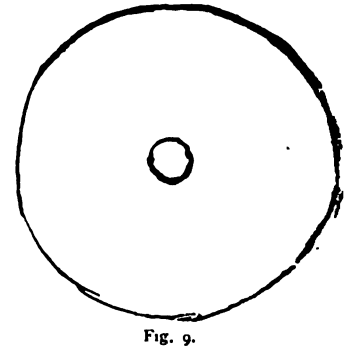

Fig. 9.

both ends. Its length 335 mm., each of the four sides 40 mm. The figure does not correctly exhibit the corners but merely one side.

Figure 5. This specimen is almost flat. It has three projections which are perforated. Its length is 368 mm. It resembles our perforated tablets in some respects. The sixth object, Fig. 6, has the shape of a spindle. Its material is slate, color violet gray. It is small, only 65 mm. long, probably an ornament. The next object, Fig. 7, is a perforated cylinder, length 115 mm., diameter 33 mm. It is of a yellowish color. The surface is covered with punctured spots and lines or annulations. The object of this specimen is unknown. It may be compared to the four cornered specimen, number 4, and also to the perforated tubes which are found in this country but differs from them in that it has the form of a cylinder rather than a cone. There were found close to it two perforated disks, Figs. 8 and 9; one 43 mm. in diameter, the other 41 mm. These were discovered at a depth of 6 meters, while building a road near the city of Krasnojarsk on the river Jenessei. The Siberian relics are all from the province Jeniseisk. They are interesting, for when compared to American relics they show resemblances and yet differences.

CELTS, HAMMER STONES AND CHISELS IN JAPAN.

In a description of stone relics from Japan a certain number of celts are represented. These are considered by the natives of Japan as belonging to a remote epoch. They call them "raifu," which translated means thunderbolts. Fig. 10 represents one of these celts or chisels. It has an edge ground sharp but only on one side. Chisels like this are rare. They vary from 15 in. down to 1½ in. Some of these celts were found inserted in wood and horn, similar to the Swiss celts. The author thinks that the smaller specimens were used for sculpturing pottery. Fig. 11 is a curious specimen from Japan. Dr. Emil Riebeck found great quantities bedded in shell and stone heaps. The Japanese call them "*Fundon ishi*," pound stones. In all probability they were fastened between two sticks of wood and used as a double bladed chisel or axe, as the sharpened edges seem to prove. Some of these axes are formed of pieces of stone which are bound together in the middle and have the edges of two sides of an irregular shape. The material of these is "Andesite," a volcanic product. Here we have a variation of the so-called balls or hammer stones, resembling in some respects relics found in this country but they differ in material, shape and size from Amer-

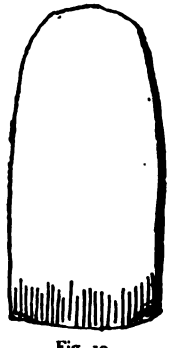

Fig. 10.

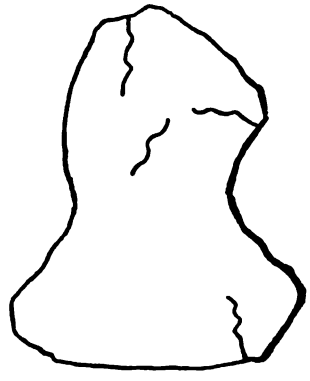

Fig. 11.

ican specimens. Another stone implement which is somewhat rare in Japan is what the Japanese call thunder hammer. It has the shape of a thick spindle. It is pointed at both ends and has two short swellings in the middle. The supposition is that it was employed like a double pickaxe, either as a weapon of attack or as a cutting implement.

Fig. 12.

MACES AND BADGES OF DIGNITY IN JAPAN.

Still another stone implement found in Japan is called the thunder mallet. See Fig. 12. The length of these is often three feet or more. Some of them show a knob at both ends. Instruments of the same shape, of wood, are used among the Ainos. They often present fine ornamentations and are used by the chief of villages as badges when called upon to settle a quarrel. The material is a soft stone, a fact which shows that they were used as maces by the prehistoric people.

ARROW HEADS AND LANCES IN JAPAN.

There are in Japan many kinds of arrow and lance heads, and occasionally specimens which we call perforators or drills. These are of different shapes. Some of them elongated, some short, with flaring tangs, some bayonet form. The material is generally obsidian, agate, rock crystal, opal, or slate. The Japanese connect the lance heads with curious traditions. They say that yearly a large host of spectres wrapped in dark storm clouds rush over the "Island of the Lance Heads," in the province of Dema. During their transit these lance heads are strewn in large quantities over the country. Figure 13 represents a lance head or drill which was designed to set in the hollowed shaft of a lance. Figure 14 is a form observed in Kamstchatka. It has a stem with a knob at its head. Specimens like these are not uncommon in America. Figure 15 has a three-sided bayonet form. These lance heads are sometimes used in opening dangerous abscesses. Another class of relics is common in Japan, called rice spoons. They are extremely small, are formed like a shell or like a boat, and seem to have been inserted into wooden handle. Figure 16.

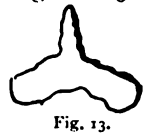

Fig. 13.

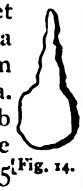

Fig. 14.

Fig. 15.

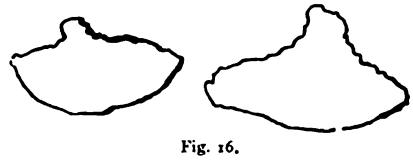

Fig. 16.

SWORD GUARDS.

Another relic found in Japan is what is called a

sword guard. The form is that of a half globe, the surface being polished and covered with small knobs or plates. See Fig. 17.

THE BEADS AND STONE ORNAMENTS IN JAPAN.

Among the relics of Japan may be mentioned certain ornaments which are found in graves in connection with metal or preserved in earthen vessels. They are beads of semilunar shape, perforated through the thickest part. See Fig. 18. The perforations correspond with the prehistoric borings of America, the centre being narrower than the circumference. These beads are supposed to be symbolic in shape, suggest either the moon or the male and female organs. They are called magatama. It is a singular fact that the Japanese Emperor has for his ensignia of office the sword, the mirror and the magatama. These insignia are not of arbitrary introduction, but of holy inheritance. The beads were worn by the warriors tied to the girdle, or around the neck, hanging down to the body, but were used only by persons of rank. They remind us of the shell beads and bear teeth worn by the warriors and great men in America.

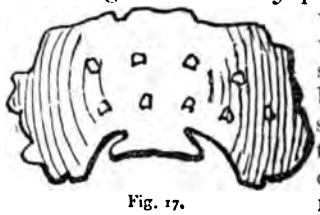

Fig. 17.

Fig. 18.

NOTES ON EUROPEAN ARCHÆOLOGY.

BY HENRY PHILLIPS, JR.

ETHNICAL MUTILATIONS.—M. Magtot made communication on the above subject (Jan'y, 1885), to the society d' Ethnographic de Paris, in which he divides them into six classes, viz:

I. *Cutaneous*, such as painting and tattooing the skin, and depilation.

II. *Facial mutilations*, such as the introduction of a foreign substance into the lips, the nose, the eyes.

III. *Cephalic mutilations*, enhancing deformities and trephinings.

IV. *Mutilations of the trunk and members*, such as amputation of the breast, wearing corsets, cutting off a joint at the death of a relative, Chinese foot compression, etc.

V. *Dental mutilations*, by fracture, extraction, filing, etc.

VI. *Genital mutilations*, circumcision, infribulation, eunuchism, voluntary castration, excision of the clitcris, *lalia*, etc.

To these he adds certain barbarous practices employed by the Peruvian and Mexican women in order to avoid conception and to excite the virile member by imitating lotions and stings of insects, and finally the use of the

Kalang, an ornamental piece of bone or wood, which to the number of two or three, was worn between the *prepuce* and *penis*.

SKULLS FROM SARDINIA.—M. *Gouin* (of Cagliari) communicates to the Societe' d' Anthropologie,of Paris, (Jan. 22, 1885), some remarks on the skulls found in the grotto of Arrevi, in Sardinia, in which he considers them to be of the same type as those in the caverns of Laugerie, in western France.

He also referred to the later discovery of a cavern at *Tamara*, where potteries of black earth are found.

Speaking of the *Nuraghis*, he considers them and all megalithic monuments of Africa to have been constructed by a people of the same origin as that which erected the monuments of Brittany, the Balearic Islands, etc.

M. Martillet stated, however, there were no meglaithic remains in Sardinia.

SPANISH AND PORTUGUESE GYPSIES.—M. Bataillard presented, in January, 1885, to the Societe' d' Anthropologie de Paris, a communication on the above subject, which he characterizes as "une etude trop neg'lige'e." He considers that no date can be assigned to the arrival of this strange people in Europe, that its whole ancestry was not derived from India, that the imigrations may have been successive, at long intervals. He dwells especially upon the well known ability of the race as metal workers, which is certainly a curious accomplishment for a *nomadic* tribe, of rude and barbaric acquirements and envirionments.

He enters into the consideration of two strange customs that prevail among them, the *latcho dielo* and the girdle of chastity and the use of the word *busno*, to designate one set of their blood, as the Hebrews call all except themselves "*goyim*."

CANNIBALISM AMONG THE RED-SKINS.—M. Ch. Letourneau read a paper on the above subject before the Societe' Anthropologie de Paris, (Jan. 22,1885), based upon observations of M. Farand, a missionary for fifteen years in North-western America. Cannibalism he considers of two kinds, one when reduced to it by famine, the other as practiced in war (by the Cree and Blackfeet Indians),on the field of battle. Here the idea is that by eating the heart of a warrior all his bravery will pass into his devourer. It was stated by M. de Nadenltoc that Sitting Bull's band of Sioux had opened the breasts and devoured the hearts of the American soldiers slain by them.

ACCOUCHMENTS. -M. de Maricenet contributes to the Bulletin de la Societe' d' Anthropologie' de Paris, (Vol. 7, p. 704), some notes upon popular superstitions connected with *accouchments* in the environs of Arleuf.

In the same volume is a curious paper on comparative obstetrics translated from the English of Dr. Englemann of St. Louis.

M. F. Zuillard contributes to the same Bulletin, (p. 710), an article on the rock-sepulchres at Port Bara, on St. Pierre Quiberon.

"THE EXCAVATIONS AT ASSOS.—Under this title is given, in

the Com. Blattder–d. g. fir' it A. E. & W., (Jan., 1885, XVI, 1.) an interesting account of some observations by Prof. R. Virchow on the ancient skulls found there and in Cyprus. These explorations have been the past three years conducted through the Archæological Institute of America and the excellent work done by that public spirited institution is well known to our readers. Mr. Joseph Thache Clarke's examinations have been thorough and correct. In the present article great stress is laid upon the finding of seven skeletons in the Necropolis at Assos; these showed no trace of incineration and were placed in clay vessels as was the case likewise in Sardinia. These interments Virchow refers to the third or fourth century, B. C.

The skulls appear to have been of different races and buried at successive periods, one probably being as early as the sixth century B. C. Prof. Virchow, from the examination of these and others with ancient Trojan remains, believes that with the exception of the brachycephalous female head from Hissarlik, the most antique skulls from the Troas were dolicocephalous. * * * and that these (already described) dolicocephalous skulls approached more nearly to the form of those of classical antiquity, whilst the brachycephalous appeared to be from some other peculiar race or stem.

Folk-Lore Societies.—A most laudable enterprise has lately been started in Soulle, Spain, the publication of a semi-monthly journal devoted to folk-lore (Bulletin Folk–l'erico Espanole), under the able guidance of Messrs. A. Machado y Alvare and A. Guichet y Sierra. It has not confined its energies simply to the propagation of matter relative to its subject, but is likewise making a spirited effort, with success, towards the formation throughout all Spain of Folk-lore societies, to study the wealth of material contained in the various geographical divisions of that famous land.

The learned editors have also issued a number of works bearing on this most important topic, and from their well known learning and zeal, great results may be confidently looked for from the harvest of the Peninsula. The field is a wide one and has never before been worked. While the popular beliefs and traditions can, to some extent, be found in the various *Romanceros* the science of Folk-lore deals with such survivals from a different stand point. Classification renders a valuable aid in the hands of an experienced searcher. In this connection it might be worthy of consideration whether an International Folk-lore congress could not be held with advantage, within the next few years at some central point. Great good has always resulted from such conferences, both to the work and the workers.

The Caves of Saumonsay.—M. Bonneme're recently explored these caves which he considered a prehistoric *tan house.*

He also adverted to the popular Breton belief that the seventh consecutive son of a woman who had never had a daughter was *et necessitate rei* a born physician and instanced a child of 8 years

of age whom he knew was practicing medicine. A similar belief was stated to exist in Polynesia.

[Bulletin de la Societe' S' Anthropologie VIII. I. '83–5].

AN INTERNATIONAL CONGRESS of the *Universal Scientific Alliance* will be held under the auspices of the *Institution Ethnographique* at Paris on 2d--5th of July, 1885. This is the first time such an assemblage has ever been convoked and many matters of the highest importance will be discussed. Prof. Len de Rosny will preside. Messrs. Henry Phillips, Jr. and Daniel G. Brinton of Philadelphia, H. H. Bancroft, of San Francisco, Charles Rau, of Washington, J. Carson Brevoort, of Brooklyn, N. Y., James D. Butler, of Madison, Wis., are American members of the committee of organization, clothed with full power to admit members to the right of entrance and participation in the Congress, where success is well assured. During the session a bulletin of the proceedings will be issued.

ROMAN EARTHWORKS NEAR LORCH are described in an interesting paper by Prof. E. Paulus, read lately before the Wurttemb. Alter Thumsverein, in Stuttgart, and published in full in the *Wurtt- Virteljahres hefte for Landes geschichte.* [Vol. VII., p 42]

Prof. L. Mayer contributes to the same periodical (p. 48), an illustrated account of the national collection of antiquities recently rearranged. The objects are valuable and manifold both from prehistoric and later times.

PREHISTORIC IMPLEMENTS IN JAPAN.—Mr. Kanda, a well known antiquarian of Japan, has recently published an illustrated volume, "Notes on the ancient stone implements of Japan," which according to its reception by the press seems to possess considerable merit. [*Nature* XXI, p. 805, p. 538.]

ARCHÆOLOGICAL FINDS. -Signor Fiorelli presented to the R. Accademia de' Lincei, (Rome), at its meeting March 15, 1885, a synopsis of the Archæological finds in Italy, during the preceding month.

Vol. XIV, heft IV of the Mittheiliengen der Anthropologischen Gesellchaft in Wien is rich in Ethnological and Archæological matter. Appearance of Jade and Neprite in Europe was made by Dr. A. B. Mayer, of Dresden, on April 15, which is to appear in the next number of the Mittheiliengen. Dr. Michael Haberlannt at the same session, contributed a paper on the question of the immigration of the Indo-Germans to Europe, which he answers in the negative. A discussion upon the main points of this communication was participated in by Dr. Neumann, Dr. Penka, Dr. Polak, which some of positions, among others a possible emigration of the Hamites from Europe, were controverted.

Dr. Richard Andree, (Leipzig), presented a paper against the pre-Columbian knowledge of Iron in America, basing an argument on the absence of that metal from the oldest sepulchral finds of the New World, and believes it possible that the stone structures were erected by the use of stone implements.

Dr. A. Bauer contributes to the correspondenz-Blatt der deutcher gesell, for Anthrop., Ethnolog. und Urgeschiedte, (XVI. 2, Feb'y, 1885), a valuable and extended article on the worship of fetiches and departed spirits as the original form of all religions.

In the same periodical (p. 13), mention is made of a recent published account of the valuable oriental collections of the Royal Museum of Ethnology at Dresden.

DOLMENS IN FRANCE.—Messrs. Pally, Auger and Isgen, in last December, made some excavations into a dolmen mound, *La Planche a Pierre* (sic) Ile d' Yen, France where among other remains they found a skeleton.

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NOTES FROM THE FAR EAST.

BY PROF. JOHN AVERY.

THE PEOPLE OF THE MALDIVES.—This group of coraline islets, of the form known as *atols*, is situated in the Indian Ocean south west of Ceylon, and extends over a space about 470 miles long by 70 miles wide. The name is supposed to mean "Palace Islands," being composed of Male (Hind. *Mahal*, 'palace,') the designation of the principal island and the residence of the Sultan, and diva, (Sk. *dripa*, 'island.') Owing to the insignificance of these islands and the difficulty of navigation among them, we have few authentic descriptions of their inhabitants. The earliest writers on the East do not refer to the Maldives by name, though some of them had heard that there were numerous islands in the vicinity of Ceylon. Our principal authorities are Ibn Batuta, the Moorish traveler, who visited the group in A. D. 1343–4; F. Pyrard de Lavel, a French adventurer, who lived there in captivity from 1602 to 1607; government surveyors, 1834–36; and, lastly, an exhaustive monograph prepared by H. C. P. Bell and published by the Government of Ceylon in 1883. About 200 of the islets are inhabited, and the population, which cannot be accurately stated, is thought to not exceed 30,000 souls. Of the earliest settlers of these islands we know nothing, save what may be inferred from the present appearance of the inhabitants, and from a vague tradition that the first colonists were *Cingala* from Ceylon. Ethnically the population is of a mixed character, the dark Dravidian type prevailing. Along with the oval face and well-opened eyes of the Aryans, one sees the flat face, the short and broad nostrils, and the heavy jaws of the South-Indians. There are also traces of the negro type, due to a former importation of slaves from Africa. The men usually have a dark copper complexion, while the women have a more olive hue. The religion of the Maldinians has been Mohammadanism for many centuries. This was probably gradually introduced by traders from the Persian and Arabic gulfs or from the west coast of India or Ceylon, but became the official religion about A. D. 1200. Underlying this are evident traces of demonolatry and nature-worship. The language in the main, though with a considerable admixture of Persian and Arabic words, closely resembles the Sinhalese, particularly that every form of it which had no Sanskrit or Pali ingredients. No grammar of the language has yet been written. On the Southern Atoles and at Male there is still known an ancient alphabet of 23 letters, called *dives akaru* 'island letters,' which is syllabic and written from left to right. The characters resemble those once used in Southern India. The alphabet which has been in general use for two and a half centuries is called *gabuli-tana*, 'accepted writing.' It has 18 letters besides a few derived from the Arabic and Persian, and is written from right to left. The vowels are not inherent, and are supplied by diacritical marks.

The people have a few songs and legends, but nothing indigenous which can be dignified by the name of literature.

THE TRAVELS OF IBN BATUTA.—We have just now alluded to this writer, who was one of the greatest travelers of ancient or modern times. He was born at Tangiers in 1304 and died at Fiji in 1877. The years from 1325 to 1349 were spent by him in foreign travel, during which time he visited most of the countries of the then known world. Proceeding across Africa to Alexandria he visited Syria and Palestine; then passing down the eastern coast of Africa he crossed over to Asia and traversed Arabia and Persia. Afterwards he visited the principal cities of Western-Central Asia, and so on down through Afghanistan to Delhi, where he spent eight years. Having been appointed on an embassy to China, he sailed from Cambay, but, instead of prosecuting his voyage, crossed over to the Maldines, where he remained 18 months, enjoying high distinction among the natives and allying himself in marriage with the best families. Leaving these islands, he visited Ceylon, Southern India and Bengal, whence he continued his journey to China by water. Returning after some time, he again traversed Western Asia and Northern Africa to Fez. Before his death he spent six years in Spain and Central Africa. He left a manuscript account of his travels of which the first extended notice was published in Europe in 1808. In 1845 an incomplete Portuguese translation of a MS. brought from Fez at the end of the last century was published at Lisbon. A rendering into English from similarly imperfect materials was made by Dr. S. Lee in 1829 for the Oriental Translation Committee of London. After the French conquest of Algeria, perfect MSS. were discovered at Fez, from which two French scholars published in 1874–9 the text and translation in four volumes. Batuta's account of his visit to the Maldines and Ceylon, forming a part of this work, has been recently rendered into English by Mr. Albert Gray and by the Journal of the Ceylon Branch of the Royal Asiatic Society. It is a most valuable addition to our knowledge of these regions at a period when other sources of information are scanty and of doubtful value.

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RECENT INTELLIGENCE.

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—It is understood that the next meeting of the American Association will be held at Ann Arbor, Mich., on August 26th, and following days. The mayor of the city, and the president of the University of Michigan have both extended cordial invitations to the association, promising their hearty co-operation and giving assurances that ample accommodation for the members will be provided.

DECLINE OF CIVILIZATION AFTER THE ROMANS. Mr. H. Butterworth read a paper on North-umbria, describing the decline of civilization after the Roman occupation. Assailed by fierce Picts and Scots on the north, by Jutes, Saxons and Angles on the east, the Britains were obliged to yield. "History does not record the various steps taken in the conquest of this district, though the relics in the caves at Sittle tell the tales of the hurried retreat of the terrified Celts from the plain to the mountain fastnesses, where, beneath the dripping roofs of the caves, they lost year by year the memory of the civilization of the past. A few charred bones show how hunger drove them to slay their horses and the broken spindles that remain tell how the women were compelled, at last, to make spindle whorls from the bones that lay around them." Bradford Hist. and Antiq. Society, April 10th.

ANTHROPOLOGICAL INSTITUTE, April 28. Mr. A. L. Lewis read a paper on certain rude stone monuments in West moreland. A little to the south of the village of Shap are the remains of some very extensive rude stone monuments, and a circle is said to have been destroyed when the rainbow was made. The most interesting monument in the neighborhood is situated at a place called

Gunnerskeld, two or three miles to the north of the village, and consists of two irregular concentric, slightly oval rings about fifty and one hundred feet in diameter, respectively, the longest diameter being from north to south. A paper by Admiral A. S. Tremlett, on quadrilateral constructions near Carnac, was read, which described certain enclosures explored by the late Mr. James Milu. A paper by M' Jean l' Henreux, on the Kepip Sesoators, or ancient Sacrificial Stones of the north-west tribes of Canada, was read. The stone which consists of a roughly hewn quartzite boulder, about fifteen inches high and fourteen in diameter, is placed on the summit of a pyramidal mound commanding an extensive view of both the Red Deer and Bow River valleys.

PERU IN HER DECLINE. A writer in the *Inter Ocean* who signs himself Curtiss describes the desolation of Peru, caused by the Chilian army. He says the entire museum of Peruvian curiosities, one of the largest and finest in the world, was packed up and shipped to Santiago, the books in the National Library were thrown into sacks and sent after the museum, and historical paintings were cut from their frames as private plunder. The greatest painting of Peru, Martnis' "Burial of Atahualipa, the last of the Incas," was stolen from the wall where it had always hung, but the protests of the diplomatic corps induced the Chilians to return it. The churches and private houses were stripped in a similar manner; what could not be stolen was burned. Nothing was sacred in the eyes of these modern vandals, whose purpose was to deprive the Peruvians of everything they prized.

A FEDERATION has been formed of the provincial learned and archæological societies, Europe, with a view of affording a more efficient protection to national antiquities. The society will serve as a correspondent for the provincial societies, and an annual congress will be held. Such a federation should be formed in this country, and a regulation secured by which the havoc among our prehistoric works should be stopped.

THE CAMBRIDGE ANTIQUARIAN SOCIETY, May 4. Prof. Hughes thought that sufficient evidence had been accumulated to justify a rough chronological classification of the Paleolithic weapons of the district, under three principal heads. Neolithic implements he classified into two distinct ages. The Roman occupation was recognized by the waste of a pottery yard. Some pottery and *lumps of clay had been discovered, which retain even the impression of the marking on the skin of the fingers that had pressed them* 1500 *years ago.*

MYSTERIOUS INDIAN PICTURES. At a recent meeting of the Anthropological Society a paper was read by Dr. W. Mathews, U. S. A., on the mythological dry painting of the Navajoes, among whom the lecturer has spent several years, enjoying opportunities for observing the mysteries of their medicine lodges, which no one before him had unraveled. These pictures, although the work of hours, are as solemnly obliterated again a few minutes afterward by the chief medicine men, as they are painted with dry powders upon the sand floor of the medicine lodge, from which the uninitiated are rigidly excluded. The few pictures the lecturer had seen were represented in large charts, and their meaning expounded, requiring the explanatory relation of many curious traditions, myths and sacred rites. *The National Republican*, Washington, D, C., April 8, 1885.

LITERARY NOTES.

Mr. Henshaw and Mound Builders' Pipes.—The pamphlet on Mound Builders' Pipes, by Mr. C. E. Putnam, has awakened very much interest among archæologists of this country and Europe. The attack upon the society by Mr. Henshaw, which was published in the second report of the Ethnological Bureau, seems to have aroused indignation in many different quarters. The letters which have been received by Mr. Putnam congratulating him on the boldness of his defense are not only numerous but from the very best sources. The

more we read Mr. Henshaw's article, the more pretentious and groundless do the positions of the writer seem. There is scarcely a truthful or convincing paragraph in the whole article, and many of the remarks are as careless and groundless as they can well be. Mr. Henshaw would better have confined his attention to his own department of ornithology, or else have been a little more modest in entering upon the department of archæology. The arrogance which he has exhibited is certainly not a good introduction for him in the new field. The wonder is that Major Powell, the Chief of the Bureau, should not have seen the carelessness of his statements and noticed the supercilious air with which he has treated archæologists generally. Written by an assistant and endorsed by the chief, the article is destined to produce mischief and arouse prejudice against the Bureau. Mr. Henshaw evidently owes an apology to the Davenport Society.

The transactions of the Victoria Institute, for May, 1884, contains an article on "Prehistoric man in Egypt and the Lebanon, by Sir J. W. Dawson, K. O. M. G., LL. D., F. R. S. That for April, 1884, one on the Prehistoric factory of flint implements at Spienne's by Rev. J. Mayens Mello, M. A. F. G. S. These articles are of great interest. Dr. Dawson first speaks of the Egyptian relics. He refers to the discoveries by Gen'l Pitt Rivers, (see Journal of the Anthropological Inst., May, 1882). He thinks that the gravel beds are genuine pleistocene deposits, but the flint relics are natural, caused by the impinging of stone on the flints. He uses the expressive term "bulb percussion." Dr. Dawson has made some interesting discoveries in Lebanon, such as bone-breccia and stalagmite deposits, which contain flint knives. The caves referred to are called Ant Elias and Grotto Nahr el Kelb, or Dog-river, also the Ras of Beyrout. He thinks the geological changes which have distinguished these caves are described as follows: The Lebanon district experienced elevatory movements in the Eocene and Pliocene but in the Pleistocene period it was submerged several hundred feet. At this time the caves were cut. It was again elevated in the post-glacial age. At this time the men took possession of the country and established themselves in the caves. This state of things was closed by the great post-glacial submergence or deluge of which we are finding so many evidences in many parts of the world." The article on "prehistoric factory of implements" is a good description of the Neolithic period. Prehistoric manufactures are supposed to have existed at Cisbury in England in Chavigny, France, in Ardennes, and Cresswell. Spiennes was a center of manufactory. Spiennes' flints have been found in many places. The author thinks that these were deposits in prehistoric pits which were dug into the chalk, made by Neolithic men, but does not decide whether the Neolithic race was formed by the incoming of the Aryans or whether they were a non-Aryan race. In this country rude specimens, resembling Paleolithic weapons have been found upon the surface. Prof. F. W. Putnam thinks that they are the results of the washing or denudation of the glacial period. The two periods, if we take the pits in the chalk of France and the relics on the surface in America as tokens are not so separate and distinct as some have supposed.

The Old Testament Student Vol. IV, No. V, contains an article on the universality of serpent worship, by Prof. W. G. Moorhead, D. D. The author mentions the Druids, the Hindoos and the Mexicans. The same number contains a description of nature worship as prevalent in many lands, by Justin A. Smith, D.D. This article is one of a series, which is entitled "Studies in Archæology and comparative religion," which has been running through several numbers of this valuable journal. The same Journal for Feb., 1885, contains a very scholarly article upon the dogma of the Resurrection among the ancient Egyptians, by Paul Pierrot, translated by Prof. Howard Osgood.

The American Journal of Archaeology, Vol. I. No. I, has an article by Prof. A. C. Merriam, on inscribed Sepulchral Vases, from Alexandria. We have not seen the journal itself.

The Western Antiquary, Plymouth, Eng., W. H. K. Wright, F. R. Hist. Soc. Borough Librarian, Plymouth, is an interesting local journal, but contains many items for general reading. The January number contains a reference to the Trelawney papers, as showing the connecting link between old Plymouth in England and the early settlement of Maine.

BOOK REVIEWS.

Bulletin du Musie, Royal D' Historie Naturelle De Belgique, Touee II, No. 3-4, Touee III, 1-2-3-4, have been received. A very valuable publication devoted to Natural Science in general. It occasionally contains articles on prehistoric archæology.

Bulletino della Commissione, Archæologica Comunale di Roma. Anno 12, second series. This is one of the most valuable journals published in Europe. It is always rich in the description of recent finds and contains many photographic plates illustrating the statuary and inscriptions which have come to light. As works of art these plates are very valuable.

Bulletin de la Societe D' Anthropologie de Paris, No. 1, 2, 3, 4, Fasicule Jan'y—Dec., 1884. This journal is devoted to Anthropology in the technical sense of anatomy but embraces other subjects, such as the language, customs, ethnography of the different races. It is a thoroughly scientific work. We are glad to have it upon our exchange list and recommend it to our readers.

Journal of the Anthropological Institute of Great Britain and Ireland, May, 1885, Vol. XIV, No. 4. An interesting article on systems of relationship among the Australians, by Sir John Lubbock, M.P., F.R.S., D.C.L., L.L.D. The author advances the idea that "communal marriage," as he proposes to call it, was original and founded on natural instincts Three distinct bonds of union. 1st, the tribe; 2d, the gens; 3d, the connection between Father and Son. Marriage was exogamous. 1, women were stolen; 2, captured; 3, taken from alien tribes. They became part of a tribe by communal marriage. The same number contains notes on the tribes of New South Wales, by A. L. P. Cameron Esq., and one on initiation ceremonies of the Kurnai tribe, by A. W. Hewitt, Esq., F. G. S. The President's address, by Prof. W. T. H. Flower L. L. D., V. P. R. S., P. Z. S., &c., contains much interesting matter upon the types of human races. 1st the negro or Ethiopian type; 2d the Mongolian type; 3d the Caucassian or white division. The subject of race division is undergoing much study and doubtless there will ultimately be discovered satisfactory basis or standard for dividing the races.

The New England Historical and Geneological Register, Vol. XXXIX, No. 154, April, 1885, contains the address by Marshall Wilder, descriptive of the progress of Archæology and American History, during the year 1884. Mr. Wilder is a very intelligent and broad scholar and always makes an interesting address.

The American Journal of Philology, Vol. VI, No. 21,, contains a photograph and a descriptive article on the Ephebro inscription in the possession of Columbia College, by A. C. Merriam.

The Proceedings of the American Philosophical Society Vol. XXII, Part III, July, 1885, is at hand; just received.

A Picturesque History of Ohio is being prepared by Henry A. Shepard. The following are titles to the introductory chapter; 1, Ancient Remains —Defensive Enclosures; 2, Ancient Remains—Sacred Enclosures; 3, Ancient Remains—Mounds; 4, Contents of the Mounds; 5, Anomalous Ancient Remains.

The Antiquary for June is at hand. No magazine is more welcome to our sanctum than this. It is always full of new and old matter and shows a scholarly and discriminating taste. It is splendidly printed and is one of the best journals published. We are always glad to quote from its pages.

We quote the following from this number about the Belfast *Natural Field Club*. A. W. Lett read an interesting discovery on the antlers of red deer, found during excavations at Mr. Waddle's lime quarries. Half a cart load of deer horns was found at a depth of six or seven feet from the surface. The exact spot is close to the prehistoric cemetery where many funeral urns have been found and near a large fort that was leveled within the present century. The find was of such a nature that it led to the opinion that the deer horns

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THE PREHISTORIC CITIES OF CENTRAL AMERICA.

THE RUINS OF UXMAL.

Uxmal is supposed to have been partially occupied on the arrival of the Spaniards, though portions were in ruins. It would appear that 140 years after Menda's foundation—the present capital of Yucatan—the Indians resorted secretly to these sacred buildings to celebrate the religious ceremonies of their fathers which the Roman church detested and forbade. Principal amongst its ruins stands the Casa del Gobernador, or house of the Governor, a long narrow edifice comprising a simple series of chambers and surmounting three imposing terraces. See Figures 1 and 2. The lowest of these terraces is 3 ft. high, 15 ft. wide, 575 ft. long; the next is 20 ft. high, 275 ft. wide, 545 ft. long; the third is 19 ft. high, 30 ft. wide, 360 ft. long. Eleven doors admit you in front to its interior, and one upon each end. The lintels of these doors were of wood and were found by Stephens in place and well preserved. "This building was constructed entirely of stone. Up to the cornice which runs around it the whole length and on all four of its sides, the facade presents a smooth surface; but above, is one solid mass of rich, complicated, and elaborately sculptured ornaments, forming a sort of arabesque." Ornaments upon this building present novel and beautiful features. Figures decorated with lavish head-dresses occur over the doorways, and above these a singular scroll-like ornament which recurs with different variations throughout the building, and indeed, universally in the ruins. The intricate character of the facade above the cornice seems produced by a mosaic of symbolic blocks. The rear of the Casa del Gobernador is a solid wall 9 ft. thick, with less magnificent sculpture. The roof is flat and covered with grass and bushes. The principal apartments are 60 ft. long, the floors are of cement, the ceilings form triangular arches as at Palenque.

Along the stuccoed wall on the interior of this building are the imprints of a living hand, its creases and wrinkles still preserved, painted red and stamped upon the yielding plaster with a life-like expression. This mysterious sign is encountered throughout the ruins of the country. It seems to have been a common symbol with the Indians of North America and expresses supplication with the accompanying associations of the strength and supernatural assistance which devotion secures. It is constantly found in their pictorial records and forms a very usual mark on

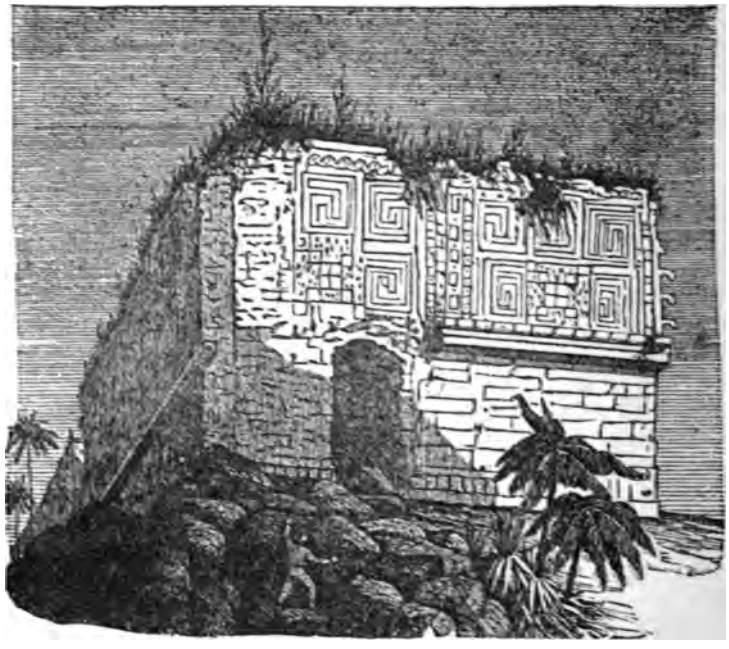

Fig. 1.—CASA DEL GOBERNADOR.

their painted bodies, an occult charm invoking the benediction of the spirits.

On the flat form of the second terrace at its North West corner is a second important structure called the Casa de los Tortugas or the House of the Turtles, from the series of turtles extending around its cornice. The building is 94 ft. in front, 34 ft. deep, is of much simpler design and ornamentation than the Casa del Gobernador, and stands alone having no visible means of communication with the latter edifice to which it offers a peculiar contrast and seems to occupy a subordinate and complementary position.

The next structure to be noticed is the Casa de los Monjos north of the Casa del Gobernador. It is composed of four walls enclosing a large court yard and stands upon the top of three

terraces. See Fig. 3. Beginning at the south and going to the right, the sides are respectively 279 ft., 158 ft., 173 ft., 264 ft. long. The range on the south is a stone structure, plain up to the cornice, but from that point ornamented to the roof. A gateway 10 ft. 8 in. wide, pierces this building in the center. Leading to the great central court yard and on either side are four apartments having no communication with each other and reached through doorways from the outside. The buildings which flank the sides of the capacious court yard offer some of the most striking and elegant decorations in the ruins. They are elaborate and wonderfully varied, by turns chaste and regular, and then grotesque, symbolic and violent. On the west for 173 ft. the most richly embellished facade presents a bewildering agglomeration of minute and careful ornament, through whose intricate arrangement two colossal snakes perpetually entwine themselves. The snakes themselves appear to be rattlesnakes from their engraved tails though their bodies in some parts are covered with feathers. The facade on the north side is 264 ft. long, reached by a staircase 95 ft. wide. It has 13 doorways, and over these, lofty tablets of masonry rise 17 ft. above the cornice, and 42 ft. from the ground. The sculpture is less admirable here, more strange, crude and luxuriant. This building is erected over

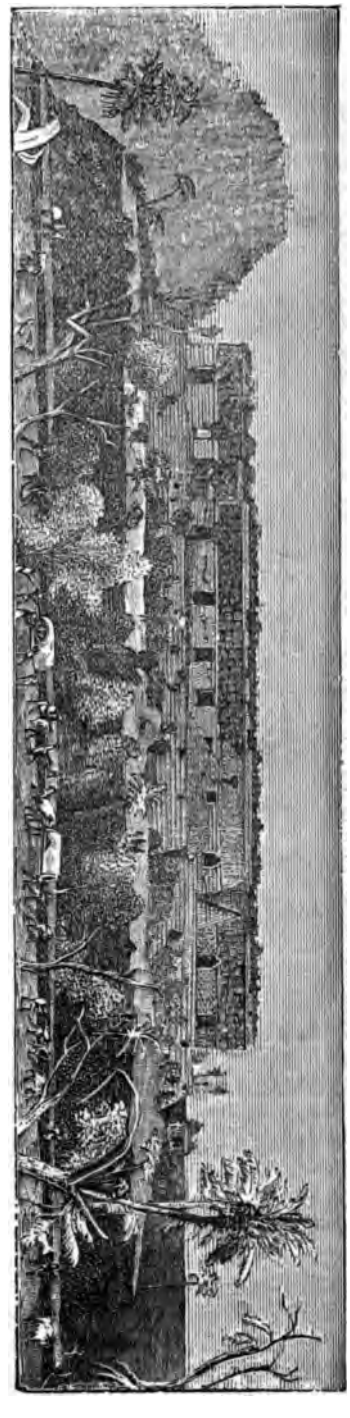

Fig. 2.—HOUSE OF THE GOVERNOR—UXMAL.

an older one which with its doorways, walls and wooden lintels is completely enclosed in the body of the latter structure. The eastern range is of refreshing simplicity in ornamentation, pretty patterns of diamond design are pleasantly broken by trapezoidal spaces, filled with bars ending in serpents' heads, while in the groups over the doorways a masked head with tongue lolling out is placed. Eighty-eight rooms look out upon this court yard, which is 214 ft. wide, 258 ft. deep and at the time of Stephens' visit was choked up with bushes and grass from which his footsteps

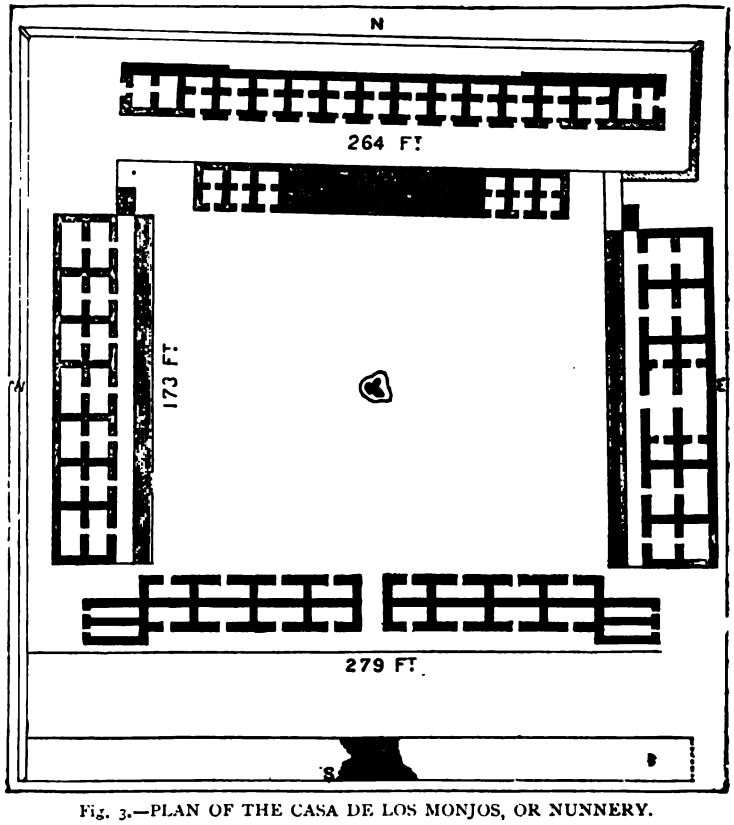

Fig. 3.—PLAN OF THE CASA DE LOS MONJOS, OR NUNNERY.

started flocks of quail, undisturbed tenants of that once sumptuous square where princes discussed the destinies of nations or priests meditated over the auguries of disaster.

The House of the Dwarf, so-called in allusion to a curious myth associated with it, otherwise known as the House of the Diviner from its pre-eminence amongst the other structures is a grand ruin. A court yard 135 by 85 ft. shut in by mounds now hidden in herbage forms a sort of introduction to a lofty terrace at its eastern end which is 235 ft. long. 155 ft. wide and 88 ft.

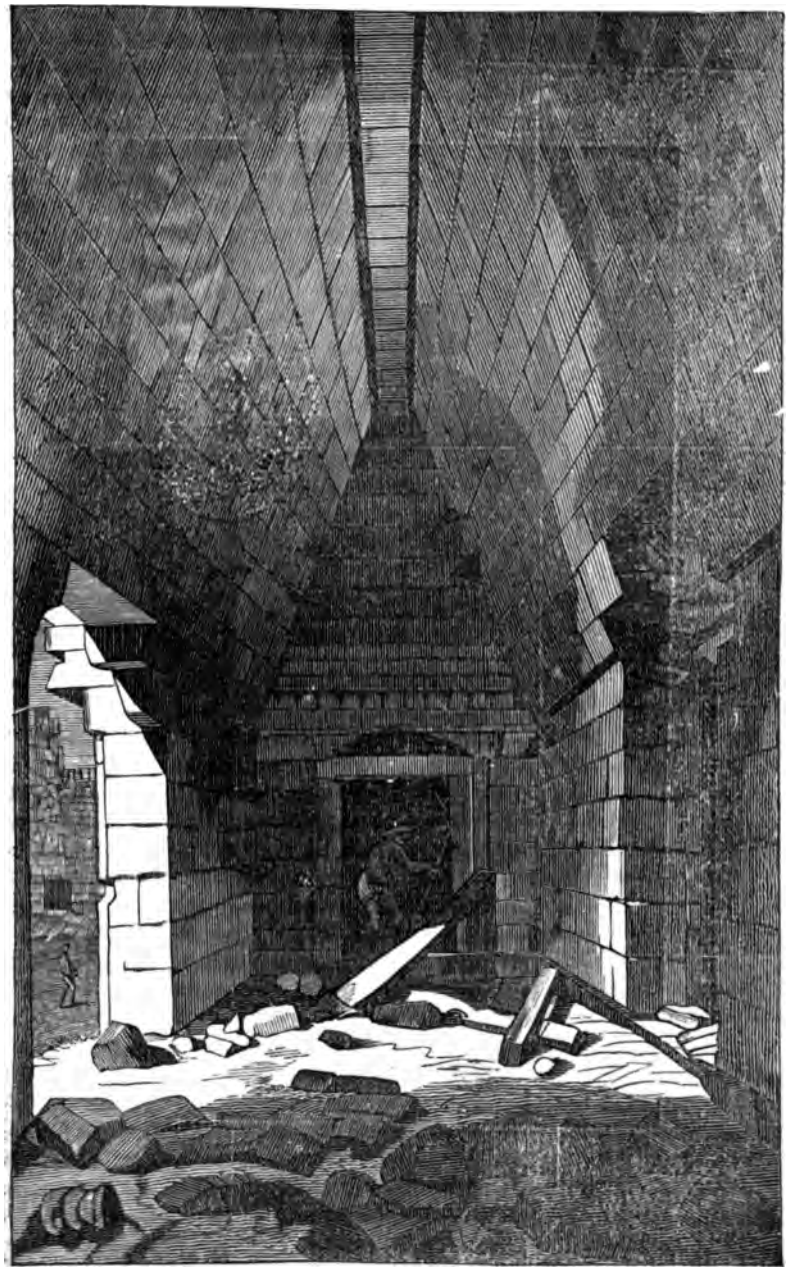

Fig. 4.—CASA DE LOS MONJOS, OR NUNNERY.

high. It is walled with stone and though pitifully disordered and broken presents in its steep slope, its ruined stairways capped by an imposing temple, a sublime and moving spectacle. Beside the remarkable edifice on its summit other buildings studded its slopes. At 20 ft. from its base some kind of a structure has left its ruins, and at 60 ft. remains of a building opulent in rich ornamentation stands out on a projecting platform, isolated from human approach but probably once reached "by a grand staircase supported by a triangular arch." The temple on top of all, is a long building 72 ft. front, 12 ft. deep. Three apartments occupy its limits with no means of communication, and two of them with doors opening to the east and the third to the west. To the eastern front a superb stairway rises 102 ft. high, up which the Maya Priests once ascended leading their naked victims to the sacrificial altars hidden in those gloomy chambers whose exterior walls bearing the emblems of life and death are crowded with graceful and inviting decorations.

The Casa de Palomas or House of the Pigeons, is an extensive ruin sadly ravaged by time, and offering less perfect specimens of its architecture than those above. Some curious curved stones 8 or 10 ft. in their longest axis and 5 in the shortest, called by the Indians *Pleoty*, or whipping post, occur with marked regularity in the centers of the court yards. A double headed couch in stone was found buried, supposedly to protect it from the hands of the ruthless and destructive Spaniards. "Throughout the ruins circular holes were found at different places in the ground opening into chambers underneath which had never been examined and the character of which was entirely unknown." In some of these a terra cotta vase was found and pieces of broken pottery. They have been considered both as granaries for maize and cisterns for water and doubtless served the latter purpose in a country where the water supplies were irregular, insufficient and their sources infrequent. The so-called *Campo Santo* or cemetery of this city, a group of ruined terraces, the House of the Old Woman, the remains of an ancient city wall, innumerable heaps of fragments and the encumbering debris of sculptures complete the picture of this memorable and haunted spot, the tomb and epitaph of a singular race.

RUINS AT KABAH.

Kabah was one of the ancient cities traced by Stephens from rumors of its existence at Merida, and when found presented an extent of ruins in desolate grandeur quite unexpected from the vague reports.

Before Stephens' visit scarcely a single white man had disturbed their silent repose, and since he left them the original solitude returns, only broken by the sound of their own decay.

Kabah lies some miles west of Uxmal, in a plain country bounded by hills, and is shaded by trees showing glimpses of its great buildings to the traveler along the road. Its ruins, as far as explored, comprise ten structures at varying distances from each other, with no marked relations to one another, some teocalli, rent and ruined mounds, and the imposing torso of a great arch. The principal teocallis is about 180 ft. square and rises in a pyramidal form to the height of 80 ft. Two hundred feet from this mound is a terrace 20 ft. high and planed off by a platform 200 ft. wide and 142 ft. long. On the right are structures and on the left

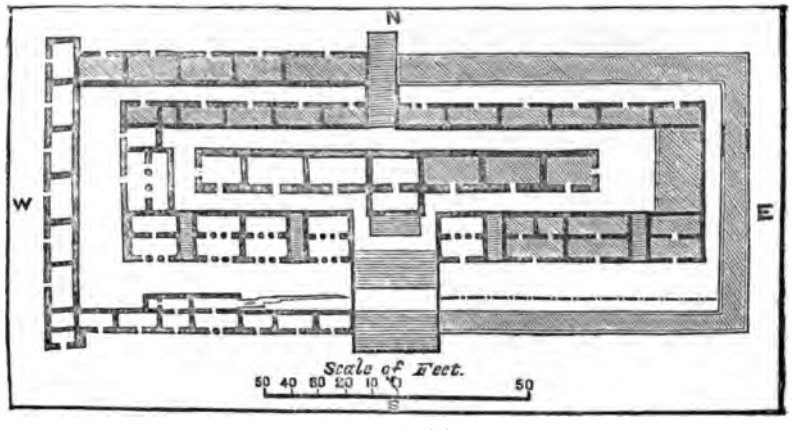

Fig. 5.—CASA GRANDE AT ZAJI.

and in the center an enclosure 27 ft. square, 7 ft. high, composed at its base of sculptured stones. From here stone steps 40 ft. wide, 20 in number, lead to an upper terrace and there a building 151 ft. long is encountered fairly burdened with ornate and eccentric ornament running from the very bottom to the top. Many designs are of great purity and beauty, recalling some of the conventional embroideries of to-day. The lintels are of wood. Another structure capped this building 15 ft. high, 4 ft. thick, resembling those surmounting the edifices at Palenque. Fig. 6. The apartments included in this rare architectural novelty were strikingly agreeable in arrangement and preservation. East of these is a great teocallis and adjoining it the ruins of a second house, 147 ft. on one side and 106 wide and rising in tiers of three distinct stories, to the second range of which immense stone steps supported by a triangular arch formed a grand and uprecedented feature. The third building, known as Casa de la Justicia, is 113 ft. long with five rooms and slightly ornamented by groups of pillars between the doorways. Perhaps the most surprising and pathetic of these remains is the arch, 14 ft. in span, with broken apex and piers overgrown with trees and bushes, which crowns a solitary mound near the principal teocallis.

Other and yet nobler remains abound, west of these, where on a terrace 800 feet long is a building 217 ft. front. From this building after much labor and expense and anxiety, was extracted the extraordinary sculptured beam, which, after the outlay of unstinted exertions, was destroyed in the unlucky fire which

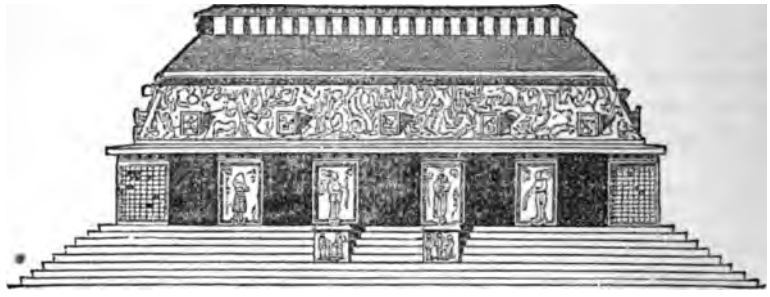

Fig. 6.—TEMPLE OF THE THREE TABLETS AT PALENQUE.

consumed Stephens' collection. In this building were seen the constantly recurring symbol of the red hand. Beyond these an unpretentious house yielded many important trophies. These o-jects were reached after penetrating a deep wood, and doubtless secluded remains, yet to be exhumed, are scattered through this untraveled region. The kneeling figure presents a bludgeon armed with sharp teeth inserted along the edge and, as Stephens says, doubtless corresponds to Hevrera's description of what the Indians carried, on the arrival of the Spaniards. "Swords made of wood having a gutter in the fore part in which were sharp edged flints strongly fixed with a sort of bitumen and thread."

THE RUINS OF CHICHEN-ITZA.

Chichen-Itza is one of the cities which the Toltecs built after entering Yucatan, from the country of Tulapan, and seems to have been twice visited by recurrent bands of this people. Its ruins stand east of Mayapan and 9 leagues from Valladolid, on the highway. They are generally known, and though first visited by Mr. Jno. Burke, a New Yorker, Baron Frederickstahl first published their interesting character and extent. Mr. Stephens' words cummunicate his own enthusiasm and stimulate exciting efforts to recall in fancy the people who lived and ruled amidst these enigmatic ruins.

This name Chichen signifies mouth of well, and is significantly applied, since a deep pool, 350 feet long, 150 feet wide, occurs here and provided the indispensible supply of water to that ancient city. It is very deep, and with rocky, precipitous walls, down one of which, a partly artificial path was prepared. These holes, called there Senates, are found very frequently

and seem fed by subteraneous streams. One house 149 feet in front, 48 feet deep is built on the level, but the earth is dug out from in front of it; it faces the east and has a rude and unornamented exterior, a ruined staircase on the east, a solid mass of masonry, 44 by 34 feet and high as the roof, are its noticeable features. Within, on the stone lintel of an interior apartment, is found the peculiar figure, engraved with hieroglyphics like those at Palenque, but scarcely seen in the the lugubrious light of this mysterious cloister. The figure appears to be celebrating some ludicrous ceremonial act, and wears a most amusing expression, though in all probability he is officiating at a solemn rite. The building of the Mayas or Nuns is spoken of as "remarkable for its good state of preservation, and the richness and beauty of its ornaments." In the facade and prominent amid the other tasteful ornaments, are seen "six projecting curved ornaments," like that one instanced as common at Uxmal in the Casa del Gobernador. A wing extends from the front of the building with an agreeable contrast of arrangement, within which occurs the perplexing closed apartments, *i. e.*, rooms built solid with masonry. The top structure in this ruin is reached by a collossal staircase 56 feet wide. Paintings in a fragmentary but unmistakably genuine condition are found in many parts of the ground structure, and niches diversify the monotony of the walls. Connected with this is the Iglesia church, 26 feet long, 14 feet deep, 31 feet high, with triple cornices and intermediate decorated panels. A strange building is the Caracol, a round tower-like structure. It stands on the second of the two terraces, and to the first a stairway 45 feet wide leads, balustraded by "the entwined bodies of two gigantic serpents" in stone. Another, the Casa Chichanchob, or red house stands on an unbroken terrace, and yielded from the top of its back wall a long stone tablet filled with hieroglyphics. But the most memorable structure is the so-called Gymnasium. It consists of two parallel walls running along for 274 feet, 30 feet thick, and at a distance from each other of 120 feet. One hundred feet from the northern end, looking south through the avenue, between the walls, is an elaborately ornamented edifice, now in a dilapidated state, showing columns and a single large chamber and opposite the southern extremity, on a line with this one, another quite similarly designed building occurs. Two huge stone rings, 4 ft. in diameter, 1 ft. 1 in. thick are fastened about 20 ft. above the ground in the centres of the opposite walls. They are embellished with two entwined serpents. In this alley Stephens supposes some athletic sports were practiced, and supports his view with a striking quotation from Herrera, in which a game of football is described with great vivacity as occurring in a very similiar enclosure before Montezuma, in Mexico, wherein two sides of players bandy about a football of gum, viz: caoutchouc, endeav-

oring to drive it over the wall of the opposing company, and especially through the hole in the stone rings, the happy expert who accomplished it "had a Right to the Cloaks of all the Lookers-on by ancient Custom and Law among Gamesters; and it was very pleasant to see, that as soon as ever the Ball was in the Hole, the Standers-by took to their Heels, running away with all their Might to save their Cloaks." In another edifice, picturesque in its artistic desolation and of attractive architecture, a chamber was entered whose walls were literally crowded with lines of painted figures, some carrying in one hand bunches of arrows, with the other disengaged, appear to be moving in a stately dance arrayed in the splendor of martial armor. In another compartment of the same building, above the debris of fallen walls, are seen jambs richly carved, and beyond these you penetrate a chamber "the walls and ceilings of which are covered from the floor to the peak of the arch with designs in painting representing in bright and vivid colors human figures, battles, houses, trees, and scenes of domestic life, and conspicuous on one of the walls is a large canoe." The colors are green, yellow, red, blue and a reddish brown, the last being used to give the flesh tints. These peculiar sketches gain a greater interest when we learn that Nebel found a stone of sacrifice in Mexico, around which almost identical characters were inscribed. The Castillo, an edifice capping a lofty monumental base whose sublime slope is ascended by two imposing stairways, and whose doors look towards the four cardinal points, affords profuse examples of engravings, and an interior apartment was fitted with the "most elaborate carving of curious and intricate designs." From this commanding spot the eye explores the whole domain upon which Chichen stands, and from this point was first seen the novel feature of a quadrangle marked by exact alignments of low columns 4 deep in a series 400 ft. long.

One of the most remarkable and admirable remains in Maya art in Yucatan is the "Cara Gigantesca," or great face at Izamal, 30 miles east of Merida. Dr. Arthur Schott has studied this strange figure with some care, and we must hurriedly summarize his conclusions. The face itself is composed of stucco, and is affixed to the side of a stone wall; it is an oblong outline, with soft, regular features and covers a space of about 10 ft. sq. A mitre bound by a sash and with a triple tassel fastened in front crowns the head, "two orbicular plates with perforated centre take the place of the ears," and three flat stones project from beneath the chin. (See Stephens.) Dr. Schott identifies this monument with Itzamatul, a beneficent and famous ruler of the Mayas, whose sagacity, goodness and justice won for him after death an affectionate apothesis by his bereaved subjects. They [illegible]ded his body and over its separated members built memorial

shrines, within whose walls the hum of oracles and the practice of their sacred liturgies perpetuated the devout recollection of his virtues. Pilgrimages are said to have been started in the Islands of the West Indies to these holy places, and great highways were built to facilitate their access to these venerable sanctuaries. Many of these colossal heads may have been repeated throughout the empire, stimulating the zeal of worshippers who used the stone plates as altars. Dr. Schott points to the rising mitre as the world-wide symbol of sovereignty, the triple locket and band as "the emblem of universal power and divine perfection," and the unnatural ears indicated that gracious willingness to hear all petitions, which to his people is the most significant pledge of a great ruler's fitness and benevolence. "The diversely-shaped curves filling up the space to both sides of the head represent according to Clavigero's direct statements the prayers and invocations of the devoted. They curl up like smoke and incense, while seeking entrance to the ears of the paternal monarch such as history and tradition represent Ytzmatul to have been."

It is impossible within reasonable limits to survey the entire field of Yucatan Archæology, or even note the numerous localities where antiquities occur, and we must conclude an imperfect summary with mention of the great roads which are supposed to have traversed the kingdom of Yucatan and entered the limits of the neighboring states. Vestiges of these have been met in several localities, and Mr. Charney, a recent explorer, speaks of "a magnificent road" made up of immense blocks covered by a concrete. The Catholic priests report from time to time additional traces, and the Indians have a vague tradition that a "great paved way, made of pure white stone, called in the Maya language Saabe, lead from Kabal to Uxmal, on which the lords of those places sent messengers to and fro, bearing letters written on the leaves and barks of trees."

The general survey we have taken of these ruins show us the works of a people acquainted with the principles of architecture and inclined to experiment with them in novel and unexpected ways; a people inventive in ornament, and industrious to an unprecedented extent in securing the objects of their fancy and design. They are built strongly in limestone, with cement of sand and lime, which yielded mortars, stuccos and plaster; they sculptured and modelled these steady structures with endless decorations; they placed them on lofty and extensive terraces, themselves faced with stone or solid to their core; they provided against drought by building great cisterns, and they comprehended at least the first principles of defense and fortification. Uniform in the main with long, low and narrow structures, truncated pyramids, simple interior with plastered walls and stuccoed exteriors, stairways up their mounds, etc., their works show

variations which naturally relieve this monotony, and hint at individual or local peculiarities. Of course the diverse conditions of preservation may affect with some advantage the appearance of these ancient cities, but ornaments certainly varied, and as at Uxmal the adjoining buildings themselves astonish us with contrasts. Bancroft remarks on the absence of pottery, implements and weapons in Yucatan remains, and the no less striking scarcity of idols. As the Spainiards saw many of these Maya cities used by the natives, and indeed put their own settlements near them, many aboriginal relics must have perished, destroyed by priestly ardor which only saw in them the very cunning lineaments and craft of the devil.

The dull, blank and cheerless interiors of these strange buildings doubtless were once radiant with rich tapestries and gorgeous dyes. The cotton cloth used by the Mexicans, and upon which they arranged bizarre patterns embroidered in the plumage of brilliant birds, may have been used here, and imparted unusual warmth and splendor to their peopled corridors, intermingled with those glaring pictures which are even yet seen in their decay. Chairs, tables, couches, and libraries of scrolls may have still further added to their attractions, and allowed the Maya elite to affect the spirit as well as the methods of an advanced culture.

THE RUINS IN NICARAGUA.

The archæology of Nicaragua is less interesting and unusual than that of Yucatan, and dislcoses a much narrower horizon of intellectual and aesthetic development in its makers. No temples, groups of palaces, ornate sculpture, or terraced pyramids are encountered here; no suggestive pictures of the busy acts of an acquisitive, inquisitive and superstitious race. Idols, uncouth though expressive, vessels of pottery, implements, inscriptions, graves and mounds, form the current stock in trade of the explorer in this wild and beautiful region. The prominent and best known remains are from and in the territory around Lake Nicaragua and on its sunny and fragrant isles. Ometepec, Zapatero, Pensacola and Momotombita have contributed grotesque and savage specimens, idols which occur in connection with mounds around which they seem to have been grouped. These mounds were probably teocalli, serving the horrid purposes of sacrificial rites. These islands are a few amongst the many volcanic islets, some mere cones of rock, which break the wide expanse of this inland sea. Vines radiant in variegated blossoms, plantains, golden papayas and the ever glorious palms cover their shores with tropic romance, while gorgeous birds flit through the foliage or troops of cranes wade in the placid waters. The mainland reflects the effulgence of those blessed isles, and nature

inexhaustibly forestalls man's dearest wishes. Amongst such exhuberance of life, of color, and of sense, flourished a religion of appalling and insane cruelty, finding some counterpart in the terrific aspects of nature which here reach their most frenzied heights, and so impressed on the national imagination that within late years the Indians have secretly withdrew from time to time to hidden coverts to honor their deposed gods with libations and mysterious rites.

At Pensacola, Mr. Squiers discovered three very striking and strange idols, massive, forcible and evincing a certain insatiate craving for the grotesque and monstrous. The first one represents a powerful male figure with hands pressing on his thighs, its head embraced by the open jaws of a gigantic snake. It is of a reddish color and cut from a sandstone block. Near by it was discovered a second image, curiously prodigious and unsightly. A head and bust half squatting, with the head disproportionately large, inhuman and frightful, the diseased vagary of barbaric fancy, and its lower jaw clutched by the closed hands and dragged down, exposing the long, listless tongue upon which, as has been suggested, was splashed the hot gore of human victims. In a vulgar sense the expression in this sculpture of obscene erucation is vivid. The third, and apparently the most impressive represents a man bearing up beneath the crushing embrace of a huge simian-like creature—probably meant for an alligator—and is characterized by Squiers as "a statue which conveyed forcibly the idea of power and strength." The idols at Zapatero possessed a different character in most instances, though here, too, the image of an animal covering or surmounting the image from behind is seen. One of those discribed is very fine 12 feet high sculptured from a single block and has "the stone behind the head cut in the form of a cross." The crouched figure forms another type, with its head crowned by a sort of "conical cap." The last is reproduced wherein the rectangular pedestal is replaced by a cylindrical body, encircled at the top and middle by two patterns, and the image is dwarfed to very absurd proportions, while the head forms a cross. The whole is sculptured from a single solid block of basalt of great hardness." The curious holes depicted in front are very carefully cut and defy explanation. A bass-relief was found here of a strange indefinable character with skull cap and protruding tongue, and a very diverse figure with a gleeful droll expression, pompous abdomen and swollen thighs.

Another unique object is the statue of a tiger menacing and eager, a boldly conceived and vera semblable work. Squiers recalls the resemblance of some of these devices and their arrangement to those seen in the Aztec rituals as appears natural as these Nicaraguans were an outlying Aztec people. Idols exist-

ed on Ometepec but have been for the most part destroyed. Here, however, are found the ancient cemeteries enclosed in a circle of flat stones, and many interesting objects of aboriginal manufacture obtained, as the skull shaped burial urns, gold idols, terra cotta figures, and still other vases simulating the forms of fruits, animals and shells, and the amusing creature in verde antique.

In the south-eastern districts, the remains are less noteworthy. Burial cairns at Choutal, "rectangular embankments of unhewn stone" contain urns with human remains, and also stone and earthen relics. Mr. Boyle describes a hill at Inigalpa covered with stones arranged in circles, rays, squares and diamonds. Subtiava has yielded a few statues and Masaya, cliff writings of a most preposterous character, while various spots have supplied collectors with curious pottery, bowls, tripods, water crafts and images, beads of lava and metallic trinkets.

Ruins exist in Honduras and San Salvador, but of undeterminate extent and somewhat vaguely magnified by exciting reports of "vast terraces, ruins of edifices, circular and square towers and subteranean galleries all built of cut stone."

The aborigines of Nicaragua did not compose a homogeneous society, but separated by local boundaries, climatic surroundings or traditional training, made up a number of tribes, which can be conveniently treated as the savage and the semi-civilized, the former living in the less favored districts of Nicaragua, as along its pestilential shores, where the present Mosquito Indians preserve a precarious and wretched independence, and the latter inheriting the cultus of their relatives, the Aztecs occupying the healthful, fruitful and beautiful plains between Lake Nicaragua and the Pacific.

The savage tribes were the Woolwas, Moscos, Ranas, Waiknas, Towcas, and Poyas, collectively referred to as Bravas, and inhabiting the insalubrious and lower levels along the Atlantic. The natives of the Pacific slopes were distinguished by more commanding personal and mental attributes. Among them, and occupying the narrower isthmus between Lake Nicaragua and the Pacific, were that remarkable and isolated people, the Niquirans, identified in language, customs and religion with the Aztecs, of whom they were an errant branch. The other inhabitants are divided into those speaking Charategan and Choutal. The former extended along the Pacific north of the Niquirans, and around the shores of the Gulf of Fonseca, and again south around the Gulf of Nicaya. They were the Dirians, Nagrandans, Cholutecans, Orotinans, Nicorans, and are represented as the oldest possessors of this country. The Chontales spoke a very distinct language, were partially savage, approximating the savage or semi-civilized races, between whom they lay, according as the influence on either side prevailed. But the presence in a remote

location of a member of the great Mexican people is the significant and important fact elicited in these studies. It is an interesting and striking indication of migratory impulses and movements among the populations of America, occasioning widespread ethnic currents and tribal commotions, and in their train the diffusion of unique customs, amalgamation of types, and confusion of tongues.

The religious rites amongst the Niquirans were identical with those of the Aztecs, and they confessed a similar theogony. Oral tradition preserved the rude elements of their religion, and the legend of a universal deluge, a re-creation of all things afterwards by Famagastad and Zapaltonal, the ascent of the virtous into heaven, the descent of the bad into hell, the expiration of a spirit from the mouth of the dying, are the salient articles of their faith. Confession, absolution, penance and fasting were prevalent observances, causing no little consternation to their industrious and orthodox historians, whose zealous wits could only discern in this abominable mimicry the impudence of the devil. Human sacrifice on little altars upon sacrificial stones was a conspicuous office, and the extraction of blood from their genital organs and sprinkling it upon maize were the symptoms of that Phallic Worship, "in strict paralellism with certain Phallic rites of the Hindus, and of those other numerous nations of the old world which were devoted to a similar primitive religion."

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THE ORIGIN OF THE UTES.

A NAVAJO MYTH.

In the ancient days there lived by themselves, and apart from other people, a family of three—a man, his wife and their daughter. As the daughter grew up to be a woman, her father began to love her, but not as other fathers love their daughters. For a long time he pondered how he might realize the evil desire that filled his heart, and at length he decided on a plan.

He feigned illness; he lay down, ate little and groaned continually. When he had followed this course for some days he called his wife and daughter to him and said: "I know that I am going to die. I cannot live much longer. As you have no neighbors to bury me when I am gone, lift me while I still live, and put me on top of the drying-frame. There let me lie. When I cease to groan you will know that I am dead, and then you will move away from here that my *chinde* (ghost) may not trouble you. When you have left your old home and are making your journey to a new place you will meet a man. His hair

will be cut all around; his face will be painted red, and he will wear a beautiful embroidered buckskin shirt. He will be the first man that you will meet, and him my daughter will go with." When he had ceased to speak they put him on top of the drying frame, and listened to his groans until they could hear them no more. Then, supposing he was dead, they bundled their effects and set out to seek a new home.

They had not traveled very far when they observed some one walking, at a distance, in such a way that their roads were likely to meet soon. They walked a little farther on; the stranger seemed still to approach them. Then the elder woman said: "My daughter, here I will rest. You must approach the man alone and see who he is." So the daughter went toward the man, and when they met he said: "Whence come ye?" and the maiden replied: "We come from over there"—pointing in the direction of their deserted *hogan*—"My father died at the place we come from." "*Ahalani sikes*, I greet you, my friend," (said to the dead man) and now that he is gone what did he tell ye two as he was dying?" "He said: 'The first one that you meet, him will you go with, him will you stay with, my daughter,'" answered the maiden. "'Tis well," said the stranger, "dwell with me and I will take care of you and your mother." The young woman left the man standing where they met, went over to her mother and told her what had occurred. The mother agreed and the man and the maiden came to get her; but the mother dwelt a little distance from them, in order that she might not see the face of her son-in-law and that he might not see hers. From this time on he hunted for them every day and brought home much game; and thus they continued to live for many days.

The mother after a time felt lonesome and homesick, and she went back to the place where her husband had pretended to die, that she might look at her old home again. When she came near the place, she stood at a distance from the drying-frame on a hill and looked, but there was nothing to be seen on the frame. Then she began to have her suspicions that the man who was living with her daughter was none other than her husband.

When she got back to where her daughter dwelt she said: "Why have you not told me how the man looks? The thing that lay over yonder (*i. e.* the body) is there no more. What sort of clothes does he wear?" The daughter answered: "His clothes are all embroidered; his hair is cut all around; his face is painted red." "Ah," said the mother, "it is he. Over there where he lay there is nothing. He has taken a fancy to you; he has disguised himself in every way. Wait till he comes home, till he goes to sleep. When he has fallen asleep come and tell me, and then go away somewhere and I will go to him and look at him."

When the old woman had looked at the sleeping man with care, she recognized him, wakened him, and said to him: "You are a fine looking man for a man who is dead. You have died again, no doubt. That is why you are lying down," and she called him evil names and reviled him.

After this the old people came together again and their daughter walked alone. About this time, finding she was with child, she wandered off into the wilderness, and there she travailed. When the child was born she kicked it into a badger hole, and leaving it there she walked away. But an owl saw her from a neighboring tree, and when she had gone out of sight, he took the child from the hole and carried it to his nest. He hunted for it every day and reared it.

When he grew to be a good sized lad, somebody made a bow and arrow for him. Then he ran around by himself and was able to hunt for game. One day he came to a Navajo camp near which there were some children playing, and he joined them. As the sport was going on he killed one of the children with his arrow and ran away. The elders could not find the culprit, and fearing his return they removed their camp to another place. Here again, one day, the men went off, leaving the children behind the and boy strayed into the camp again, and in playing with the children killed another.

The little ones were crying when the parents returned, and the latter asked them all about what had happened. The children answered: "A strange boy, *so* big, (indicating with their hands his height) ran in here and slew our elder brother with an arrow. Then we cried and ran off, fearing he might kill all of us and he ran away alone." "In which direction did he run?" asked the parents. "In that direction," said the children, pointing toward a mountain. Immediately the warriors started to find the trail. They found it and followed it all day until sunset, without overtaking the fugative, and then made their camp.

As soon as there was light enough in the morning they set out again on his trail, and before long came to the place where he had encamped the night before. Here they saw on the ground some chips of tsintlizi (*Feud leria rupicola*), and from here on there were tracks of two men, which were traced until sunset, when they again went into camp without seeing the murderer.

At daylight they continued their pursuit and soon discovered his camp of the previous night. Here were found chips of ash, and from here on the footprints of three men were followed until sunset, when camp was again made.

On the fourth day the pursuers started at daylight, and when they came to the place where the pursued had slept last they found chips of kinchilahi (*Purshia tridentala*), and from there

were seen the trails of four men. Again it was another night and they overtook them not.

In the morning the pursuit was continued, and when the place where the murderer and his companions had slept was reached, chips of the aromatic sumac were found, and the tracks of five men. Thence the Navajoes walked again until night and camped behind the others.

When day came they went on, found as before the camp of the other party, and saw on the ground chips of spruce. From this place they followed all day the tracks of six men, and at night slept behind them.

Next morning they went forth as usual at an early hour on the trail, and arriving at the camping place of the runaways, saw chips of mountain mahogany. From this point forward were tracks of seven men, which the Navajoes followed till night when they had to rest again, without overtaking the people they sought.

Next morning when the deserted camping ground of the latter was reached the warriors found chips of oak and the tracks of eight men. They passed on all day and again encamped without success.

When the day had dawned they continued the chase, and when they reached the camping ground which the others had occupied on the previous night, they discovered there chips of juniper, and thence forward there were nine tracks to follow.

From there the trails led on, and the pursuers halted and held a council. The retreating party already outnumbered them, and they saw no reason why every night another man might not be added. The task they had undertaken proved to be no easy one. They all agreed to return to their families; so back they went, tired, hungry and disappointed.

After a time a great tribe descended from these nine men. The Navajoes met them in battle and called them *Notha* (Utes), and as they sprang from the tough woods of which arrows are made, the Navajoes found them fierce and hardy warriors.

Washington, D. C. W. MATTHEWS.

THE TAENSA GRAMMAR AND DICTIONARY.

[Reply of M. Lucien Adam to the attack on its authenticity published in the AMERICAN ANTQUARIAN, March, 1885.]

The criticism on the Taensa Grammar published in the AMERICAN ANTIQUARIAN last March has led to a reply from M. Lucien Adam, the principal editor, under the following title: "Le Taensa a-t-il ste forge de toutes Pieces? Reponse a M. Daniel G. Brinton, par Lucien Adam." (800 pp. 22. Paris, Maisonneuve st cie. 1885.) As the question at issue is one of material importance to American archæology, I shall state M. Adam's arguments in defense of the Grammar.

It will be remembered that the criticism published last March closed with an urgent call for the production of the original MS., which M. Adam himself had never seen. To meet this, M. A. as soon as practicable applied to young M. Parisot, who alleged that he had translated the Grammar from the Spanish original, to produce that original. This M. Parisot professed himself unable to do, although only two or three years have elapsed, he cannot remember what he did with it, aud he thinks it possible that it is lost or destroyed! The investigations, however, reveal two facts quite clearly: first, that the original MS., if there was one, was not in Spanish as asserted, and was not in the handwriting of M. Parisot's grandfather, as was also asserted, as the latter was certainly not the kind of man to occupy himself with any such document. He kept a sort of boarding-house, and the suggestion now is that one of his temporary guests left this supposed MS. at his house. As its existence is still in doubt, this uncertainty about its origin need not further concern us.

The more important question is whether the language as presented in the Grammar and texts bears internal evidence of authenticity or not.

M. Adam begins with the texts, the so-called poems. To my surprise, M. Adam, so far as they pretend to be native productions, tosses them overboard without the slightest compunction. "In my own mind," he writes, "I have always considered them the work of some disciple of the Jesuit Fathers, who had taken a fancy to the Taensa poetry." This emphatic rejection of their aboriginal origin has led me to look over the volume again, as it seemed to me that if such was the opinion of the learned editor he should certainly have hinted it to his readers. Not the slightest intimation of the kind can be found in its pages. Such being

the case, it is rather hard on me for M. Adam to arraign me with severity for accepting these poems as genuine, on the strength of his well-deserved reputation as a linguist and critic, and before I had studied the volume in detail. This I did in my work, "Aboriginal American Authors and their Productions," pp. 48, 49, (Phila., 1883.) and it was a mistake which I hasten to acknowledge.

The original MS. having disappeared, and the texts having been ruled out as at best the botch work of some European, M. Adam takes his stand on the Grammar and maintains its authenticity with earnestness.

I named in my criticism six points in the grammatical structure of the alleged Taensa, specifying them as so extremely rare in American languages, that it demanded the best of evidence to suppose that they all were present in this extraordinary tongue.

These points are discussed with much acuteness aud fairness by M. Adam, and his arguments within these limits are considered convincing by so eminent an authority as Professor Friederich Muller, of Vienna, to whom they were submitted, and whose letter concerning them he publishes. What M. Adam does is to show that each of the peculiarities named finds a parallel in other American tongues, or he claims that the point is not properly taken. As I never denied the former, but merely called attention to the rarity of such features, the question is, whether the evidence is sufficient to suppose that several of them existed in this tongue, while as to the correctness of my characterization of Taensa Grammar, scholars will decide that for themselves.

It will be seen from the above that, even if some sub-structure will be shown to have existed for this Taensa Grammar and texts, (which, individually, I still doubt) it has been presented to the scientific world under conditions which were far from adequate to the legitimate demands of students.

M. Adam in the tone of his reply is very fair and uniformly courteous, except in his last sentence, where he cannot resist the temptation to have a fling at us for the supposed trait which Barnum and his compeers have conferred upon us among those who do not know us. "Permettez-moi de vous dire," he writes, "qua la France n'set point la terre classique du *humbug*." Has M. Adam forgotten that George Pralmanasar, he who in the last century manufactured a language out of the whole cloth, grammar and dictionary and all, was a Frenchman born and bred? And that if the author of the Taensa volume has done the same, his only predecessor in this peculiar industry is one of his own nation?

DANIEL G. BRINTON, M. D.

Media, Pa.

ANCIENT CANALS ON THE SOUTH-WEST COAST OF FLORIDA.

While exploring the South-west coast of Florida, I was much interested in two ancient canals which I examined, and whose object seemed quite inexplicable. The first occurs about three miles north of Gordon's Pass, an inlet thirty-three miles south of Punta Rasa, and twenty miles north of Cape Roman.

The Inlet is quite deep, the channel through the outlying shoals having a minimum depth of five feet at low water, while within the bar the soundings vary from ten to twenty feet with rock bottom; but a few hundred yards farther in, oyster banks and shoals prohibit navigation except for small boats. Still, the small harbor constitutes a harbor for sponging vessels and small traders in heavy weather, and is frequently resorted to for this purpose, as more accessible than other Inlets along that entire reach of coast. It should be understood that the Florida coast, from Cape Sable, its southern point, to the Caloosahatchee River, is a maze of Mangrove keys, skirting the mainland with a width of from three to eight miles, intersected by innumerable water channels, in which the navigator may easily become bewildered, did not the efflux of the tides indicate the way of escape. Within this belt of keys, a marsh a mile or more broad, chequered with ponds and dotted with Cabbage palm islands, intervenes as a sort of fringe to the mainland for nearly the entire distance, the only exception being for some six or eight miles, where the mainland projects through it and the mangrove belt, and abuts directly upon the Gulf Coast. This point of mainland with its growth of pines and palms, reaches the coast much in the shape of a foot, the sole forming the beach and the toe pointing southward, and constituting in fact the northern bank of the inlet just referred to as Gordon's Pass. In entering the harbor by the Inlet, the Lagoon within abuts against the mainland a mile and a-half to the eastward and branches to the North and South. The South branch thronged with mangrove islets with its network of channels, merges in the great belt before mentioned, and is available for shoal draft boats, which, without going to sea, can navigate by this means the entire line of coast to within fifteen miles of Cape Sable, the South end of the Peninsula of Florida. The North branch penetrates the mainland in that direction with a sheet of water about five miles in length, and varying in breadth from one to two miles, skirting on the west what may be called the instep, and terminating at the ankle of

the foot to which I have compared the promontory. The heel of this foot constitutes the south bank of the Inlet next north of Gordon's Pass, which is called Doctor's Pass, the length of beach between the two being six miles. At Doctor's Pass, the belt of mangrove keys re-commences and continues uninterruptedly to the Caloosahatchee River, the mainland gradually receding from the coast to a distance of from three to four miles.

I entered Gordon's Pass, and for some days was occupied in examining the evidences of Indian occupation in the shell and earth mounds to be found there, and while awaiting a fair wind for Punta Rasa, devoted a day to the examination of the Canal. With two of my men I walked northward along the beach, which was a perfectly straight line to the next Pass. For the first half mile this beach was skirted by a beautiful grove of cabbage palmetto, under whose shade was the ranch of Mr. Madison Weeks, an intelligent settler, who was cultivating the surface of an extensive shell mound, just north of the Inlet, and who courteously gave me much information about the country. The Palm Grove was on a plateau about eight feet above the sea level, but beyond the grove the land sank into a low marsh not more than half that elevation. The storms of many years had created a levee of sand, which defended this morass from the sea, and was at least one hundred feet in breadth. It was apparent, however, that erosion of the coast had here occurred to a great extent, for stumps of dead palms could be seen a hundred yards or so to sea, and suggested the probability of a great change in the contour of the land during not remote years. One of our party followed the line of embankment or sand-dune while the other two kept along the beach. At a distance of three and a-half miles from the Inlet the former announced the Canal, and we soon joined him and saw the object of our search before us. Where we stood it was buried in the sand embankment, but from that it was plainly visible straight as an arrow, crossing the low intervening morass and penetrating the sandy pine ridge, half a mile, or nearly so, away. The bottom was moist and full of tall grass; the sides and summit of the embankment covered with a dense chapparal of oak scrub and scrub palmetto. Its direction from our stand-point was about one point South of East. We could see in the distance, pines growing upon the inner and outer sides of its banks. With infinite labor we worked our way through the dense scrub for a hundred yards or so, and took our measurements. The width from the summit ridge upon each bank was 55 feet, and the depth from that summit level to centre of the excavation 12 feet. At the bottom the width was 12 feet, the banks being almost perpendicular for some 5 feet, and then receding on an easier angle at the summit. This summit was about eight feet above the level of the meadow, through which for nearly half a mile it was excavated, till it reached the higher

level of the sandy pine land beyond. Owing to considerable indisposition on my part, this was the end of our exploration for that day, but on the day following we rowed up the Interior Lagoon with a view of examining its eastern terminus. Mr. Weeks, the resident settler, kindly accompanied us and gave us all the information he possessed as to its structure and peculiarities. He had often hunted through the pines, and had crossed it at various points not at present accessible to us. A long pull of about four miles from the Inlet along the Lagoon brought us to a little bay on the west shore where we landed, and penetrating the thickets reached a swamp of saw grass and water, where we found the Eastern terminus of the canal, though much reduced in dimensions, as probably it was here more exposed to the wash of the Lagoon in the rainy season. The banks were covered with a growth of cabbage palms, and as it progressed toward the pine barren, it increased in size and height. We found that at this end the trench curved to the South as it approached the Lagoon, and about two hundred yards from the shore it was intersected by a cross ditch or trench, as if to allow it to receive the waters from the level on either side. If this cross opening has not been a modern adjunct, designed to allow the swamps to discharge into the Lagoon, as we found was now the case, it would seem to indicate that the whole of these interior waters were expected to find an outlet to the sea by means of this very considerable drain or canal. Mr. Weeks gave us the following information about the canal in its passage through the pine land. The whole canal is about one mile and a half in length, reaching from the Lagoon to the Sea. With the exception of the curve at the Eastern terminus it is perfectly straight. In passing through the pine woods it intersects sand ridges, in which it is excavated to a depth of forty feet. The bottom is everywhere of the same width I have described, but at points where he has crossed it in hunting, he finds a trench about four feet in breadth, and at present, two feet deep running along the center, leaving a breadth of about four feet on each side. Mr. Weeks was of the impression that this supplementary trench was designed to accommodate the keel of a boat as it ran along the conduit. Leaving the Canal, we crossed the Lagoon and found and ascended a creek with rocky banks and bottom for some two miles, into the pine woods of the mainland. Mr. Weeks was of the opinion that it formerly connected with the Canal, and the latter was constructed to carry it to the sea, but I see no indication of that being even remotely possible, though it is as good a guess as any other that can be made in the apparent absence of any more plausible theory. The trench in the middle of the main canal appears to me to indicate that the canal has been made by civilized men, and within a comparatively recent period. It is a work of enormous labor indeed, but in trenching through the sands

of these regions, it is quite usual to make an interior ditch, that the tables left on each side may intercept the drifting sands brought down the sides by heavy weather, rains or wind. But the question is, what was the purpose of such an expense of labor, and who in this sparsely settled country could have undertaken it. As regards drainage, the Lagoon already empties into the Inlet, and through that into the sea. If for the admittance of vessels, the Inlet of Gordon's Pass gives far greater accommodation. And who would not be aware that an opening of the kind at right angles to the shore, without some very massive artificial breakwater and continually dredged channels, would be choked up by the sand on the first storm, and show the same obstruction at its mouth as we have just seen. My own idea is that by whomsoever constructed, it was designed to relieve the lowlands to the eastward of great accumulations of fresh water in the rainy season, at some remote period when there was no Gordon's Pass, and when the exterior conformation of the coast was far different from what it is at present. Inlets in the Florida coast, particularly on the Atlantic side, open and close unexpectedly. In St. Johns County a couple of miles south of Mantanzas Inlet, an inlet, known as Hughes,' closed up in heavy gales an hundred years since, and that region was rendered very unhealthy by the stagnant fresh water. A few Spanish soldiers with shovels, opened a channel through the marsh back of the Sand Dunes, and in a short time the waters had worn a course into the Matanzas river, which has so remained ever since. Heavy storms on the Gulf Coast may have choked up several Inlets on the west coast, and filled up channels among the Mangrove Islands, or on the other hand, the mainland which now confronts Gordon's Pass only a mile or so to the eastward, may have reached the sea in bygone ages, and enclosed a fresh water lake where is now the Northern Lagoon. Who were the constructors, is a question, even more difficult to settle. There is no record of such a work in any local tradition, or in any history that we now possess. Indeed, there is nothing more obscure than the history, whether ancient or modern, of the South-west Coast of Florida.

The Spanish population of the peninsula was always feeble, and hardly, at any period, exceeded a thousand all told, outside of the cities of St. Augustine and St. Marks and Pensacola. The Spanish Missions faded out without any but the faintest record, and the most we could venture to surmise, in the absence of any real evidence to the fact, is the possibility that about the middle of the 17th century, the Indians of this portion of the mainland being under the direction of the Mission Priests, were by them induced to construct this work, with a view to sanitary advantage or for some industrial purpose. But by whomsoever constructed and for whatever purpose, it is a work of great, and, we must suppose, well organized and intelligent labor, and well calculated

to excite astonishment and admiration, in a region now unpopulated and offering so little temptation to the settler. The nearest Indian earth mound which I explored, disclosed the most modern burials and glass beads quite as modern.

The other canal I visited, is quite as inexplicable, and even more surprising for its extent and dimensions than this. It has been occasionally noticed in accounts of hunters and sportsmen, who have not infrequently encountered it in a more accessible and better known region. The sheet of water on the coast north of Caloosahatchee river known as Charlotte Harbor, Charlotte Sound and Carlos Bay, has on its eastern border a long island known as Pine Island. It is about 18 miles long, and from three to five miles broad, extending in a direction nearly north and south. On its east side it is separated from the mainland by a shoal channel, obstructed by oyster and sand bars, from half a mile to a mile in width. On the west, Charlotte Sound intervenes between it and the outside or coast-line of keys, with a width of from three to five miles. Just on the verge of Pine Island, a maze of mangrove keys or islets stretch along the entire distance, and some of these have been occupied by the Muspa Indians as late as fifty years since. Pine Island itself is clothed in pines, and is a sandy level fringed along the water by mangrove thickets. Some of the adjacent islets are occupied here and there, by a solitary settler, who finds cultivatable ground on the shell mounds left by the Indian inhabitants of prehistoric or more recent days. One of the largest of these shell mounds which I have ever seen, is found on the west coast of Pine Island, some four miles from its northern end. The heaps cover a space of several acres, and rise in steep ridges to the height of, in some instances, twenty-five feet. Their flanks run off frequently on very slight inclinations, and have been dwelt on by Indian residents long subsequent to the era of original construction, until the debris accumulated over the shells has resolved itself into a very fertile mould, tempting to the settler of the present day. This shell heap had been so utilized, that around the steep ridges, rows of lime and lemon trees, with pomegranates and fig trees, spread out on the long levels. But all was now deserted and on landing I found it a maze of wild luxuriance; briars and the American Aloe, and cacti innumerable, filled up every vacant space, and these with the "Spanish bayonet," render it a danger as well as labor to explore.

I had but little time to spare, owing to the delays forced upon us by a long period of unusually inclement weather, and could only make a hasty inspection. We had expected to find two settlers at the ranch, but it was vacant, and our work had to be done without the aid of a guide. We made for the mangrove swamps to the south, and the tide fortunately being out, we worked through the damp thickets till we emerged into the tangle of scrub palmetto which covered the surface of the sandy

upland of the Island. Catching a glimpse of a sand mound glistening with whitened crest, among the pines a quarter of a mile away to the eastward, we plunged in through the chapparal and made for that object. On our way we rose upon a slight ridge and then descending into a hollow level for some thirty feet, again surmounted a ridge and then realized that this was the Canal. It was thus we found it, much to our surprise. A thin growth of tall pines covered it and the surrounding sand level, an occasional palmetto rose here and there along the bottom, all else was a thicket of scrub palmetto. The position of this end of the canal was of some interest, as enabling us to estimate how far it was coeval with the sand or shell mounds at its western terminus. So far as it can be described without the aid of a diagram, the arrangement of these objects was as follows: On the western verge of the Island in a mangrove swamp, rose the various masses of shells constituting the Shell mound spreading over an area of eight or ten acres; due east of these ridges at a distance of some 300 feet, but upon the sand level of the Island, rose a sand mound 35 feet in height and 200 feet in base diameter, (one of the largest of these constructions which had come under my observation anywhere in Florida.) Looking eastward from its summit, we could discern about 460 yards distant, the sand mound we had first descried. It was a twin or double-headed mound, as I afterward ascertained, 20 feet in perpendicular height, with a depression of 8 feet between the two summits, and the longest diameter of its base 300 feet. While these two mounds lay on a line due east and west, the canal passed between them angularly, coming from the south-east. The dimensions of the latter were at this point 30 feet in width from the bottom of the opposite banks, and seven to eight feet in height to the summit of the banks, which was also at an elevation of some three or four feet above the level of the adjacent sand of the Island surface.

Far as the eye could reach, we could trace this canal in a direct line through the sparse pine woods; its course being especially marked by the tall fronds of the cabbage palms, which the moisture of the depression tempted to grow within the banks, and were confined to that level. After passing between the two sand mounds in an angular direction, the western terminus of this interesting construction, faded away in the general level of the surface to the north of the larger mound, and this level, within a few rods, sank into a creek which continued straight through the mangroves into Charlotte Sound, emptying two hundred yards north of the ranch where I had landed. These were all the local characteristics of this Canal that I was able personally to inspect. I was assured by an old settler that it crosses the entire Island in a direct line on the course which I observed. At this point, the direct width of Pine Island is three and a half

iles. The Canal however, crossing at the angle indicated, must :ceed five miles in length. It was a source of great regret that disposition on one hand and delays incident to an unusually ıugh and inclement winter on the other hand should have pre- :nted my making a more thorough survey of this interesting and explicable work.

While it presented no characteristic, such as that at Gordon's ıss, which suggested the possible civilization of its constructors, am still unprepared to assert that it is prehistoric, or rather 'e-Columbian work. In favor of such a view we have the well ıown fact that excavated and elevated roads are found in the :ninsula leading from mounds to a lake, or water course, or to village. This is testified to by the earliest as well as more re- :nt explorers, and traces of such works have come under my own ›servation on the east coast of Florida. The dimensions of this ınal however, suggest a different purpose from such roadways, hose length never exceeded some three or four hundred feet, ıd when depressed were sunk only about two feet, including .e elevation of the flanking ridges. An old resident, quoted by r. Kenworthy, (who has since removed, and I failed in conse- ıence to see) states, that the traces of this or a similar canal, ın be discerned on the adjacent mainland, following the same ıe of direction for several miles, and apparently a continuation 'the same work. I was not able to verify the statement by :rsonal inspection, but assuming the fact to be so, it gives some ›lor to the idea that this may have been an azequia or irrigating ınal. Remains of such works were found by the early discov- ers in the interior of both North and South American conti- :nts, particularly among the New Mexican tribes, the Toltecs 'old Mexico, the Quiche's of Central America, and the Quich- ıs and Aymaras of Peru. But the present natural features of e region do not justify a positive inference of such an object, ıd, while both history and tradition are absolutely silent as to ıy variation of the early structure and conformation of the ›untry from that which now exists, we cannot venture to main- in such a theory or assign it any plausibility. De Soto upon aching the western bank of the Mississippi engaged in hostili- :s with a Cacique named Auilco, whose village, at a distance ›m the river, was accessible from thence by an artificial canal of ree leagues length, but even this was of far inferior width to e work under consideration, as it only permitted the passage 'two canoes without touching. As before intimated, the history 'the South and South-western Coasts of Florida is hopelessly ›scure. The explorations of Ponce de Leon in 1513 and 1521 e lost to us, except as vaguely shadowed out by historians of ter days. Bernal Diaz in 1517 implies that de Leon's expe- :nces like his own, were disastrous and discouraging. Subse- ıent adventurers, such as Narvaez and De Soto, disembarked

at Tampa Bay, and their historical and topographical records applied to regions north of that harbor. Fontanedo, about the middle of the 16th Century, while giving valuable details of the Indian Tribes and their villages in South Florida, is either silent or hopelessly indefinite as to the natural features of the country. Even the early maps, which have often preserved to us features, the record of which by their discoverers has been lost, indicate total ignorance of this particular locality, until a period subsequent to the English Supremacy in 1763. Nor does Charlotte Harbor, with the great River Caloosahatchee, (whose grand and stately outflow for the last twenty miles of its course strikingly resembles the St. John's above Mandarin) properly appear upon the maps until 1775, when the combined surveys of De Brahm, Romans and Gault were used by Jeffries in compiling his military map of the Southern Colonies of America.

Interesting as the subject of these constructions is, we are left without a possibility of determining their purpose and design, or whether their constructors were of the Pre or Post-Columbian Era. It must not be forgotten however, that there are some grounds for supposing that, within historic times, a civilized population of considerable numbers occupied this particular locality of Charlotte Harbor. In the 17th Century, the devotion and enterprise of the Spanish missionaries, carried them in great numbers into every part of Florida, and though we cannot in most instances identify the precise locality of their labors, historical or local traces remain of their occupation of many interior or coast villages, and of at least a partial civilization of the Indian population. Dr. Brinton in his valuable "Notes on the Floridian Peninsula," in reference to these Missions observes: "Nothing definite is known regarding the settlements on and "near the Gulf, but in all probability they were more extensive "than those on the eastern shore, peopling the coast and inland "plains with a race of civilized and christian Indians, etc." A curious circumstance illustrating this fact was related to me by a resident of St. Augustine. Many years since a letter was received from a Roman Catholic priest in England, detailing the particulars of the death of an aged penitent, who confessed to having been a pirate in the Spanish Main in his early years, and confided to the priest that he had landed on this coast and buried his ill-gotten wealth at a spot some hundred yards in a definite direction from "the Catholic Monastery in Charlotte Harbor." The date of such a deposit must have been in the latter quarter of the last century. The letter naturally gave rise to some searches—quite fruitless—for the hidden treasure; but the point of interest to us, is the mention of a Monastery in what is now an almost desolate region. There are indeed no traces to be found of such a building, or of any civilized settlement, but it is curious to remark that, previous to 1836, travellers report a re-

dundant white and Indian population in this harbor. In 1832 a visitor there estimates an hundred and more of the former and large bodies of the latter, and yet I found Useppa Island, which *then* was described as having a village with 60 inhabitants, entirely desolate and uninhabited in 1885, and am satisfied that the number of the entire population within the boundaries of Charlotte Harbor, exclusive of Punta Rasa, would not now exceed ten adults. It is interesting to know that recent travellers also record the existence of a canal, whose traces are easily discerned to the north-east of Fort Thompson, at the head of the Caloosahatchee River, and but a few miles from that old military post. It appears to be about three miles in length, and is terminated by an earth mound of considerable size.

I have now furnished all the particulars I possess of these two canals, and in brief such facts of the history and local features of the country as may bear upon the question, and leave it to the consideration of archæologists of larger experience, venturing merely to suggest that if any correspondents of the AMERICAN ANTIQUARIAN know of ancient works of a similiar character on this Continent, and will publish the details in its columns, it would no doubt largely aid in solving the mystery which at present veils both the constructors and the purpose of these works. ANDREW E. DOUGLASS.

New York, July 24, 1885.

THE DOGS OF ÆSCULAPIUS.

While some excavations were in progress for an improvement of the harbor of Larnaka (Citium) in Cyprus, in 1879, a stela was brought to light, on each side of which was painted a Phœnician inscription embodying an account of expenditures of a temple. The inscription belongs to the first half of the fourth century B. C., and records the sums paid to builders, servants, barbers and others. Among them mention is made of the *Kelaoim* who receive a certain sum. The editors of the *Corpus Inscriptionum Semiticarum* render this by *scorta virilia* as they would also the passage in Deuteronomy XXIII: 18, where our version follows the ordinary meaning of the word "dogs." The existence of *scorta virilia* in the Phœnician religion is incontestable, but M. Halevy has argued that, while they might well be called dogs from the point of view of the Hebrew, they would not be so stigmatized by Phœnicians in the very temple to which they were attached. Accordingly, he maintains that the word in this temple-register must mean dogs, pure and simple, kept for the protection of the temple. M. Saloman Reinach, whose contributions to archæology have often been mentioned in the ANTIQUARIAN, goes still

further in the September number of the *Revue Archæoloique*, and seeks to prove that these dogs were supported not merely to guard the sanctuary; but because they were regarded as sacred. He cites in support of this view, a passage from the Epidaurian inscription, a translation of which is given in the ANTIQUARIAN for 1884, p. 364, where it is said that "Thuson of Hermione, a blind boy, had his eyes licked in the day time by one of the dogs about the temple, and departed cured." The second but incomplete stela, also mentioned the same article, contains an allusion to a tumor on the head which was cured in a similar way by "one of the sacred dogs."

M. Reinach contends that the dog at Epidaurus played a part in early days, as the representative of the god similar to that of the serpent and if the serpent alone is heard of in literature, it is because the serpent had usurped the place of the dog during the literary period. In art the dog is figured together with the serpent at Epidaurus, in the Aesculapium at Athens, and on the coins of the Magnetes in Thessaly. Aesculapius has been believed by many to be a Phœnician deity corresponding to Eshmun, and M. Reinach thinks that the dog was his representative at the time when his worship was introduced into Greece, and the Citium inscription is proof of such connection in Phœnician regions. It is true, he says, that the temple at Citium, to which the inscription relates, was that of Astarte, but the cult of this goddess may have been associated with that of Eshmun (as Serapis with Isis.) In support of this theory we may give some additional evidence. Aelian says (Hist. An. XI, 3,) that at Aetna in Sicily, there was a highly honored temple of Hephæstus, containing an unquenched and sleepless fire, and about the temple and grove were "sacred dogs," that welcomed and fawned upon those who entered the precinct with pious hearts; but if any one came with polluted hands or from wicked associates, they would bite and rend them. Again he tells us (XI, 20,) that in the city of Adranus in Sicily, there was a temple of the deity Adranus of great fame, to which "sacred dogs" were attached, not less than a thousand in number. They acted as servitors and attendants of the god, and surpassed in beauty and size the famous Molossian breed. During the day they welcomed all that entered the temple and grove, whether natives or strangers; at night they played the part of the good policeman. Apparently the excellent cheer that was furnished at the temple was accustomed to produce its effect upon the visitants; for Aelian says that such as were quite intoxicated and could only stagger on their way, the dogs conducted very tenderly and safely to their homes, but such as were violent and noisy, they jumped upon and rent their clothes till they brought them to their senses; while thieves and pickpockets they tore to pieces without mercy.

The history of Sicily shows that we may naturally look for strong Phœnician influence in its early cults, and the Hephæstus of Aetna has been connected, on the one hand, with the Hephæstus of Lemnos, the Cabiri and the Phœnician Kabir, on the other with the Greto-Phœnician Talus, with his dog-attendant, both of which are figured together on the coins of Phæstus in Crete. Creuzer sees in this Hephæstus one of the phases of the sun-god at the height of summer when the celestial dog is raging. Adranus is believed by some to have the same origin and the legends bring him into close connection with Hephæstus. On the coins of the Mamertini he is accompanied by his symbol, the dog.

It is a commonplace in mythology that the dog was sacred to Hecate and sacrificed to her. This diety was one of the phases of the tri-form Diana, as the Cretan Dictynna was another. In his life of Apollonius of Tyana, who pretended to be a sort of second Aesculapius, Philostratus gives an account of a temple of Dictynna in Crete, which maintained numerous dogs as fierce as bears, that recognized Apollonius and welcomed him, though he came at an unseasonable hour when the temple servants thought him a thief. Here, as at the Aetnean temple, the dogs are accredited with an insight into the character of the visitant, which might have been regarded by the Greek as partaking of the divine, the servitor being *en rapport* with the god, as when the dog at Epidaurus acts as the healing agent of the diety. Philostratus, indeed, says that the dogs of the temple of Dictynna were kept to guard its treasures, but their connection with the huntress goddess may well have been regarded in another light in earlier days, as we find Hecate represented with a dog's head, and Isis and Bubastis in Egypt accompanied by their faithful hounds. Between the Egyptian Isis and Cretan Dictynna the Cypriote Astarte may be regarded as a connecting link. In the light of this investigation, the question is pertinent whether the old Hebrew interpreters of II. Kings xvii: 31, may not have been right when they assigned the figure of a dog to Nibhaz, the idol of the Avites, connecting the word with the root "to bark," as *Anubis latrator*. Among the cylinders and seals in Lyard's "Culte de Mithra," may be seen a dog on a pedestal with the six-rayed sun symbol above his head; before him stands an adorant (Pl. XL. No. 2). Likewise on Pl. XXXIX. No. 6, three altars are exhibited, each surmounted by sacred symbols, of which one is a dog.

The Semitic scholar, M. Clermont-Ganneau took up the subject in the Revue Critique of Dec. 15th, in which he introduces some of the authorities cited above, and adds from Festus, that "Dogs are employed about the temple of Aesculapius because he was suckled by the dugs of a dog," and another passage from Tarquitius as quoted by Lactantius, who says that Aesculapius

was born of uncertain parents, found by hunters, and brought up on dog's milk. This shows, M. Clermont-Ganneau urges, a closer connection between the god and the animal than the legend of Pausanias, who relates that when the babe was exposed on the mountain adjacent to Epidaurus, it was given suck by a goat and a dog guarded it. Furthermore, M. Clermont-Ganneau recalls the derivation proposed by Bochart for Alklepois, from the Hebrew *ich-kalbi*, "man-dog," a derivation which M. Reinach (who returns to the subject in the Nation of Feb. 12th, and the Revue Archeologique for Jan. 1885, and to whom I am indebted for M. Ganneau's contributions to the matter) supports by the citation of a form of Asklepois found in an archaic Corinthian inscription, "Aischlabois," "a form certainly very similiar to the Semitic prototype proposed by Bochart." He continues, "My learned friend, M. Hartwig Derenbourg, has drawn my attention to several other Semitic texts which are certainly of great importance to the question. In a Phoenician inscription from Cyprus (Corpus inscriptionum semiticarum I., No. 49) we find a man named *Kelbelin*, viz: "dog of the gods," or "dog of god." In another inscription from Cyprus (Corpus, I. No. 52) a man is named *Kelba*, which is likewise the name of his grandfather. According to M. Renau, the name means "Canis Ejus, id est canis Dei." The Biblical *Kaleb* certainly belongs to the same series. In I Samuel, xxv, 3, the Greek version of the Bible has *anthropos kynikos* for the ethnical name Kalebi. On the whole, the documentary evidence derived both from Semitic and classical literature goes to uphold the oppinion I expressed as to the importance of the dog in Greek and Phœnician religion."

However this may be, it raises the interesting question of the status of the dog in antiquity, among the nations of the Mediterranean. In Homer the dog is the symbol of shamelessness, and classed with birds as the devourer of the unburied dead. But he is also the table pet, and the hunter's pride; and no nobler tribute has ever been paid to him than that to the faithful Argus, in the Odyssey, who recognizes his master after twenty years' absence and dies for joy at the sight. No mention is made in Homer of the dog as used in sacrifices, but in expiations it was one of the usual victims, though it was never offered to the Olympian deities. The idea of the necessity of expiation by sacrifice, or otherwise, is later than the Homeric poems, and was probably derived from the East, Grote thinks from Lydia, and the sacrifice of the dog may well have come with it. Plutarch in his *Quaestiones Romanæ* (iii) discusses the question why the priest of Jove, at Rome, was not allowed to touch or name a dog, and says that no dog was allowed to enter the accropolis at Athens or the island of Delos. Some thought that this was due to the salacity of the animal, and he acknowledges that the

"ancients" regarded it as unclean, but he thinks a weightier reason is to be found in the fact that no obstacle ought to be placed in the way of a suppliant flying to the temple, and a dog might frighten him away. Again (Q. R. 90) he relates that when the sacrifice of Hercules is held at Rome, no dog appears in the precinct. But the Romans sacrificed the dog to Genita Mana, a deity he considers to be connected with childbirth; just as the Greeks offered this animal to Hecate, and the Argives to Eilionia or Ilithyia. The Iacedemonians sacrificed it to the god of war, and the Romans at the festival of Iupercalia offered it probably as a purification. In connection with temples we find it mentioned by Plutarch (Q. R. 3) where he tells us that a man offered some violence to a woman sacrificing at the temple of Artemis, and was torn to pieces by the dogs, and in his treatise on the intelligence of animals he recounts the story also told by Aelian that a thief once entered the Æsculapium at Athens and stole some of the gold and silver offerings and escaped without being noticed by the attendants. He was seen, however, by the watchdog, who tried to attract the attention of the servitors without success, and failing in this he followed the thief without letting him out of his sight day or night till they were overtaken by the officers, who were sent out when the offerings were missed, and hearing of the singular conduct of the dog followed on his track as far as the territory of Corinth. The thief got his deserts and a decree was passed that the dog should receive food at the public expense, and the care of him should devolve upon the priests forever. The Lares were represented with the dog as attendant, and they were sometimes clad in dog-skins (Q. R. 51).

The flesh of the dog is frequently prescribed in the Hippocratic writings, and appears to have been a not uncommon article of diet. That of the puppy is classed with the kid and lamb as excellent for weak stomachs, and as the very lightest of animal nutriment. The full grown dog was regarded as more difficult of digestion, and a strengthening diet. As such it was interdicted by the quacks who professed to be able to cure the "sacred disease" or epilepsy by purifications and magical observances. The ordure of the dog, like that of man, pigeons, etc., was often recommended by regular physicians in certain maladies, as the later writings attest.

Not to pursue the subject farther, it may be seen that the dog was honored and despised, loved and hated, petted and kicked, in antiquity as at the present day, while he was certainly put to more uses then than now.

A. C. MERRIAM.

Columbia College, New York.

CORRESPONDENCE.

ANTIQUITIES OF THE WABASH RIVER.

Editor American Antiquarian:

There are many bluffs along the Wabash River which show the work of the Mound Builders. These can be traced from the head to the mouth. They are found, not only upon the bluffs, but upon the second bottoms. Several fine specimens have been found upon the bottom, and gathered into collections. Judge T. J. Long, of Terre Haute, has, perhaps, the best collection of them in the state. The bluffs vary in height from 50 to 100 feet. The bottom lands are 5 to 8 miles in width, narrower at the head of the river but wider at the mouth. The river is the boundary between the two states. All the tributaries show signs of the Mound Builders' works. All of the mounds which I have examined I think are of great age. There is a mound on the Wabash in Posey county, Ind., called the bonebank. It is very rich in relics such as axes, celts, arrow heads, spear heads, pottery and all manner of implements. When the river rises it washes the banks and on receding brings to light many relics. At such times the curiosity hunters visit the spot and are often well paid. This is a wonderful bank yet there is one at Merom, Ind., which is quite rich in relics. It is some 100 feet from the water. I have found pieces of pottery, axes, spear heads, shells, bones, etc. in it.

I first commenced exhuming the skeletons of the Mound Builders on my own place in 1879. It is situated one-fourth of a mile north of York, Clark Co., Ill. The first mound was in an old field which had been plowed for fifty years. It is now twenty feet across. I dug two feet deep into the centre and found a skull and the bones of a skeleton. The second mound was in the same field. It was forty feet across. I dug some four feet and found only a few flakes of arrow heads and some worked stone but no implements. The third mound was forty feet in diameter. I dug two feet and found three skeletons in a sitting posture. I dug one foot deeper and found three more, one to the north-west, two to the south-east and three to the south. One had a pottery plate placed at the top of his head, the plate being the shape and size of the top of the skull. There were some twenty mounds in this group. The fourth mound is 800 yards south-east. Here I found pieces of pottery, and bones and an implement. I dug into a mound two miles south of this place. Thirty feet across. I dug seven feet and found only a few arrow flakes. This is situated one mile south-east of Hutsonville, Crawford Co., Ill. It was in the

timber on the second bottom thirty feet above the river. I dug two feet and found two skeletons, one with face to the east and the other to the west, in a sitting posture. Here there were implements and ornaments which appeared to have been placed in the laps of the persons buried. There was a pipe, three sand stone implements partly finished, arrow points, fragments of ornaments and specimens of pottery. E. A. HODGE.

ANCESTOR POSTS ON THE PACIFIC COAST.

Editor American Antiquarian:

I have seen only two of the "ancestor posts" or effigies of the tribes on the Pacific coast. The work is not done with sufficient artistic skill to impress me with their accuracy of feature. I have not seen these Indians, but we have sketches of their features by skillful artists and they do not correspond with the effigies I have seen.

If the effigies are correct we need a large number of them to settle upon the true physiognomy of the people, whether ancient or living. There is the same difficulty with the stone effigies of Ohio. None of them which I have seen accurately represent the Indian as we know him, yet most of them must have been made by him. He succeeds better with animals than with the human face. I have seen the Chippewas of Lake Superior carve human heads on their stone pipes, but they do not represent the race in general or individually.

Possibly the statuary, statuettes and pictures of the Mexicans and the people of Central America may be of more ethnological value. C. WHITTLESEY.

Cleveland, O.

THE SUN SYMBOL IN EARTHWORKS.

CINCINNATI, O, July 11th, 1885.

Editor American Antiquarian:

It has been quite a while since I received yours of the 14th ult., asking me to state my position in regard to the symbolism of some of the works of the "Mound Builders." I am doubtful of my ability to be of any assistance to you in this matter. I must also plead the lack of time to give it the proper amount of study. However, I will briefly state what I think about the subject. To begin with, as you can see by examining my books, I am skeptical about the high civilization or culture of the Mound Builders. Therefore I am not prepared to find in their work any great degree of symbolism. I well know, that this is not the proper way to commence an investigation. I only make the statement to you so that

you can see the drift of some of my remaks. Now please refer to plates 20 and 21, of "Squier and Davis." There is unquestionably a great deal that is common in the works shown in these plates. Before drawing any inferences from that, we are to take, not these plates alone, but all the works in that immediate vicinity and if there be any symbolism in them it must be found in elements common to them all. The authors speak of these works as forming in themselves a "singular series." Now I inquire, what is it that is particularly distinguishing about them? The only common feature they have, is the possession of a square. There are five figures given. Two of them have three circles the others two, but you must notice that in all the figures the position, the size, and degree of perfection and the arranement, the circles vary. No two are alike Furthermore in the same locality, or but a few miles distant, we find squares in connection with octagons, squares in connection with but one circle or square alone. Now I fail to see that there is anything in these figures excepting a square that is common to them all. All I can say is this, that the work of the "Mound Builders" in the Scioto Valley often starts with a square in connection with one or more circles, but we can also see that the position of the circles is such that we cannot settle on any one as being a symbol. I fail to find any two alike. Sometimes as you know, the square is replaced by an octagon, as plate 16, also plate 25. In some cases there is quite a little distance between the circles and the square as seen in plate 24. Sometimes the circle is tangent to the square. Therefore I would feel like saying that these enclosures do not betray enough common elements to call them symbolical. Now let us refer to the small circles and enclosures to which you ask my attention. I am very free to say that the greatest trouble in my mind is in reference to these small enclosures. For instance figure 2, which you know I also reproduced in my book, shows us the square inclosed in a circle. I cannot possibly conceive what the object of such an arrangement is and we know there are other very singular forms. However, the majority of

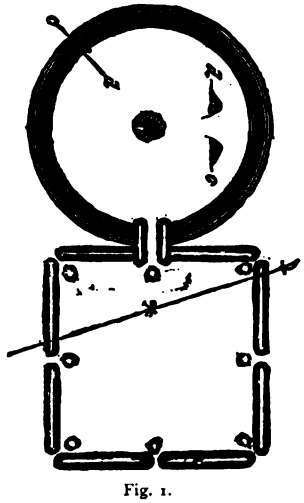

Fig. 1.

Fig. 2.

these forms are circles or portions of a circle. They are not proper crescents, such as we would expect people to use to designate the moon, and it also seems to me if they were intended to represent the sun there would be something in the nature of rays, extending from the circle. This is also to be said, that we have to distinguish, whether these works are in themselves symbolical, or did they mark a place where religious exercises were held. It seems to me that if they were in themselves symbolical, we would not find a number of them located in the same neighborhood. For instance, in plate 23, we notice no fewer than nine of these small circular enclosures and all of them have at least one opening. Now when we recollect that it took no little labor to form one of these circles and excavate the ditch, we can scarcely believe that a people in the state of culture that the "Mound Builders" are known to have been in, would go to all this work, simply to throw up nine symbolic embankments when one would have done just as well. The mere fact that they made nine of them would seem to prove that they were for some utilitarian purpose, though what that use was, is of course now unknown. Referring to the figures above, especially to their dimensions, I find that the larger circles enclosed a trifle over an acre, and that the smaller two enclosed a trifle over a quarter of an acre. But it is evident that quite a body of people could find protection in either one of these areas. Now does it not seem more reasonable to you to suppose that these circles were fortified embankments thrown around the camp of a "Gens," that each "Gens" of a tribe would make themselves a separate encampment. Take plate 32, No. 4. We have here four of these small circles the area of which is a trifle over one acre near together. If these are simply sacred inclosures I do not beleive that they would have gone to the trouble of throwing up four of them. The fact that they did make four so near together shows, to my mind, that they made them for some useful purpose, and I think they were for the encampment of a portion of the tribe. Such figures as are given by Mr. Conant, that is the triangles and pentagons whose sides show such nice proportions, I can only express myself skeptical as to their existence. Figs. 3 and 4. If it be a fact th at they were thrown up in the manner he states and in such nice proportions, then I should say at once that they were symbolical in design,but you know that no one has succeed-

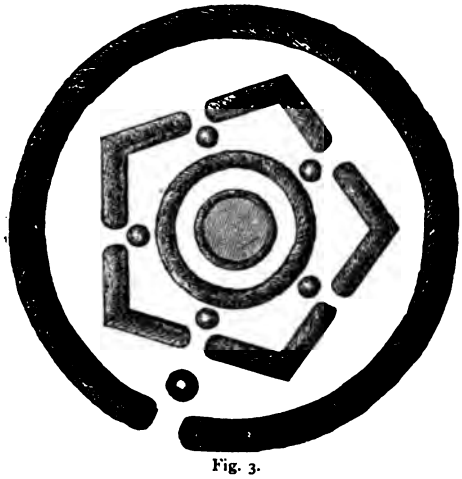

Fig. 3.

ed in finding them except Pidgeon, and you know there is a great deal of skepticism about his finding them at all. There are some other figures given in Squier and Davis that I confess are rather puzzling to understand. For instance, plate 34, No. 2. I can see no sense at all in it, or any use that it could have been put to, and to be candid, I don't know whether it ever existed or not, in the shape in which it is delineated. The Portsmouth works are to me a puzzle. I don't know what to say in regard to them. I have no theory even. If there are any symbolical works of the "mound builders" at all I should place this group among that number. Plate 30, No. 4 is another very singular structure. You have already remarked on its similiarity and resemblance to a "rattlesnake." You know what Mr. Pidgeon has to say in reference to these five mounds. He calls them "vanishing points." I understand that Dr. Phene thinks they represent the rattles. As for myself I have no theory on the point. You have called attention to some of the walls which you suggest resemble serpents. Every one must see the resemblance of some of them to a serpent, but the question in my mind is whether that resemblance was premeditated or is accidental. Of course embankments that follow the general contour of the hills, would in time, instead of having angles, gracefully curve, and so resemble serpents, but whether the builders intended any such form is a question with me. But to conclude this somewhat rambling letter, let me call your attention to the plates. You will see that I am right when I assert that there is no particular type in that valley. We notice works of various shapes. There are squares with two circles, with three circles, or with none at all. There are large and small circles. I would be in favor of calling them simply enclosures and be cautious before deciding that any of them are symbolical in their nature.

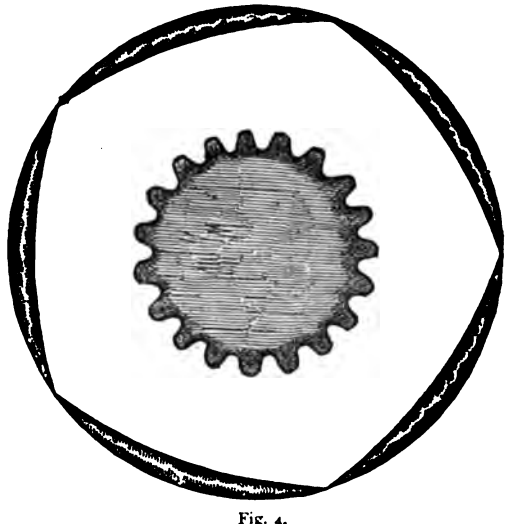

Fig. 4.

Yours very truly, E. A. ALLEN.

A FORTIFICATION AND A CEMETERY AT DAYTON, OHIO.

Editor American Antiquaran:

There is an enclosure on the Bluffs about two miles south of Dayton, which I think has been described, but I have not seen the description. It is now included in the Catholic cemetery and is rapidly disappearing. Mr. Shinn, of Dayton, surveyed and mapped this work and kindly furnished me with a copy. The form is an irregular ellipse, which resulted from following the highest ground. The wall, which averages about three feet high and ten feet broad, is formed of surface material, hence clay enters largely in its composition. But the south part of the circumvallation, which traverses a gravel ridge, is formed to a great extent of gravel and boulders, which has led some to the erroneous conclusion that this section had been paved.

An interesting feature in the work is a broad and deep ditch which commences at the south-west corner and extends some fifty yards in a nearly north-east direction. The object of this excavation is difficult to explain, as it is not probable that it furnished material for the entire wall, and no other depression has been discovered. It is clearly no ravine, as the bottom presents a regular rounded, and in some instances, level outline; moreover, the declivity is not sufficiently abrupt to justify such a conclusion; and yet, strangely enough, the wall appears to have been built across it, while the cut is continued beyond for the space of a few yards to the crest of the cliff.

Possibly a tunnel at this point served as an outlet for the drainage of the south part of the enclosure. This hypothesis is weakened however, by the reflection that other parts of the enclosure have no such provision. But perhaps, as Mr. McLean has given his readers, in his "Mound Builders," a description of the Lower Twin or Carlisle Works (though in some instances erroneous and exaggerated) I shall omit any special reference to it.

Since I wrote my article on the ash heaps of the Miami valley, I have read Mr. Langdon's description of the Madisonville discoveries in Prof. Short's book. The deposites of ashes he describes appear to be identical with those discovered by Prof. Putnam, referred to in your letter.

I visited the prehistoric cemetery at Dayton, and found the developments deeply interesting, and at the same time very perplexing. The difficulty arises from the apparently anomalous character of the interments, in which are blended characteristics of the Mound-builder and the Indian.

A tolerably clear conception of this feature may be gathered from the following description of the locality: The cemetery is situated on the left bank of Stillwater, near its mouth. The discovery was made last summer while constructing a levee, the material for which was taken from the space between the levee and the bank of the river. The removal of about twenty inches of

surface material revealed patches of burned clay, under which reposed the remains, with fragments of pottery, mussel shells, implements of bone and deer's horn. The shells are remarkably well preserved. The margins are worked off smooth, and the rough outer coat removed. Some of the shells were perforated.

The quality of this pottery is excellent. Sand and finely comminuted shells enter into its composition. The evidence is clear that the vessels had been moulded in a cloth sack, as the imprint of the cloth is very distinct. An interesting specimen in my collection shows the charred fibres of the cloth still imbedded, which if we had no other evidence, demonstrates that the ware was subjected to the action of fire, destroying the sacks in the process.

The slight covering, in connection with the sound condition of the relics, is suggestive of Indian burial, while the superior quality of the pottery, the baked clay envelope, and the unmistakable evidence of a knowledge of weaving in those days, may be claimed as arguments in support of a civilization immeasurably in advance of the wandering savage.

Should we regard this and similar discoveries as evidence of decadence or declining energy? Or as indicating a radical change in the mode of sepulture from cremation to inhumation? Or is it due to changed conditions which resulted from the disruption of the old Empire, a commingling of forms?

The extent of this old burial place has not been determined as no excavations have been made where the soil is undisturbed From indications it covers many square rods.

Since I wrote last, I have come in possession of the "Dayton image." Also a donation from Mr. P. I. Pease, of Dayton, comprising 23 pestals; 2 beautiful maces, or war badges; 3 "rolling pins;" 20 axes, grooved; 12 do. plain; fleshers and gouges 6; hammers, grooved 7; plain 11; anvils 2; miscellaneous 6; including a veritable tablet, but of comparatively recent date, namely, 1720, clearly cut on the upper margin of a sandstone slab, ten inches by seven and 5/8 of an inch in thickness. It was evidently sawn from a boulder with a yellowish-white nucleus in the composition, of which quartz enters largely. The striæ made by the saw are distinctly perceptible. It was found in a plowed field near Bellbrook, Green Co., O. As to its authenticity there is no doubt, but the object had in view is left to conjecture. No inscription. A minute cross (thus †) is seen on the right hand side of the date, placed there as a period probably. Also a cup, weighing two pounds, material green ribboned shale, capacity about one gill; the cavity is very well executed. The rounded, pot-like form seems to be due to the rotary motion of a round-ended pivot of sandstone. It is probable that we have here a genuine paint pot. The front teeth of the male skeleton which I exhumed some years ago were colored blue, and like the Indians, it is highly probable that the Mound-builders improved (?) their appearance by a liberal use of red ochre, hence the neccessity for a vessel of some sort in which to prepare it. As heat destroys the color of this

beautiful mineral, it is not probable that this object was used as a lamp. Very respectfully yours, S. H. BINKLEY.

Alexandersville, O.

MOUND BUILDERS' RELICS FROM INDIANA.

Editor American Antiquarian:

I herewith send you a description of some of the relics which I have in my collection. (1.) An unusually large amulet of the type often called "saddle stone" or brooding ornaments, or "bird," "duck," amulet. This was found on the bottom land, about fifty rods from the Wabash river, seven miles south of Peru, Ind. I have found on the same farm numerous arrows, axes, fleshers, and three perforated tablets. The amulet to which I refer is unlike any other that I have owned. The body and especially the head are much larger. The head resembles a mammal. The stone has no perforations. Last week I procured an amulet of this same type, but of a more common form. It is highly finished but has no perforations. During the last seven years I have located some twenty of these amulets though the most of them I have disposed of. I have at present five of the above type. (2.) A Tablet which is of considerable importance as it has cup-shaped impressions upon it. This I came across last week. The impressions are similar to those described by Dr. Charles Rau, in his monograph Contributions to Am. Eth. Vol. V, Type 1, Fig. 1. (the common form.) The Tablet is in the collection of Dr. John W. Hall, Sweetzer, Grant Co., Indiana. The Tablet was found on the surface and in the same field, on the same day, one broken ceremonial axe, perforated, double bladed and one crescent perforated mace. These were in good condition. They may possibly have been the relics of Mound Builders or they may have belonged to Indians. (3.) I have a relic which differs from any thing I have yet seen. It resembles a spade or digging implement, as it slopes to the edge, yet does not show any more polish at the edge than any other part of the stone. It is made out of slate. If it had been used for digging it would surely give more evidence of use than it does. What is most interesting in the implement is, that it has a deep groove running the whole length but gradually running out. The groove shows traces of polish as if it had been placed in a handle and used as a spade. There is a notch at the upper part where the groove is deepest as if the handle had been fitted to the stone.

(4.) A specimen made out of cannel coal was found 56 miles east of a gravel bank east of Portland, Jay Co., Ind. It was found with five human skeletons. I have in my collection over 100 implements made from slate or greenstone, five quartz implements, one of them a discoidal stone found in Miami Co., Ohio, one "boat shaped" implement, Grant Co., Ohio, one "ceremonial axe," Miami Co., Ohio, others found in Morrow Co., Ohio. These are finely polished and are interesting relics. J. R. NISSLEY,

Bunker Hill, Miami Co., Ind.

EDITORIAL.

EXPLORATIONS AMONG THE EMBLEMATIC MOUNDS.

The editor of this journal has been spending several weeks in exploring the mounds of Wisconsin. Journeys were taken into the eastern, central and western portions of the State, one of them without company; one of them in connection with Dr. Cyrus Thomas and his assistants; others with associates, gentlemen who are interested in the subject of archæology, but not professionals. The results of these explorations will be given hereafter at length, but are here referred to briefly.

There was one locality which Dr. Lapham has described in his "Antiquities of Wisconsin" which we were anxious to visit, that at West Bend, Washington County. This is the locality which was first visited by Mr. L. L. Sweet, a surveyor. According to this gentleman's account there was here a defensive enclosure consisting of long straight walls which ran at right angles to one another, and within the enclosure were the effigies of certain military weapons, such as war clubs and sling-stones. The description was unique, and gave the idea that here was the abode of a military clan. A trip to the place revealed something very different. No enclosure was there, no effigy of a war club, and no signs of a military residence. In fact, so far as has been discovered, no actual military fortifications existed among the emblematic mound builders. Enclosures are very few, and those mainly designed for permanent villages. Occasionally, quasi enclosures have been discovered which were apparently designed as corals for elk or deer, and one was devoted to religious purposes, though possibly the seat of civil power, a place where chief council houses were erected. An enclosure was found on the west side of the Mississippi in Alamakee Co., Iowa, but this proved to be the site of an Indian village, and not the home of emblematic mound builders. At least every indication was to the effect that a warlike and savage tribe had a residence in the wild retreat and here left the traces of their stockade. The locality in West Bend presents no enclosure, but instead there is a very large group of animal effigies. These effigies are scattered promiscuously over the surface, once nearly covering with their massive forms, the thirty acres of forest in which they are situated. Some of them have been destroyed and the area has now been reduced to about twenty acres. They may have been tribal emblems, and poss-

ibly embodied a tribal record. The effigies are very distinct, some of them rising in bold relief three or four feet above the ground, and stretching out three or four hundred feet in length. They present a great variety of forms including the effigies of panthers, wild cats, squirrels, raccoons, birds, serpents, lizards and other animals. It is a very interesting locality to visit, the only trouble is that every visitor thinks that he must *dig and destroy*. Digging into the emblematic mounds has, however, generally resulted in disappointment. Excavators rarely find any relics.

The second place visited was the celebrated ancient city Aztalan. The inquiry in reference to these works was, did they belong to a tribe which had migrated and brought in the southern type of pyramid building, or did they belong to the emblematic mound builders? We think that our discoveries prove the latter. We at least found emblematic mounds within a mile of this enclosure and believe that we discovered traces of effigies within the enclosure itself. Dr. Lapham's descriptive plate would indicate this and the fact that the works in the vicinity were all connected by signal stations would also indicate that the effigies near the cemetery, a mile north of the ancient city, were built by the same people. We discovered in the vicinity traces of two or three distinct periods of occupation. At Mud Lake, ten miles north of Aztalan, there is a series of mounds and earthworks. One group contains corn hills, garden beds and small burial mounds but no effigies. Another group contains massive conical mounds arranged in a large circle around an enclosure as if it was the site of an ancient village. A third group contained animal effigies. The same point was proven by a series of mounds at Lake Mills, three miles west of Aztalan. Here on one side of the lake were about fifty small burial mounds, all of which contained bones in good preservation; undoubtedly those of Indians. On the other side near the village and on either side of the railroad were effigies and associated with them were many long mounds, which were undoubtedly used as screens by hunters who resorted to the lake and to the marsh which forms the inlet of the lake, to shoot duck, wild geese and water fowls.

A third expedition was made in the direction of Prairie du Chien. The discoveries made here are important. There are here massive heaps of earth the object of which has hitherto been unknown. In examining three different localities, both above and below the city of Prairie du Chien, it was discovered that the object of these heaps was to form places of retreat in times of high water. The mounds were arranged around a large circular enclosure as if there had been extensive villages within the circles, but the situation of each village was on the bottom land, or rather the first terrace where on rare occasions the water might overflow and bring danger to the inhabitants. This was the case especially in the village which was situated near Wyalusing, six miles below the mouth of the Wisconsin river. Parties under the employ of the Ethnological Bureau at Washington, have spent two seasons in excavating

these mounds but to very little effect. Intruded burials have been discovered but Mound Bulders' relics have been few and far between. Citizens of Prairie du Chien have dug into the mounds but have discovered very few relics in them.

Another point of inquiry was in reference to the elephant and camel effigies. It is the second time that the editor of this journal has made a search for them. Dr. Thomas was present when we went to the locality where Dr. J. W. Phene says he discovered the camel effigies in Campbell Cooley. We found an obliterated buffalo effigy but no camel. The place where the elephant mound is said to be located was not visited by Dr. Thomas. It is situated in a swale which runs down towards a large bayou of the Mississippi river. Near it there is a bird effigy. The wings of the bird stretch across the swale but the body of the so-called elephant stretches lengthwise with the head toward the river. We saw the effigy two years ago and examined it closely. This year we reached a point of land from which we could see the two effigies in their relative situations and in their topographical surroundings. We think that the two were designed for a game drive but we are hardly prepared to say that the game which was hunted was either the mastodon, the mammoth or the elephant, primi genus or Americanus.

Another point which is a very interesting one, was cleared up by this summer's explorations. The fact that the effigy mounds were frequently erected as game drives we think will now be acknowledged. This was the conclusion which the party under the employ of the Ethnological Bureau reached, we believe. The point which was taken up in connection with the acknowledged use of the effigies and long mounds combined, was, where are the villages in which the hunters made their residences? The conclusion which the editor of this journal has reached after many days of exploration is that they were situated on the bottom lands or terraces near the rivers but they were sometimes ten and twelve miles away from the game drives. The village sites of the Mississippi river we think are to be connected with the game drives on the ridges or water sheds which divide the Mississippi river from the Kickapoo valley. In searching along this rugged and precipitous valley we discovered the corner effigy or the effigy which marked the boundary of the particular clans whose game drives we have discovered before on the distant summit. It was the same effigy, namely that of a swallow, which had been seen in connection with the effigies of buffaloes and bears in the game drives but it was here isolated and yet was on a summit of land which could be seen plainly from the distant game drives.

The clan boundary was the last point which we sought for in our explorations. Clan totems were discoved in connection with the three villages on the Mississippi river, at least the villages to the north of the mouth of the Wisconsin were proven to belong to a different clan from those on the south side of the river. The location of the clans was studied in many other localities but in none

so satisfactory as here for the reason that the effigies had been preserved better in the midst of the rocky and rough hills adjoining the river than they are any where else in the State. Great havoc has been made with the emblematic mounds since Dr. Lapham made his survey and published his monograph. The data has been destroyed in many localities so that it is impossible to make out the system that existed except as one goes to the wildest and most uncultivated parts of the State.

NOTES ON AMERICAN ETHNOLOGY.

BY D. G. BRINTON, M. D.

LECTURES ON THE NAHUATL LANGUAGE.—It may be news to most readers that in Paris this summer a regular course of lectures was delivered on the Nahuatl or Aztec language. The lecturer was the learned M. Remi Simeon, already well known to students by his excellent edition of the Nahuatl Grammar of Olmos. His introductory lecture delivered in May last is published in the *Archives de la Societe Americaine de France.* He refers to the beauty of the language, the means of studying it, and its character. M. Simeon has for many years been preparing a dictionary of the Nahuatl, the appearance of which will be welcome to all who would pursue a course in it.

AN UNDESCRIBED NAHUATL MSS.—Not long since I came into possession of a voluminous MSS. in Nahuatl, which is apparently undescribed. It has 373 leaves octavo, closely written on both sides in a small but beautifully clear hand. The contents are sermons exclusively. There is no title page. It once belonged to the library of the celebrated bibliographer Beristain, as appears from his name on the first and last pages. At the end of the first sermon there are added the words, "*an de 1543, Zumarraga*;" but paper and handwriting are of the 17th century, I should judge, and in its present shape the MSS. cannot be attributed to the famous archbishop.

METALS AMONG THE ANCIENT AMERICANS.—Last year Dr. Richard Andree published in Leipzig a work entitled "*Die Metalle bei den Naturvölkern mit Berucksichtigung Praehistoricher Verhältnisse.*" Several chapters of it are occupied with the use of metals by the American Indians before the discovery. His researches include iron, copper, tin, bronze, gold and silver. His conclusions are cautious, and his pages may be taken as a very fair summary of the knowledge of metals disseminated among the tribes previous to the discovery.

BIART ON THE AZTECS.—The Parisian publisher, A. Hennuyer, is issuing a series of volumes under the general title, "*Bibliotheque Ethnologique*," the latest to appear of which is a handsome volume

with the title, *Les Azteques, Histoire, Moeurs, Coutumes, par Lucien Biart.* The contents, however, are disappointing. The author gives no references for his statements on the ground that he is not writing for men of science; he is evidently quite unacquainted with the modern literature of his subject, and I suspect very little with the original sources; the purely mythical Toltecs still figure in his pages as men of flesh and blood; all the maps and illustrations are borrowed; even his map of the Aztecs is a reproduction of that in Clavigero's history. If the remaining volumes of the *Bibliotheque Ethnologique* are to be composed in this style, as mere job work, they will have value neither to the general reader nor to the man of science.

ANCIENT HUMAN REMAINS IN MEXICO.—Under the title *Mission Scientifique au Mexique et à l'Amerique Centrale*, the French Government is publishing a series of interesting volumes on our southern neighbors. The first issue relates to the anthropology of Mexico, and contains an instructive description of some ancient human remains disinterred in the Valley of the City of Mexico. The description is by Dr. Hamy, well known as one of the ablest living anthropologists. The most ancient skeleton described was obtained from a depth of about six feet, in the suburb of the city known as Tlaltelolco. The cranial capacity is unusually small, the face markedly prognathic, the bones of the arm and fore arm long, and those of the leg and thigh short in comparison with the modern standards. In these and other respects the skeleton has a simian aspect which separates it from the remains in later interments of the same locality, and leads Dr. Hamy to attribute it to a different stock from the Aztecs. That, however, the tribe to which it belonged was moderately cultured was shown by the presence of abundant pieces of pottery in the grave with it.

A discovery of remains of apparently much greater antiquity near the same locality is recorded in the last number of the *American Naturalist.* Portions of a skeleton were discovered at the foot of a hill called *Penon de Los Banos*, firmly imbedded in a calcareous Tufa. No ceramic remains were associated with it. From its general characteristics the rock is assigned to the older quaternary. The teeth are regular, indicating that the man belonged to an unmixed race ; the canines are not conical, but have the same shape as the incisors, a peculiarity of ancient Aztec remains. Unfortunately the skull was too imperfect to admit of measurements.

STUDY OF MAYA HIEROGLYPHICS.—There are a few earnest students who continue to give this interesting subject their attention. Dr. Forsteman, of Dresden, writes me that he has definitely fixed the character of the *Dresden Codex* to be a calendar of festivals which were to take place in a given number of weeks. He has ascertained the hieroglyph for 20 used in that codex. He has not been able to find any positive signs of phonetic characters, unless

they be in certain frequently repeated figures which he takes to be word-endings.

THE TARASCAS AND THEIR LANGUAGE.—The Tarascas inhabited the state of Michoacan and submitted voluntarily to Cortes. They were quite as civilized as the Aztecs, and spoke a language remarkable for its vocalic harmony and synthetic construction. We know, however, singularly little about them, and even in the National Museum of Mexico there is not a single specimen of their technical products. The language is still spoken with considerable purity, especially in some mountain villages. There is now some prospect that this neglect of them will cease. A native of Michoacan, an educated physician, has announced the publication of a series of works on their language and antiquities, several of them from ancient unpublished MSS. It is to be hoped that this worthy investigator, so well equipped for the work, Dr. Nicolas Leon, will receive from the Mexican Government the moderate assistance which he needs to enable him to carry out his meritorious undertaking.

THE KOLOSCH VERB.—A corrected scheme of the Kolosch verb has been reprinted from the proceedings of the Vienna Academy by Prof. Friedrich Müller. It is in part theoretical, but may be accepted as a correct exhibition of this difficult grammatical subject. Although the Kolosch verb has two forms, one by prefixes and one by suffixes, both are strictly American in character, that is, they are not verbs at all in the sense of Aryan grammar, but possessive and instrumental expressions.

THE MICMAC DICTIONARY.—There is some prospect that the Micmac Dictionary, which has been the result of forty years of labor by the Rev. Silas T. Rand, of Nova Scotia, will be published by the Dominion Government. The work is much the most complete representation of Eastern Algonkin lexicography which has ever been composed, and it is to be hoped that its appearance will not be delayed.

VON TSCHUDI, J. J.; Organismus der Khetshua—Sprache. Leipzig, F. A. Brockhaus. 1884, pp. 16 and 534. Contains a thorough and most interesting sketch of the evolution of the Peruvian language, and a full exhibit of Peruvian ethnography.

TEN KATE, DR. HENRY—Les Indians Apaches. In *Science et Nature*, Paris, No. of Dec. 27, 1884, pp. 54-58; illustr.

THE INTERNATIONAL CONGRESS OF AMERICANISTS.—The Sixth Biennial Congress of Americanists, which was proposed to have been held in Turin, Italy, in the month of September of this year, has been postponed on account of the cholera, which has not only been ravaging Spain to such a degree as would probaly prevent the attendance of several esteemed members of the Spanish delegation, but has appeared in Italy, and a few cases in Turin itself. The sixth session, therefore, will be held in Turin, in September,

1886; and that this may not interfere with the projected scheme of the sessions, the seventh session will take place the year following, and probably in Berlin.

By order of the Committee of Organization:

D. G. BRINTON, Vice President.

NOTES ON EUROPEAN ARCHÆOLOGY.

BY HENRY PHILLIPS, JR.

IN *Nature*, vol. XXX, p. 248, is a valuable illustrated paper by Prof. Jacobsthal, on the evolution of forms of ornament.

Vincenzo Dorsa has just published at Cosenza a second edition of his popular beliefs of Calabria,* in which he traces their Greek and Latin origins. This work contains curious details on sun and fire worship.

M. Pitrè has lately published in the *Acta Comparationis litterarum universarum* (Kolozsvar, Hongrie,) a valuable paper on the evil eye, entitled *La Jettatura ed il mal occhio in Sicilia.* The magazine is one of the best conducted in Europe under the scholarly Dr. Hugo Von Meltzel.

PROF. CARL MEYER (Bâle) has just published a work, "*Der Aberglaube des Mittelalters und der naechste Folgenden Jahrhunderte* in which he ably handles a neglected field.

M. GENEROSOV has just published (at Saratov) a work on the popular notion of *life after death*, based on folk songs, lamentations, traditions, etc. A curious and valuable idea.

PROF. KOULIKOVSKY (of Odessa) has published (in Russian) a work—"*Researches on the Bacchic cults in Indo-European antiquity*"—in which he studies the role that ecstacy has played.

PARIS.—On April 15, 1884, a Congress of learned societies was held at the *Sorbonne*, and a number of papers on archœlogical subjects was read, the most important of which wâs by Mr. *Nicaise*, on some objects found in a tumulus at Septsaulx, (Marne) France, none of which possessed any religious significance; by *P. de la Croix*, on the ancient burial grounds of Poitiers, of the 4th and 5th centuries, in which he had found 21 distinct methods of sepulture, from the plain interment of the poorest classes, up to the cremation of the rich; by Mr. *Ed. Forestie*, on some special customs of baptism, marriages, funerals, and ceremonials after interment which were prevalent at *Montauban.*

PARIS.—*M. de Charency* read before the *Academie des Inscriptions*, on March 14, a note on the name *Kukulkan*, as found in the Codex Troano, which he considers should read *Kukulkane.*

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*La Tradizione greco-latina negli usi e nelle credenze popolari della Calabria citt.

LA TAENSA, a-t'il etè, forgè. * * * Under this title M. Lucien Adam, the eminent Americanist, publishes a reply to Dr. Brinton's strictures on the Taensa grammar and dictionary. M. Adam freely admits all the suspicions that can arise from the non production of the original MS., said to have been once in the possession of M. Parisot, and adds some letters from the latter gentleman, which he himself considers unsatisfactory. But he falls back in his own defense on the ground that the Taensa grammar does not differ enough from other well-known American languages to be suspicious in itself. The pamphlet is caustic in style, and severe. M. Adam speaks of "putting one's feet on the table," which he says is not the custom in France; he says that France is not the classic land of imposture and humbug. All these things, even *if they were true*, would not be to the point in controversy, which is the genuineness of the work in question. A candid review of the situation must lead to great doubts, which only the production of the genuine MS. can dispel.

CARLOS VON KOSERITZ has just published a series of Anthropological essays relating to Brazil. Among his collections were stone implements found with the remains of the Megatherium, Rhinoceros, Cave Bear, etc., confirming the discoveries of Dr. Lund at Lagoa Santa, and assuming as great antiquity for the early American races as for the River Drift men of the old world. A remarkable skull found by him near Cidreira leads him to the opinion that the earliest inhabitants of South Brazil were distinct from and of a lower type than the tribes dwelling there in the historic period.—*Nature. Vol. xxx, p. 395.*

NOTES ON ARCHÆOLOGICAL RELICS.

BY E. A. BARBER, PHILADELPHIA.

RELICS.—A letter received in 1882 from Dr. Harvey Reed, Mansfield, says: My uncle, Thos. Reed, of Dalton, Ohio, has a very large and rare collection of prehistoric relics. He has been collecting for over 40 years. Dr. J. W. Craig, of this city, has lately secured the largest and finest mester. It weighs over a ton, is over two feet high and about two feet wide, with a concavity near a foot wide at the top. It is of "nigger lead." It was found in Ashland county, Ohio.

Mr. J. W. Laidlow, of Toronto, Canada, has a large collection of relics, such as are found in Canada, and illustrative of the habits of the Canada Indians. Mr. Hodges, of Clayton, Iowa, has been surveying emblematic mounds in Iowa. He has a collection of M. B. relics.

Mr. T. H. Lewis is diligently at work exploring mounds and searching for relics. He has found effigies in Iowa.

THE DESCRIPTION OF RELICS.

In our last number we described a number of relics which had been found in Siberia, in the extreme north of Europe and Asia. In our present number we shall speak of relics which have come from the extreme south of the same continent, namely, from Tasmania and Australia. Our description is taken from the bulletin of the Essex Institute, Vol. XV. 1883, and the cuts are those which were used, but which have been kindly furnished us by Prof. F. W. Putnam. The relics themselves are in the Peabody Museum at Cambridge, Mass. It will be noticed that these implements which come from the extreme south are much ruder in their character than those from the north. They indicate a very rude state of culture among the people who made them. The two series of relics exhibit a great contrast. The Siberian specimens are all of them polished stone, and in their forms follow quite an advanced type. Some of them have broad flanges, a feature which is quite rare in stone implements. The southern specimens are, however, neither polished or even chipped, but are mere fragments of stone which have been subject to very little change from artificial causes. The two series illustrate the contrast which exists at times between stone implements, and show the extremes of the stone age. We might place between these a series of implements which would embrace specimens from the paleolithic and the neolithic age, and yet would not pass the bounds which are marked by these relics.

There is a point, however, which these illustrate, and that is the manner in which rude people were accustomed to use their implements, or at least some of them. We would have no doubt that the polished stone relics had been used as cutting tools, probably as axes, but the rude specimens would puzzle us. Here, however, we have the relics hafted, the handles still left upon them. Prof. Putnam says: "Figure 1 is an illustration of a rude stone implement provided with a handle, from Tasmania. The handle is simply a tough twig which has been cut or scraped flat on one side and then bent over the stone, the flat surfaces coming together below the stone are secured in place by a string and form a rounded handle.

Another primitive form of cutting implement is shown in Fig. 2. This is from Australia, and was made by fastening sharp fragments or flakes of stone to a stick by means of a tenacious gum. It is a good illustration of the manner in which flint and other flakes may have been mounted for use as saw-like knives by North American tribes."

The comparison between these relics and such as may be found

in the American Continent is to be given. Prof. Putnam has compared them to the argillite relics which have been taken out of the gravel beds at the Delaware river, at Trenton, N. J. The comparison is a good one, especially as it illustrates an important point. The great question has been whether these argillite specimens were implements. They seem to have been chipped, but were they chipped so as to have been useful. Chipping may sometimes come from natural causes; from either pressure or abrasion, but there would be, of course, no such chipping as would indicate that they were intended for use or for hafting. If it should occur it would be a mere accidental feature and would not be repeated. Prof. Putnam has selected a specimen which in its form would favor the idea that they were intended for hafting, and has furnished cuts for the same. See Figs. 3, 4 and 5. He does not state how many such specimens there are in the collection.

He says that implements such as these were readily made from any kind of stone which fractures with a sharp edge, and they were formed by striking off pieces with another stone which served as a hammer. In each locality the stones which have this essential character soon became known, and hence we find that chipped implements made of several varieties of slate, jasper and quartz, are abundant in this vicinity, while in other parts of America flint or chert, obsidian, chalcedony, and other kinds of stones were used.

A variety of argillite was the material in common use among the people inhabiting the valley of the Delaware at a time so remote that we are unable, as yet, to express it in years. While we cannot affirm that the rudely made implements found in the Trenton gravel were fastened to handles, it is probable that they were, as we know that similiar implements are furnished with handles by savages probably as low in the scale of humanity as were the ancient men of the glacial epoch. Figures 3, 4, and 5 represent two of the argillite implements from the Trenton gravel.

There is a test, however, which might be applied. If a specimen could be found which showed the marks of abrasion or friction from being used with a handle, or even which had been dulled at its edge by pounding or cutting, the evidence would be conclusive. No such specimen has been found. The comparison which we should draw would be between the relic from Tasmania and the stone mauls which are found near the ancient mines of Lake Superior, though the Tasmanian implement is much smaller and lighter than these. The Australian relic may have its counterpart in North America, but we have not seen any. The difficulty in the case is that the wooden handle which may have been used for mounting saw-like knives have perished, and the fragments or flakes would be too rude in their form to show how they were hafted or used. The study of cutting tools or implements which were used like an ax, with a handle at the side has not been carried out very far in this country. We are thankful to Prof. Putnam for his suggestion and for furnishing cuts to illustrate it.

Fig. 1.

Fig. 3.

Fig. 2.

FIG. 1. Rude Stone Axe in a wooden handle. From Tasmania.
FIG, 2. Stone Chips fastened by gum to a wooden handle. From Australia.
FIG. 3. Implement of Argellite from the Trenton Gravel.

Fig. 4.

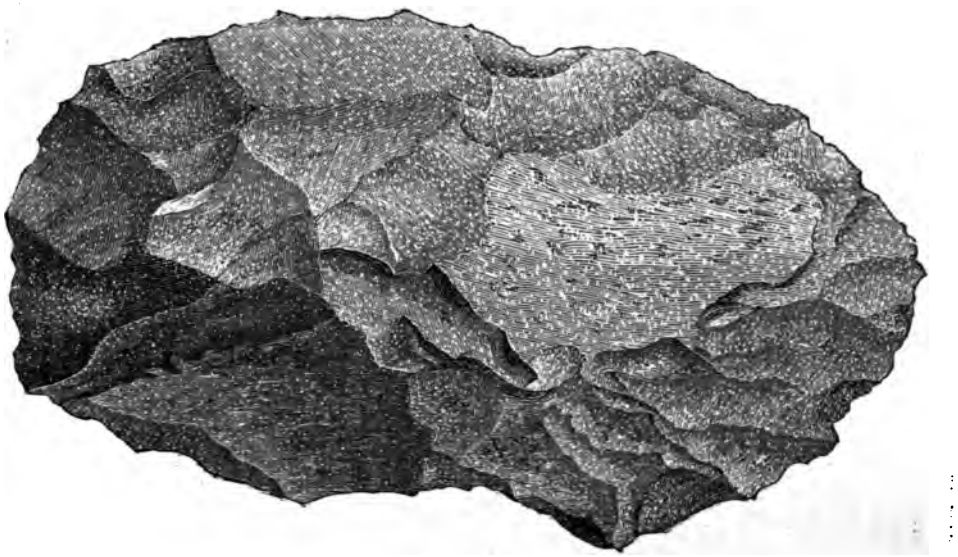

Fig. 5.

FIGS. 4 and 5. Implements of Argillite from Trenton Gravel,

NOTES FROM THE FAR EAST.

BY PROF. JOHN AVERY.

THE LANGUAGE OF THE KOLHS OF CENTRAL INDIA —The Kolhs or Kols, as the word is more commonly spelled, whose name has been extended to all the tribes forming one grand division of the aboriginal population of India, are found chiefly on the plateau of Chutia Nagpore, at the base of the great southern peninsula. Tradition assigns them an earlier home on the banks of the Ganges, whence they were driven to their present seats by the intrusive Aryans. Their name was first given by Hindus as an epithet of contempt, and means "swine slayers"; they call themselves *horo* 'men,' contracted into Ho, or *Munda-horo* 'Munda-men.' The Kolhs knew nothing of letters, until missionaries of the Gossner society first reduced their language to writing. For this purpose both Sanskrit and Roman characters were used. We have now a brief but excellent grammar of the Mundari-Kolh dialect, but no dictionary, save a few brief lists of words. Rev. A. Nottrott, the author of the grammar, has a dictionary in preparation. Portions of the Bible translated by the missionaries and a few other books for religious instruction, are the only other specimens of this tongue that we possess.

The Kolh language presents many interesting features, of which the following statement will give some idea. Gender is not denoted by suffixes, but by special words, as father, mother, or by prefixed words signifying 'male' or 'female.' These words vary according as the object is rational or irrational; thus, *kora hon* 'son,' *kuri hon* daughter, but *sandi sim*, 'cock,' *enga sini*, 'hen.' Three numbers—singular, dual and plural—are recognized; but formerly the distinction was applied only to living objects; it is now used in a limited degree to lifeless objects. The same disregard of the individuality of things without life is shown in the use of a neuter plural subject with a singular verb. The same law prevails in Greek. Substantives and pronouns are declined by added particles, which are the same for all words and all numbers. The dative and the accusative take the same ending. Adjectives are declined only when used as substantives The dual and plural of the first personal pronoun have each an exclusive and an inclusive form; by the first I mean "we, excluding you," and by the second, "we, including you." The Kolh has no distinct relative pronoun, but the forms of the interrogative pronoun are sometimes used instead, in imitation of the Hindi. In general, relative clauses are avoided by the free use of participles.

The language has native names for numerals only for 1 to 10 and for 20. All others are formed by combinations of these, signifying multiplication or addition. Thus, 20 is *hisi*; 40 is *bar hisi*, 'two-twenty,' 50, *bar hisi gelea*, 'two-twenty-ten'; 51, *bar hisi gel-miad*, 'two-twenty-ten-one,' etc. The cardinals are also used in an ordinal sense, except that 'first' and 'second' have distinct forms. The verb is by far the most instructive and complicated part of Kolh speech. It distinguishes three numbers; seven tense forms; and six mode forms. Person is usually expressed twice, once before the verb and again as a suffix. In the latter position the pronoun is expressed in full or is abbreviated according to the form of the verb. If a negative adverb precedes the verb, the personal ending must be appended to that instead of to the verb. The same transfer occurs in some other cases. The exclusive and inclusive use of the 1st dual and plural is recognized in the verb. The tenses are: Present, definite and indefinite; Imperfect; Future; Perfect, definite and indefinite; and Pluperfect. The two forms of the Present distinguish an act now occurring, from one stated as a general truth, as we should say "the man is dying," or "man dies." The Perfect indefinite answers to the Greek aorist and the Perfect definite to the same tense in English. The Present and Perfect are formed by suffixes appended to the verb-root; the Future has no tense

suffix; and the Imperfect and Pluperfect are formed with participles and a helping verb.

The modes are: Indicative, Conjunctive, Conditional, Imperative, Infinitive, and Participle. The Conjunctive, found only in the present tense, and the Conditional, formed from all tenses, are each marked by special mode signs, inserted between the tense sign and personal ending. The Imperative has forms for the 2d person alone, the other persons being supplied by the Conjunctive. An infinitive and participle may be formed from the several tenses by appropriate suffixes. Participles, like adjectives, are frequently transformed into substantives by adding the sylable *i* or *ni* to the tense stem. While the Kolh verb does not mark the gender of the subject, it has special forms in the Indicative and Conjunctive 3d sing., according as the subject is animate or inanimate. It also has the more remarkable peculiarity that, when a transitive verb has a personal pronoun as object in the accusative or dative, that object is incorporated in the form of the verb. Thus *aing abungtanaing*, 'I am washing'; *aing abungmetanaing*, 'I am washing you,' etc. Both person and number have expression in this way, in case of living beings. If the verb has both a direct and an indirect object, the latter only is taken into the inflection. A passive voice is formed by the insertion of a passive sign between the root and the tense sign, or if that is wanting, a personal ending; thus, *aing abunging*, 'I shall wash,' *aing abungoaing*, 'I shall be washed;' *abungtan*, 'washing,' *abungotan*, 'being washed.' A reflexive voice is in like manner formed by an inserted letter or syllable, *n*, *en*, or *on*, thus *aing abungentanaing*, 'I am washing myself.' The sign is the same for all persons.

A reciprocal conjugation is produced by the insertion, in the root, of the letter p with the root vowel repeated; thus, *kul* 'ask,' is *kupul*, 'ask one another'; *om*, 'give,' *opom*, 'give mutually.'

The syntax of the Kolh sentence is simple; the subject stands first and the verb last; limiting substantives precede those they limit; adjectively-used words commonly have the same position; but sometimes follow—in both cases without inflection. We have already noted that inanimate objects in the plural take a verb in the singular; on the other hand, when the subject denotes a woman who has children the verb is in the dual. The words which we call prepositions should for a similar reason be termed postpositions in Kolh. They do not cause any inflection in the substantives which they govern.

The Kolh and its sister languages belong to the so-called agglutinative division of human speech, which is commonly accounted inferior to the inflecting languages in apparatus for expressing thought. However this may be in general, even this incomplete sketch is enough to show that the Kolhs in their savagery have produced a system of word-forms—particularly in the verb—which would not inadequately serve as a vehicle for the thought of the most cultivated nation of Europe.

THE BAGOBO TRIBE OF SOUTH MINDANAO.—The island of Mindanao is the most southerly and, next to Luzon, the largest of the Philippine group. It has a varied population, consisting in part of Negritos, of Mohammedans with Arabic blood in their veins, and of Malay tribes of various origins. Among the last are the Bagobos, who have scattered settlements amid the forests in the southern part of the island. Two German travelers, Messrs. Schadenberg and Koch, recently spent some time with this people, and carefully observed their customs. The result of their observations has been published in the Zeitschrift fuer Ethnologie, Heft. I, 1885. The Bagobos live in villages, containing each about 200 fighting men, and built upon elevated spots convenient for observation and defense. At the head of each is an hereditary chief or Dato, who is the leader in war and the administrator of village affairs in peace. The population consists of freemen and slaves. The latter are captives in war or kidnapped children, and their lot is not especially hard, except that from them sacrificial victims are selected. Polygamy is practiced according to the wealth of the husband, but the wife first married holds the highest rank in the family. As soon as children get their permanent teeth the six front ones in each jaw are usually subjected to filing. These are sometimes brought to a point or filed back to the gums, or notched at the edge. Tattooing in elaborate patterns is practiced by both sexes as soon as they arrive at the age of puberty. When a person dies, the corpse, dressed in his best clothes and wrap-

ped in a mat of Pandanus, leaves is buried beneath the hut, which is ever afterwards forsaken. If the deceased was rich, a slave is perhaps killed and laid in the same grave. A surviving husband or wife usually marries again. The houses of the Bagobos are built of bamboo and set upon posts or living trees about 15 feet above the ground. They are reached by a notched bamboo pole, which is drawn up at night for greater security. The subsistence of the people is by agriculture and hunting. The former is chiefly of the rude sort practiced by the aboriginal tribes of India, which consists in felling and burning a spot of jungle and depositing the seeds in the ashes. Considerable skill is displayed in catching wild beasts in traps, or killing them with arrows or lances. The blow-pipe is much used for destroying the smaller animals. The Bagobos are fond of narcotics, and *balabac*, tobacco, and the betel-nut are always at hand. The first is an intoxicating drink made of the fermented juice of the sugar cane. Its stimulating qualities are sometimes strengthened by the addititon of a decoction of tobacco. A high sense of honor in regard to most things prevails among this people, but, singularly, the theft of horses, girls and children is not looked upon as criminal. The only punishments known are death and fines. Blood-feuds are constantly arising between families, and vengeance embraces not only the guilty person but all his relatives, so that whole villages are sometimes involved in hostility. The Bagobos have the religious notions common to people at their stage of culture. They say that heaven and earth were created by the two supreme gods, Ugismanama, and Mandarangan. The former is the god of the good and dwells in heaven; the latter is the god of the evil and is constantly seeking to harm mankind. At first the earth was covered with water, except the volcano Apo, the tallest peak in these islands. After other dry land had appeared, and vegetation had grown, of which the bamboo and the areca-palm were the first, the two gods, Todlui and Malibud, took, the one a bamboo and the other a palm and split them. Out of the first stepped a little boy, and out of the second a little girl; from this first pair the race has descended. The Bagobos believe in the immortality of the soul, and in the reward of the righteous and punishment of the wicked. The souls of the good reach the heaven of Ugismanama, having passed on the way ten stations, each ruled by a different deity; the souls of the bad having tasted the bliss of heaven, are remanded to the home of Mandarangan, where they suffer every conceivable torture. In explanation of certain phenomena of nature, they say that the sun loses its light at setting, and travels during the night toward the east that it may rise in the morning. They also call the sun a man, the moon his wife, and the stars their children. Thunder is caused by the movements of a huge swine in the center of the earth, that is beaten when it lightens. Earthquakes are produced by the vibrations of a huge supporting pillar of the earth when it is shaken by a mighty serpent. On such occasions the dogs are set howling to drive the disturber off. Eclipses are caused by the attempts of a crocodile to devour the sun or moon. The howling of dogs, the sounding of musical instruments, every possible noise is raised to deter the monster from his purpose. The language of the Bagobos is a dialect of the Malayan speech. The writer, Herr Schadenberg, gives us a brief vocabulary collected by him during his residence with this people, but allows us no further insight into the structure of the language.

ETHNOGRAPHIC NOTES.

BY ALBERT S. GATSCHET, WASHINGTON, D. C.

The poetic literature of the Slavic nations, especially of the Southern Slavs, has never failed to be singularly attractive to the European mind through its peculiar dreamful melancholy, its weird imagery, the doleful minor-keyed music accompanying its verses and the unvarying, though not monotonous trochaic rhythm in which their popular poetry is worded. This character is also inherent to the poetry of the Finns and Esths in Russia, who are not of Slavic, but of Mongolic origin. The mode of life, customs and manners prac-

tices and laws observed by the Southern Slavs are, however, more "naturalistic" and "rustic" institutions than those of most other European nations, and since we find much of the sensual, coarse and barbaric in them, we are reminded that what we regard as highly poetical in Slavic and other folk-lore, should be often designated by the more appropriate epithet of naturalistic, simple and naive. Simplicity is by itself one of the principal requisites of the poetical. Many authors have illustrated the civil and home life of the Slavs, and recently Dr. F. Krauss has from his proper experience sketched it more fully and thoroughly than others have done in recent times.* In getting up this extensive publication the learned and enthusiastic author has received liberal help from scientific societies and especially from an Austrian Maecenas, the Baron Ferdinand von Andrian-Werburg. Many sides of popular life are treated or spoken of only incidentally, as agriculture, trades and professions, music, dancing. But we meet with all details wished for concerning tribal and family relations, domestic life, courtship, marriage, married life, divorce, adoption, widowhood, hospitality, etc., the whole interspersed with frequent quotations from popular poetry and proverbs either in German or Slavic or both. Russia and Poland are referred to only incidentally, as the author's scope was to give a description of the Slavs *on the Balkan peninsula* only, and of the Southern border territories of Austria. Even a cursory perusal of the book suffices to give a high appreciation of the author's singular aptitude to unravel the hidden causes of certain usages from slight, but to him unmistakable indications, especially when they are taken from the words of the language. Krauss is familiar with several of the dialects spoken in the countries described by him.

LITERARY NOTES.

AMATEUR JOURNALS AND THE AMERICAN ANTIQUARIAN.—The past year has been remarkable for one thing, that is the rise of a large number of amateur journals. At no period since we began the publication of the ANTIQUARIAN has there appeared so many of this class, but in no period has so many been suspended.

The experiment may be said to have worked itself out, for the majority have already disappeared. This circumstance has led us to say a few words in reference to our position toward amateur archæologists.

It will, in the first place, be noticed that this journal has always been ready to recognize the work done by this class.

This is especially remarkable, that as archæology has been conducted in this country it is absolutely essential that encouragement should be extended to beginners and honor bestowed upon the veterans. The longitude or latitude of any journal or society or association, are not to be considered so long as good and honest work is done. There may be at times crudeness, but no journal can afford really to condemn even crudeness, for out of chaos some of our most orderly scientific specialties have arisen.

All that anyone can do is to hold himself to its own high standard, and yet encourage all classes, and so forge ahead as fast as possible.

The technical and the abstract may appear in scientific reports and the limited and specific may be followed by the specialist, but every journal which seeks for circulation must give full scope to the general, and at times must admit the speculative and the imaginary.

This is a strong point, and one that will win in the end. Science in this country is in that condition in which it must welcome the co operation of the amateurs. While holding itself to the highest standard and requiring exact work and often running into the technical and the special, yet its attitude has been and must be one which encourages beginners and upholds the veterans.

We make a second point as to the duty of discriminating between the contributors and correspondents.

We would like to have it understood that the editor of the AMERICAN ANTI-

*Dr. F. S. Krauss Sitte und Brauch der Sudslaven. Nach heimischen gedruckten und ungedruckten Quellen. Wien, 1885, A. Holder, publisher 26 und 681 pages. Octavo.

QUARIAN *does not hold himself responsible for the positions taken by contributors and correspondents.*

One object of the journal has been to give a hearing to the different classes. But as to the matter of discriminating it is impossible. We do not draw a line between the amateurs and the proficients, but prefer to gain information from all, and so represent the actual state of the science at the present time. We would say also that this arrangement has met the approval of many. Our journal has a circulation in all parts of the world, and mainly among literary societies, and the learned classes; but it is a singular fact that the commendations are as frequently bestowed upon the letters which come from the amateurs as upon the articles which come from the specialists. The specialists, to be sure, give character to the journal, but the workers in the field, of whatever class, are always sure to gain a hearing because of their explorations and discoveries.

In reference to relics some might think that the editor should discriminate and decide before-hand as to what are frauds and what are not. This, however, we have not undertaken to do. We consider ourselves fortunate in not having been deceived, and yet we have not undertaken to sit in judgment upon all relics. Occasionally articles appear in which relics which are manifestly frauds are described. But the answers are sure to come, and when they come they are published.

There is a third point which we make here. We understand that the amateur journals have been started mainly in the interest of collectors of relics. If this is the case we are sorry that they have not been sustained. For ourselves we have advocated and still favor a complete revolution in the matter of collecting relics. We do not consider that a relic has any value unless the data concerning the find can be given. Collectors have many of them, imagined that they could get along without *any journal* and without *books*, and yet gather a valuable cabinet. They are, however, mistaken in this policy. Museums do sometimes go into the work of collecting specimens of primitive art without regard to the locality of the relics and without considering other history, but the best museums are coming to require that the history of the discovery of each relic should be carefully recorded. This is going to affect the value of the relics. The dealers cannot help it, and relic hunters will find it out, some of them to their sorrow. It has been said that the ANTIQUARIAN is expensive—too expensive for most collectors. But perhaps collectors will find out that it is expensive to be without it. We are sorry that the journals which were taken because they were cheap have not been sustained. We are sorry for the collectors more than for the editors. A "little learning is a dangerous thing." It may prove so in their case. We urge this upon the relic hunters, that if they would have their cabinets regarded as valuable they must collect them with some degree of scientific system, and not in the hap-hazard manner which is common with the dealers in curiosities. *Reading* and collecting must go together or the commercial value of cabinets will fall. We predict this, though we do not pretend to say how soon the prophecy will be fulfilled. We think that the scientific men understand one another in this point, and we are free to say that our sympathies are with the scientists more than with the dealers. There are collectors—and their number is increasing—who know enough to collect a cabinet scientifically, but we fear that the majority are poorly informed. We believe that the commercial value of relics will be transferred from the ill-informed to the well-informed, though the change may be gradual.

We have been ready to recognize the good work collectors have done in this country, in the way of preserving the archæological tokens, but we could wish that it could be done more fully in the interest of archæological science, and less from the motives of mere curiosity seeking and the love of possession, and we are always glad to hear from collectors and to give descriptions of the relics in their cabinets, but we expect them in return to do some thing in the way of sustaining the ANTIQUARIAN, which is now again, we believe, the only journal devoted to the science of archæology, on the continent.

THE MUSEUM.—We would announce to our patrons that *The Museum*, edited by Mr. E. A. Barber, at Philadelphia, has been merged into THE ANTIQUARIAN and will no longer be published separately. A department will be established in

THE ANTIQUARIAN entitled "The Museum," or Notes on Archæological Relics, and Mr. Barbor will have charge of it. Mr. Barber has transferred the articles, correspondence and cuts which had accumulated during the four months of his editorial work to us, and we shall publish them as soon as possible. This change brings to our magazine many new and honorable contributors and a very valuable associate.

THE YOUNG MINERALOGIST AND ANTIQUARIAN.—We have been informed by T. H. Wise that the editor of the above named journal has suspended its publication. No further announcement needs to be made in reference to it.

*WYOMING HISTORICAL AND GEOLOGICAL SOCIETY.—One of the best illustrations of what a few intelligent and energetic citizens may do toward making a local society as vigorous and useful as any large or general association, is offered by the Wyoming Historical and Geological Society. Such societies are numerous in England, and in various parts of the continent of Europe, but in this country are very rare, and if they exist at all are very likely to be short-lived and soon become things of the past. The local history of the Wyoming valley, to be sure, is exceedingly interesting, but this society fortunately is not confined to local history, but enters the prehistoric field as well.

It appears that eight numbers of the "Proceedings" have already been published, one of which is especially devoted to description of the Relics now in the cabinet of the society with photographic plates of various pottery vessels. The second volume has just been received.

The present Number, Vol. II, No. 1 contains the constitution of the society, list of members, proceedings and four or five papers on special topics as follows: 1st, a report of meterological observations. 2d, a report of the committee on exploration of the archæological remains at Athens, Pa. 3d, The paper by Sheldon Reynolds, Esq., on the Fresh Water Shell Heaps on the Wilkesbarre and Hanover Rivers. 4th, A Bibliography on the History of the Wyoming Valley by Rev. Horace Hayden. 5th, An obituary notice of Colonel Wadhams, a former president of the society. From the report of committee on the Remains at Athens, we glean the following interesting facts: This was a locality which bears the historical name of "Tiogo," and which according to tradition was formerly a place of great importance among the Delawares and Shawnees. It was a point where several trails from the Iroquois territory converged, and descended the Susquehanna, forming the great southern trail or highway of travel and migration into the South. It was a place where treaties were formed, one attended by Tedguscung in 1756. It was the place where Gen'l Sullivan built a fort in 1779.

At this point the committee has discovered and opened several graves and exhumed therefrom a variety of relics, none of which however, show any signs of modern workmanship. The relics discovered are mainly pottery vessels, stone relics, a copper bracelet, two turtle shells which had been used as rattles, or possibly may have been significant as the totems of the tribe or clan formerly living there. The pottery is such as is peculiar to the Atlantic coast yet it is described as bearing traces of two or three epochs, or at least of two or three stages of pottery manufactory, some of the specimens being perfectly plain and others being covered with various markings and masks, as if a very considerable degree of art had been reached. The number seven seems to have been regarded as sacred, at least this number prevails in the markings on the pottery.

More interesting than these pottery finds in the graves, is that of the relics in the "Shell Heaps." It appears that the caving away of the banks of the river has brought to light the sites of various old villages, of which shells and relics are the only tokens and these hidden three or four feet beneath the soil. There are about five such villages. The relics disclosed are however, such as are peculiar to Pennsylvania, consisting mostly of lap stones, hammer stones, rubbing stones, discoidal stones, pestles, net sinkers, as well as fleshers, flint knives, slate gorgets, arrow points, celts, and flint clippings. Nowhere do the first named relics abound in such comparative abundance as in Pennsylvania and the find proves the more interesting as it helps to fix more definitely the characteristics of this archæological field.

*Proceedings and Collections of the Wyoming Historical and Geological Society. Vol. II, Part I; Wilkesbarre, Pa., 1885.

The paper by Rev. Horace Hayden is a valuable contribution to literature, and is peculiarly suggestive as it contains many titles which will be recognized as familiar even to the general reader.

SYMBOLISM ON COINS IN THE EAST.*—The last report of this Society contains an interesting article on Symbols found on the gold coins of the Guptas, by W. Theobold. The symbols referred to are the fillets, the cornucopia and the footstool.

The first named according to the author bear many points of resemblance to the wreath in Greek art which are found either in the hands of Nike or surrounding the king's head or suspended to the staff of the priest and sometimes seen in the Indo-Scythic coins, but they are pronounced to be not wreaths but rather a noose having a significance entirely different from the wreath. The noose according to the East Indian symbolism, especially in the hand of Siva had a significance which would delight the fancy of Inman and every other student of the phallic. In these coins the symbol had a modified significance and represented a female anthem homologous with the "sistrum" of Isis, typical of the fruitfulness whereof Iakshmi was the fountain-head.

The cornucopia is also a symbol, which though borrowed from the Romans, has on the Indo-Scythian coins, come to have an entirely different significance.

"A divergence of ideas" is also recognized by the author between the Indo-Scythian and the Guptka coins, as in the former the cornucopia is a receptacle stored with the kindly fruits of the earth but the Guptka coins represent it as closed with the upper or broad end convex in form. This the author connects with the symbol of the Naga, the curved body of a hooded snake being recognized in its form, etc.

The footstool is not so easily explained but this is described as a circle at the foot of the figure of a Goddess and represents really a coil of the same symbolic snake Naga, whose head is seen lying in the lap of the Goddess in the form of the cornucopia itself. Such is the interpretation of the symbolism in Gupta. The interpretation is certainly ingenious and shows much research and learning, in the line of symbolism.

THE AMERICAN NATURALIST is one of the oldest and at the same time most courteous of our exchanges. Prof. O. T. Mason, the editor in charge of the Department of Anthropology, is a gentleman who always has a good word for his friends. This journal has received many kindly notices from his pen, and we desire here to express our thanks.

THE AMERICAN ASSOCIATION met at Ann Arbor Aug. 27. Section (H) was organized by electing J. Owen Dorsey Vice President, and Mrs. E. A. Smith Secretary. The following papers were read: The Native Tribes of Alaska, W. H. Dall; On certain singular stone implements from Vermont, G. H. Perkins; Explorations in the great Cahokia mounds, Wm. McAdams; Proper methods of exploring mounds, F. W. Putnam; Who made belt wampum? with exhibits, Erminnie A. Smith; Primary classifiers in Dheghia and cognate languages, J. Owen Dorsey; Exhibition of copper implements, W. C. Wyman; The Degeneracy of Races, Wm. Zimmerman; The Animal Mounds of Wisconsin, W. DeHass; Archæological Remarks, W. DeHass; Sacred war tent and some customs of the Omahas, Alice C. Fletcher; Laws and terms of relationship of the Omahas, Francis La Flesche; Exploration of recent Indian mounds in Dakota, William McAdams; Burial customs of our aborigines, Henry Gillman; Ancient pictographs in Illinois and Missouri, William McAdams; Exhibit of specimens with notes, W. L. Coffinberry; Customs, language and legends of the Senecas, J. W. Sanborn. The attendance was not as large as usual, but the character of the papers was quite equal to the average. Mr. E. S. Morse was elected president for the next year. Mr. Horatio Hale vice president for the section of Anthropology, and Mr. A. W. Butler secretary.

THE SUTRO LIBRARY.—California seems to be favored with wealthy gentlemen of literary tastes. The Bancroft library is well known. Recently a Mr. Sutro, who has accumulated a fortune, has been buying books in Europe and

*Journal of Asiatic Society of Bengal, Vol. LIV, Part I, Nos. 1 and 2, 1885, Edited by the Philological Secretary, Calcutta, 1885.

is now preparing to build and donate a large library to the city of San Francisco. Rare and curious editions, ancient manuscripts, old proclamations, illuminated missals, old journals, odd bindings, etc., constitute the collection.—*Mining and Scientific Press.*

DR. WARD'S EXPLORATION.—The result of Dr. Ward's tour to Babylon is well known at last. We shall speak of it in our next number.

PREHISTORIC WORKS IN OHIO.—A gentleman now eighty years of age, who in early life was employed in engineering operations on the old canal, has written a letter to the *Christian Mirror*, in which he describes the works at Newark, Circleville, etc., as they were thirty or forty years ago. He states that the great mound at Circleville was 60 feet high, 30 of which was a natural elevation, the rest 30 artificial. He speaks also of a deep intrenchment which led from the circle at Newark about 20 rods to a large spring. The later Indians knew nothing of these works.

COLLECTORS OF RELICS.—Mr. J. W. Laidlow, of Toronto, Canada, has a large collection of relics illustrative of the archaeology of Canada. They are supposed to belong to the Canada Indians. Mr. Hodges, of Clayton, Iowa, has also a collection of mound builders' relics. He has found emblematic mounds near Clayton. Mr. T. H. Lewis is gathering a valuable cabinet. He also has discovered emblematic mounds in Southern Minnesota.

A LETTER received in 1882 from Dr. Harvey Reed, Mansfield, says: My uncle, Thomas Reed, of Dalton, has a very large and rare collection of prehistoric relics. He has been collecting for over 40 years. Dr. J. W. Craig, of Mansfield, has a very large and fine mortar. It is of "nigger lead" and weighs nearly a ton. It is about two feet high and two feet wide, with a cavity nearly a foot wide at the top.

THE AGE OF TREES.—The *American Naturalist* for September has an interesting article on the rings in trees by Mr. John T. Campbell, who is a land surveyor of 20 years experience. The following are the conclusions at which he arrives: First, the size of the tree is no index to its age. Second, in the Northern climates the rings indicate the years of growth. Third, there are few oak trees standing that were in existence at the time of Columbus.

HUMAN REMAINS IN MEXICO.—The same journal for August furnishes a description of human remains in Calcareous Tufa, in Mexico. No animal remains were found with them. The lithological characteristics indicate that they belonged to the quaternary. Ancient ceramics have also been found under basaltic lava, and a carved bone in association with quaternary animals, but nothing definite concerning them is stated.

BOOK REVIEWS.

Custom and Myth., by ANDREW LANG. New York; Harper & Brothers; pp. 304.

The writings of Professor Mueller, Adalbert Kuhn, and other eminent students of language, have given quite undue prominence to the philological theory of myths. According to these scholars the proper names in myths are the true key to their solution. Primitive men used figurative language to convey their impressions of striking objects or processes in nature. A later generation understood this in a literal sense and exerted its ingenuity to supply an explanation. Then, the dawn became a lovely maiden and the sun a steed or a god driving his chariot across the sky. All this resulted from a "disease of language." One may cheerfully concede to linguistic studies their due meed of praise for the light they have shed upon ancient legends, but we are convinced that the testimony of language has been overestimated. There is another method of explanation which may be called the anthropological one, and which it is the design of this book to set forth and illustrate. Observation among both savage tribes and illiterate populations in civilized lands reveals

to us not only that the familiar myths of classic literature are substantialy repeated in remote parts of the world, but that in each case the same character appears under a different name. In such instances, then, the etymology of proper names can hardly come to our aid. Our author holds that myths embody the fancies and customs of men in a state of savagery, and that those occurring in civilized communities are a survival from the period when they had not yet emerged from that primitive state. This is the only reasonable explanation of the disgusting details of Greek myths, so repugnant to the late refinement of that people. The author supports his theory with much ingenuity in twelve essays, and though his readers may not go to the same length, as he is in opposition to the views of the linguistic school, they will certainly be convinced of the prime importance of researches among the lower tribes of mankind in explanation of much that seems quite out of place in the midst of high civilization. The book is written in a pleasing, though controversial, style and deserves a careful reading. J. A.

An Account of the Progress in Anthropology in the year 1884. By PROF. OTIS T. MASON. From the Smithsonian report for 1884.

Prof. Mason, with his usual candor and discretion, has furnished a valuable summary of the year's work.

A Companion to the Revised Old Testament. By TALBOT W. CHAMBERS, D. D. New York: Funk & Wagnalls.

The Old Testament has now been revised in seven different languages, namely French, German, Danish, Swede, Norwegian, Dutch and English. It is probable that no book has undergone more revision and remained so stable. The discoveries which have been made have thrown new light upon the sense, but have refuted none of the positions or doctrines of the Bible. A few manuscripts have been discovered which should affect the text. The versions which were unknown in the times of King James are the following: The Alexandrian, the Sinaitic discovered by Tischendorf, and some few fragments of a Greek version, the Samarian Pentateuch, the Persian, the Gothic and the Ethiopic. The Hebrew language is better known, as the grammars prepared by Gesenius, Ewald and the dictionary of Furst have proved great helps. The geography of Palestine has been advancing. The whole land has been triangulated and the maps are now very accurate. These various points are brought out by Dr. Chambers very clearly, making the little volume a companion indeed, and one well worth consulting.

Ancient Pottery of the Mississppi Valley. By WM. H. HOLMES. From the proceedings of the Davenport Academy of Sciences.

We congratulate the Davenport Academy on its success, and thank Mr. Holmes for this study of the collection. The pamphlet treats only of ancient pottery, but it is splendidly illustrated and shows how large an assortment the academy has been able to secure. We believe there will be no dispute about the genuineness of these finds. The figures contained in the pottery are, however, grotesque enough to confuse anyone. We would like to have some naturalist study the specimens and tell us what animals are represented. Mr. Holmes modestly suggests different animals, but believes the reader should decide for himself. This is the way to put it and we commend the pamphlet for its suggestiveness. There is one point which we make. The winged rattle snake is here represented. The question which we ask is, if these figures are pre-Columbian why are not the winged human figures which are seen in certain copper relics and shell ornaments also pre-Columbian. Mr. Holmes suggests that the symbolic egg in the serpent in Adams county is the heart of the serpent. This seems reasonable. We call attention to the pipes on the pottery vessel, figure 10, and ask whether there was not an incipient symbolism in nearly all the ornamentation of this ancient pottery. Mr. Holmes has not ventured upon this ground, but we suggest an advance on that line.

Fourth Biennial Report of the Board of Directors of the Kansas State Historical Society. Presented to the society at its ninth annual meeting, held at Topeka, Jan. 20, 1885.

This pamphlet contains an account of the pictures and relics in the cabinet and the books in the library, and shows that the society is making commend-

able progress. We have seen the manuscript collections and the old maps and notes of surveys, and consider them very valuable, especially those descriptive on the location of the Indian tribes.

Greek Folk-Songs from the Turkish Provinces of Greece. Literal and metrical translations by LUCY M. J. GARNETT. Classified, revised and edited with an historical introduction on the survival of paganism by JOHN S. STUART GLENNIE, M. A., of the Middle Temple, barrister-at-law.

This book contains in its general table of contents, "historical introduction on the survival of paganism," "metrical translations of mythological folk-songs," "affectional folk-songs and historical folk-songs." Also "bibliography of Greek folk-lore." The essay on the survival of paganism is the most valuable part of this work, at least it is the most suggestive. It is a question whether the positions taken by the author are all of them tenable, yet the feeling of oneness with nature and the personalizing of its phenomena seems to have prevailed in Greece to a very late date. The supplanting of paganism by christianity has not altogether destroyed this tendency in nature worship. The Greek folk-songs which are here furnished in literal translations, need, however, an interpreter, to be closely studied if one is to recognize the point referred to in the introduction as "translations of Greek lyrics." They furnish material for comparative study, though we doubt if the odes can be ranked with the charming productions of McPherson's Ossian. It is, however, a book of somewhat the same character and will be valued both for its literary merits and for its antiquarian flavor.

The American Journal of Philology. Vol. 6, No. 2. Edited by BASIL L. GILDERSLEEVE, professor of Greek in the John Hopkins University, contains: Contributions to a History of the French language of Canada, 1, by A. M. Elliott. Arm-pitting among the Greeks, by George Lyman Kittredge. Pharsalia, Pharsalus, Palaepharsalus, by B. Perrin. Greek and Latin inscriptions from Palestine, by Frederic D. Allen, and reviews and book notices.

F. Techmer (Prof. in Leipzig) Internationale Zeitchroft fur allegemeine Sprachwossenschaft. Leipzig, 1884: Barth, publisher; gr. 80.

Vol. I, in two numbers, contains in 518 pages (with XVI pp. preface) articles on linguistics from well-known European and American scientists, a full index, and many illustrations, among these a life-like picture of William von Humboldt.

An Inglorious Columbus, or Evidence that Hwui Shan and a Party of Buddhist Monks from Afghanistan Discovered America in the Fifth Century, A.D. By EDWARD P. VINING; New York: D. Appleton & Co., 1885.

This book seems to be suffering from the reviewers. It has, however, merits which will be appreciated by antiquarians. It matters not whether the theory is true or not, we are glad to know that the subject of the pre-Columbian origin of Mexican civilization has been taken up. The voyage of Hwui Shan may have been to Japan or to Mexico, the book does not prove which, for Fusang has not been located, notwithstanding the 788 pages devoted to it, but it is interesting to know how much can be said on a subject of this kind without reaching a certainty. The book is really a cyclopedia of essays and opinions on the location of Fusang and the Buddhistic origin of American civilization. Probably if the author had entered into the study of archæology before he had written the book, he would with much less labor have brought out an original production. Still the subject is valuable.

Bulletino Delld Commissione Archeologica Comunale di Roma Anno XII. Serie Seconda. Roma; 1885.

This journal is always welcome. It contains the account of many valuable discoveries. The plates are photographs and represent some very valuable fragments of art, including inscriptions, basso relievos, and the torsos of many statues. The last number contains a description of the finds at La Villa Castrumeniese Di Q. Voconio Pollione.

Discoveries of America to the Year 1825, by ARTHUR J. WEISE, JR. G. P. Putnam & Sons, New York, 1884.

This is an interesting book on an interesting subject. The title indicates its

scope. The author begins with the story of Atlantis, takes up the case of the Northmen, makes reference to Prince Madoc, speaks of the Zeno Brothers and their voyage to Greenland, describes the journey of Marco Polo and his marvelous discoveries in Cathay and the exploits of King John of Portugal, and finally comes to the discoveries of Columbus. These occupy about one-third of the book. He devotes a Chapter to Americus Vespuci, and another to Sebastin Cabot and the English navigators. He then speaks of Vasco Da Gama, Juan Ponce De Leon, Cortoreal, Balboa, Cordova, Grijalva, Cortez and Magalhaens, Alvarez, and Verrazano, Portuguese navigators. Cartier and with him Hudson and other English and Dutch navigators are described. He concludes with an account of Verazano and his exploits. The sketches are all made up from quotations from old authors, which are so woven in, that they add greatly to the interest. There are also several old maps in the volume. These bring before the eye the state of geographical knowledge at the time. These maps add to the interest of the volume. The dates of these maps vary from 1508 A. D. to 1569, and the maps themselves are as various as the dates. The following are the most noticeable, first the map of the world by Johann Ruysch, from Ptolemy's Geography, Rome 1508. This map represents the islands discovered by Columbus, but contains the continent of Asia, just west of these. The same is true of the map by Pietro Martire (Seville, 1511), or the map Galledtabvla Terre Vove by Herrera (Strasburg, 1513). A map made by Visconte De Maiollo (Genoa, 1527), contains the coast of America with Florida and Greenland, and South America laid down. The coast, however, has no river and reaches only to Labrador, and the map is not much better than one made by Juan De La Cosa in 1500. This last displays a coast at the north which runs east from Greenland to England, but between Greenland and Cuba is a vacant space with no coast line. The first map that indicates a river, like the St. Lawrence, is one known as "the Cabot map of 1544." But one by Andre Thevet, printed in Paris 1575, contains this river, Hudson, Florida and the entire coast, quite correctly displayed. Mercator's map of 1566, made at Duisburg, is, however, the best, as this displays the mountains and the rivers as well as their coast.

The book is splendidly printed and is very elegant in appearance as well as in its contents.

BOOKS RECEIVED.

On the Comparative Phonology of four Siouan Languages, by J. Owen Dorsey. Washington, 1885.

The Legends of the Panjab, by Capt. R. C. Temple. No. XIV, September, 1874. Vol. II. London. Trubuer & Co.

Archæological Institute of America Sixth Annual Report. 1884 and 1885. Boston, May 9, 1885.

The Overland Monthly. Vol. V, No. 6. June, 1885.

THE

American Antiquarian.

VOL. VII. NOVEMBER, 1885. No. 6.

THE GROWTH OF SYMBOLISM.

SYMBOLISM AND THE TOTEM SYSTEM.

The growth of Symbolism in America is an interesting subject. This growth may be seen in other countries, especially in the ancient lands of the East, but in this country it begins at an earlier stage and ends much later in history. The great difficulty in studying Symbolism in the East is that so much obscurity has come upon it from the accumulation of historic times. There is no such obscurity here, but the great obstacle is that so few understand the subject or feel interest enough to give it their attention. We propose to give a few pages to a review of the rise and progress of symbolism on this continent. In the former paper we have proven that symbolism not only existed but that it existed in great variety and was distributed through many departments. We have shown that it was to be found in at least six different lines of archæology, namely, in various pictographs, in animal effigies; in sculptured or carved relics; in rock inscriptions; in architectural decorations, and in the various codices or ancient manuscripts. These are the different channels through which symbols have come down to us and in which we are to study them to see if we can trace them to their source. The picture writing may be said to contain symbols in their earliest stage of development and doubtless if we should study the codices we should find that they contained symbolism in its latest stage. There were phonetic characters in the codices but they were based on or drawn from native symbols. The codices are not native productions or at least they are not prehistorically native, but they are supposed to contain the reproductions of symbols which were, and so may be regarded as representing the highest substitute of the symbolic art. The sculptured columns are better specimens, for while the codices contain traces of an intruded Eu-

ropean cultus, they bear evidence of being native American hieroglyphics and may be so classified.

The history of writing in America is suggested by the symbols and in turn itself throws light on them. It would seem that writing had here passed through several stages in which it became obscured by the symbolism which accumulated and took its place, but that it finally came out to a simplicity of form in which thought and expression could be easily understood, pictures being the most prominent feature in the earliest and latest of development. The history of symbolism and the history of writing are to be studied together for they are not only synchronous but parallel in their development. In fact they are counterparts and so closely related that one cannot be understood without the other.

That different stages of symbolic growth have appeared on this continent we think will not be doubted. We have already incidentally shown this, but a few words may be added to make it clearer. In a former treatise on the native architecture of this country we have shown that there were different grades of culture in the different localities, the grades commencing on the Atlantic coast and going on to the West and Southwest, arising by steps in various geographical districts until it reached the highest point among the civilized races of Central America. We now find that the same line of progress may be traced in symbolism, the lowest stages being found in the rude picture writing of the northern and eastern hunter races, but the highest stage appearing in the sculptured monuments of the civilized races. Parallel lines of development might also be traced in the ornamental and mechanical arts as well as in personal decoration and the domestic and social equipments. Variety, elaborateness, and perfection in all these are seen, but seen more as we follow the geographical lines from east to west and from north to south. We might say that there was symbolism in these, and that even the tools and weapons and military badges which are recognized in the relics were themselves symbolic. We have at least a decided conviction that the pottery ornamentation and the shell drawings, contained symbols as often as did the stone carving or the rock inscriptions. The painting and tattooing of the human face and form, were also symbolic, as was the manner of braiding, cutting and decorating the hair. The native costumes were also full of a latent symbolism. The very cut of the moccasins which they wore and the shape of the tassels and fringes which decorated their garments, as well as the folds of the head-dress and the form of the bead ornamentation and feather crests which hung at their back and neck were all symbolic. It was very sub- but was nevertheless expressive. We shall not understand dress and appearance of native Americans until we have d this characteristic of aboriginal costumes. The dances and

feasts will also be meaningless, for even with the lowest savages there was a subtle meaning to all the movements in the dance and the choice of the time and season for their feasts was connected with their religious sentiments.

Symbolism in America was indeed so closely related to the systems of religion which prevailed that it cannot be understood except as we study these systems, and yet the superstitions and customs of the natives will not be understood unless we study the symbols.

I. But the growth and development of symbolism is the subject to which we are calling attention. We shall first treat of it under the head of picture writing. It may be doubted whether the primitive writing of the savages contained any symbols and yet if the tattooing, the painting, the hair weaving and decorating, the fringing and embroidering, and all the process of decorating the person were so full of a subtle symbolism we should be inclined to say that even the pictures on bark and the ornaments in pottery were also more or less symbolic. We include then picture writing even of the lowest class, in the general subject of which we are treating and from this would go on to study the different grades of the symbolic art as they are displayed in the more advanced races. The growth seems to have been in this department from the lowest to the highest, though some would say that there had been a retrograde process. On this point we shall not undertake to decide for there are traditions and even customs which seem to have been derived from other continents, and these have certainly been subject to a degenerating influence. The modifications which traditions have been subject to, as they passed into the hands of the later tribes, would almost lead us to suppose that these traditions had been accommodated, the more elaborate and perfect having been borrowed from other lands but here shorn of their power and made to conform to the low tastes and ideas of the people who adopted them. There are symbols on this continent which were brought from Europe and from Asia, but as a general thing these are of a religious character, and such as have been excluded from common use. These have not been transformed but are continued in their original state, though a modified significance has been given to them. We refer now to the symbol of the serpent and the cross and the various forms of the phallic symbol. It is singular that these should appear on this continent and that they should have retained their original form and sense. Some maintain that they were of native American origin and could not have been borrowed, but they appear as islands in the midst of the sea; they are surrounded by native customs and symbols but seem to be very different, as if they belonged to another element or system. They remind us of certain traditions; the tradition of the flood and of the creation, and are analagous to certain customs such

...ism. They are so excep-
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... subject we shall not attempt to show the
... merely refer to the different grades of sym-
... inhabited on the continent. These grades are
... different geographical districts and are appar-
... one part of the country to another. The
... of symbolism is on this account important.
... remembered that the line of growth is to be always
... northeast to the southwest; and that in this direc-
... successive grades of prehistoric culture are to be dis-
... We seem to be rising upon steps; as we pass the dif-
... and belts of latitude and recognize a correlation in
... tments, art and architecture, social customs, tribal
... ons, personal decorations, religious notions, traditions,
... and everything which concerns native society. The
... geography in connection with symbolism is especially
... gestive. Symbols and traditions must, however, go together
... studies, for in both of these may we trace the lines of mi-
... on which were followed by the prehistoric races, as well as
... order of their development. This is one way in which we
... solve the problems which are presented to us by native so-
... ty. It is remarkable that symbols are relied upon very exten-
... vely by Archæologists in the East and we may suppose that
they will prove equally suggestive in the Western Hemisphere.
To illustrate—the cuneiform writing has been studied with a view
of tracing the line of migration which was followed by the ancient
inhabitants of Chaldea. It is supposed that this writing
was derived from primitive pictures, but in those pictures there
have been discovered certain symbols which point to a mountain
home and the conclusion drawn from this, is that the primitive
inhabitants of Chaldea had their origin in the mountains to the
northeast. If, similarly to this, the hieroglyphics of Mexico and
Yucatan can be traced to a primitive picture writing, and the
symbols in that picture writing can be traced back to some geo-
graphical spot, we may in this way discern not only the growth
of symbolism, but the line of migration which the native races
have followed. We shall not, however, at present under-
take to show the connection between the geographical districts

or even to trace the symbols from one district to another, but shall refer to the different grades of symbolism which are found in the different districts.

What these grades are, may not at first be apparent, but a few words would indicate the successive steps and the districts where they occur. These steps and the districts are as follows: 1st, Pictographs, especially those which are found among the rude tribes of the extreme north. 2d, Totemism, or that system of animal emblems which abounded among the hunter tribes of the north temperate zone. 3d, Ancestor worship, or that system which existed among the tribes on the northwest coast. 4th, Sun worship or that system which is first see among the tribes of the Gulf coast. 5th, Nature worship, or that system which prevailed among the Puebloes of the interior. 6th, The elaborate and extensive system of symbolism which was found in the elemental worship of Mexico and Yucatan; and 7th, The still more elaborate system of symbolism found among the ancient inhabitants of Central America. Thus we have seven different grades of symbolism, each one peculiar to certain geographical districts and each having a chracteristic of its own. There are many different symbols in these districts, and many different sources or motives from which they sprung or channels through which they flowed.

These channels are as follows: 1. The imitative skill of the natives. 2. The tribal signs and emblems, the official badges and ensigns, and along with these, personal ornamentations. 3. The religious customs, especially those which clustered around temples and sacred places. 4. The idols and images of the different divinities. 5. The sculpture, especially that which was bestowed upon objects which were regarded as sacred. 6. The various architectural styles. 7. The system of writing which prevailed especially among the civilized nations.

II. We have already considered the first grade, pictographs. We now take up the second grade, namely, the totem system. This will be our special subject.

We have said that the first grade of symbolism may be seen in the totem system. There are, to be sure, pictographs which exhibit a high grade of development; and we may suppose that picture writing itself had a line of growth which was independent. There are, however, pictographs upon the rocks of Colorado and Arizona which combine symbols with pictures, the one shaded into the other; conveying the idea that the transition from the picture to the totem was easy for the native races.

The simplest form of picture writing, namely that found among the Eskimos is destitute of totems. It is a question, however, whether these did not contain the germs from which totems and tribal signs were developed.

The earliest specimens of drawing or inscribing are those which contain pictures of animals. These pictures could not

have been drawn for the purpose of designating tribal names but were the delineations of remarkable animals which had been seen and which had impressed the minds of the rude natives. They are pictures of animals in peculiar attitudes; there was probably no religious sentiment expressed by them and certainly no tribal record or history represented by them. One picture contains the figures of an elephant or a mastodon, or rather two or three mastodons together. This drawing was on a piece of ivory which was taken from a cave at the Madelaine, by M. Lartet, in 1864. It is a very artistic production. It represents the large head, concave forehead, curved tusks, small eye, crooked trunk, curled up tail and long mane, just as it has been preserved until our day on the shores of the Lena. Another is the picture of a combat of reindeer. Four deer are represented, two of them standing and two of them prostrate, and in the midst of them is a figure which resembles a man. The drawing is interesting as

Fig. 1.—INSCRIBED BONE FROM THE CAVE OF MADELAINE.

a work of art, as it represents the animals in very life-like attitudes, See Figure 1. The same impression is formed from the study of the inscribed pictures which are found among the Eskimos. There are here animal figures, some of them representing whole droves of reindeer and the camps of the natives. There are, however, no symbols on these inscribed bones. This is as we should expect it to be. The Eskimos were in that condition where the lowest kind of religion prevailed, namely, Animism. We may suppose also that the same form of religion prevailed among the cave dwellers. Animism did not admit of symbols. Every thing had a soul or a spirit, but the spirit was so shadowy that it never assumed any fixed form. A tree or a rock or a stream could be haunted by a spirit but no one could depict the spirit or even portray [illegible] which it assumed.

But the inquiry is, was there a condition of society in which totemism did not appear? Is there, or was there, a stage where religion was so rude that even animal worship did not exist? Is there a condition in which animism was the only religion and no symbolism can be found? We consider that totemism furnishes the earliest class of symbols and that we need to study picture writing with this thought in mind. Can we find picture writing where in-animal totems are to be seen but where every thing is merely imitative.

III. Totemism as seen in the tribal emblems will next engage our attention. It is well known that there was formerly in native American society an extensive system of heraldry, and that this system was organic in its character. This heraldry, to be sure, has been poorly understood, yet it was widespread and very powerful. Totemism was, however, nothing more nor less than a kind of heraldry. It was a symbolism which drew its life from the tribal organism, and which derived its semblance from the tribal name. It was a superstition among all the primitive races that each clan was under the care of some particular animal divinity, and that the image of that animal would serve as a protection to all the members of the clan. A common opinion prevailed that the clan was actually derived from the animal, as the great primal ancestor of all. One effect of this notion was to make the living animals that bore that name, with which the members of the clan came in contact, taboo or sacred to them, so that there could be no taking of their life and no harm done to them. The ancestor and divinity was indeed an imaginary being, but was nevertheless very powerful and his spirit was ever present. The name of this animal divinity was borne by the mother and transmitted by her to the children. The father could not transmit his clan name, but must live in the clan of his wife and she tran fer the badge and name. This system of tribal organization and tribal descent was one source of symbolism and the badges or emblems which the members of every clan bore, were necessarily symbolic in their nature. The forms which the totems assumed were those of animals, and so animal figures became the primary symbols. There may indeed have been symbols which were more primitive and inchoative, but if there were, they were accidental and did not possess the element of organic growth. Some have supposed that these animal semblances were taken from the forms of the wild animals which were common and that the love of imitation led to the use of the figures, as tribal emblems or coats of arms, but the more common opinion is that superstition magnified the animal into a divinity and that the names and totems or tribal emblems were the product of this superstition.

One evidence of this is that there are among the wild tribes so many pictographs in which animal figures are transformed in-

Plate I.—A'OTARHO, THE CULTURED HERO OF THE IROQUOIS.

to hideous monsters. These pictographs are more common in the very regions where totemism prevailed. It would seem as if the same superstition which fixed upon animals as the tribal divinities, also created many imaginary monsters which combined all sorts of qualities, the horns of buffalo, the claws of tigers, the tails of catamounts and the faces of men. These, however, could hardly be called totemic figures. They show a low grade of thought and reveal the strange superstition which prevailed. They occupy a middle ground between pictures and totems. We do not know to what race they are to be ascribed, probably to the savage races rather than to any advanced people. Such figures have been found on the rocks on the Mississippi river, They were really the embodiment of the myths which were common and so should be called picture writing, for they were the pictures of imaginary beings which figured in their myths. In the same class we should also place the picture songs which have sometimes been found, and the most of the picture naratives. These contain occasionally figures which are symbolic but they are mainly pictographs. The Iroquois had many writings of this kind. They represented Atotarho as a man with his head and body covered with serpents and so they told the story of his life and character. They represented the great divinity, as a body with an immense head and told the story of his exploits, by this picture. See plate I. Pictorial records of a chief's success in hunting and in war, described by Schoolcraft, is another specimen of this kind.

As to the history of totemism, especially that kind which abounds in animal names and animal figures, a very little can be said. We know that it exists, not only in America, but in Africa and Asia, and especially prevalent among the low, rude tribes. It seems, however, in America to have been confined to a certain stage of society, especially that stage which exists among the hunter races. It may have existed among the fishermen, but if it did it failed to reach a very high degree of power. It may also have existed among the agricultural races, but among them was overshadowed by other systems.

Geographically considered it was not confined to any one locality, but was spread all over the continent and yet the highest development was in that district where the hunting races are known to prevail.

The continent of America in prehistoric times was divided into several belts of latitude, the climate, the soil, the products, the character of the country, the employment of the people, their mode of life, their stage of advancement, the condition of their art, their tribal organisms and their religious systems all being correlated.

*The Indian tribes of the United States, by Francis S. Drake, plate 26, 37.
†See Dorman's Origin of Primitive Superstitions, page 279.

On the eastern half of the continent there were three such belts, namely: One which was occupied by the Eskimos and Hyperboreans, who were mainly fishermen; second that which was occupied by the wild tribes of Indians, Athabascans, Algonquins, Iroquois, and other tribes who were hunters; third, that which was occupied by the sedentary tribes, such as the Creeks, Choctas, and other Mobilian tribes, who were agriculturalists. These three belts correspond remarkably with the zones, the Arctic, the Temperate and the semi-Tropical zone.

Totemism abounded more among the wandering tribes of the central belt than among any other class.

Picture writing was common among the Eskimos of the northern district, and sun worship is known to have existed among the agricultural races of the southern coast. We may say then that the home of totemism was in the central district where the hunter tribes abounded and where wild animals were very numerous. The correspondence between the totems of this district and the animals which abounded there are most remarkable. This is the great forest region of the continent. It may, to be sure, be divided in two parallel belts or districts, one of which, that at the north is emphatically a forest region, and the other, that at the south, may be called prairie country. Yet if we consider the district as a whole, we should call it the region of forests, it having the Hudson Bay on the north of it and the Appalachian mountains on the south. It is divided into two by the chain of the great lakes.

It is traversed in opposite directions by the great rivers, such as the Mississippi, the Missouri, the Yellowstone, tributaries of the Ohio and the St. Lawrence. This region was peculiarly adapted to hunting and was occupied by the hunting races. We are to study the symbolism of this region with a view of learning about that system of totemism which abounded with animal figures. There was a correlation between the religion of the people inhabiting this region and the mode of life which was common there; and totemism seems to have connected the two.

We use the word totemism in its limited sense and yet it is a question whether totems were ever anything else than animal figures and whether the system can be said to have existed separate and distinct from animal worship. There were, to be sure, other totems, but the question is whether these may not be traced back to the animal worship and whether all totemism did not orginate with animal tribes. We know at least that the hunter tribes had animal totems, but they held them in the greatest reverence and exhibit them in all their customs showing that they recognized them as very important features in their social organizations. The history of these tribes shows that animal totems, figured conspicuously not only in their traditions, but in their customs. The names of their clans were all animal names.

The figures which the clans took as their symbols were also animal figures. The primitive native coat of arms was always marked by an animal. Their writing, such as it was, was characterized by the pictures of animals. Their grave posts exhibited animal figures inscribed or painted upon them. Their tents and blankets and the furniture of their houses exhibited animal figures.

Their bodies were sometimes tattooed with these. The charms which they wore upon their person were frequently pieces of stone or shell or metal, carved in the shape of animals. The idols which they worshipped were either the pictures of animals which were painted upon the rocks, or the blocks of stone which were wrought into the shape of animals.

The places which they recognized as sacred were those which they thought to be haunted by animal divinities. If a rock, or an island, or a tree, or a lake, or a river, bore any resemblance to an animal, they were sure to recognize it and to consider it the abode of their divinity. Their mind was full of animal figures. Their imagination was tinged by them and their superstition magnified, and changed them into divinities, so that the supernatural always embodied itself into some animal shape. The animal mounds which are found in Wisconsin are undoubtedly the tokens which this superstitious people have left upon the surface of the ground, and are but the emblems of that extensive system of animal worship which prevailed among many tribes. There are, however, written treaties and deeds of conveyance and many other papers which bear similar symbols. We may say that the animal totems were the earliest or most primitive symbols which have been found in America. If there were symbols any more primitive, they were not important enough to impress themselves upon the people, and did not come under the law of growth as these did. Native symbolism has always grown out of rude beginnings, but these symbols seem to have been full grown. They are like Minerva, who sprung out from the head of Jupiter, completely armed.

We do not say that totemism was peculiar to this continent, or that it was confined to the hunter races of America; but the boldest and strongest illustrations of it are here found. There are many other localities where totemism seems to have prevailed, but it has been modified; the animal figures have been perpetuated, but without the significance which they formerly had. It is said that the Danes had animal figures painted upon their banners when they invaded England. The Norsemen carried shields with animal semblances inscribed upon them. Their boats were also in the shape of animals; the dragon being the most common form. The Chinese bear to this day a dragon flag, as the emblem of their national power. The Japanese picture the dragon and stork, while the Coreans take the tiger for their national emblem. Siam has the white elephant, and the

island of Benares, the common elephant, for a coat of arms.

Animal figures were common among the symbols of the East. They are found on the early coins and on the ancient monuments. They possibly may have originated in animal worship. The animal-headed divinities of Egypt, Assyria and India may have originated in the same way, but we have no means by which we can trace them back to their source. The study of the animal totems of America may possibly reveal to us how these various symbols arose. It seems very likely that these came from the same source, and are the remnants of a system of religion which once existed at the East, but which has for a long time been supplanted by other systems. The study of the coins of the East reveals tree and serpent worship but it also may reveal animal worship.

The study of the totems of the West reveals no tree worship, and serpent worship is scarcely perceptible, but animal worship is very prominent. Serpent worship seems to have belonged to a later stage of symbolic growth, and we therefore defer the consideration of it to a future time.

The totemism of America must be distinguished from sun worship. Totemism was full cf animal shapes but sun worship was not.

IV. Let us now consider some of the characteristics of the totem systems. Its strongest manifestation was among the hunters. There are, however, certain animal figures which were evidently not totemic. They abound in the picture writing of the natives in all parts of the country. They were formerly seen painted upon the rocks. They are, even at the present time, discovered among the inscribed rocks found along the Mississippi river, in Colorado and Arizona. These must, however, be distinguished from the nondescript figures which are so common in certain parts of the country, especially in Ohio. We refer now to the footprints and handmarks, and other rude figures which are seen cut upon the surface of the rocks, but which have no order or apparent significance to them. These are merely the fanciful figures with which the natives amuse themselves. They are neither symbolic nor pictographic. They have no connected story, do not contain the record of any tribe, and will hardly pay any one for collecting or attempting to decipher them. They are inferior as works of art, and are only valuable as illustrations of the rude skill, and wild fancy of the people who made them. Among these inscriptions, we are inclined to place those found on the rocks at Sandusky Bay, those at Barnesville, Ohio, those on the Alleghany river, and those on the Dighton rock. These all differ from the totems which were always significant and were generally inscribed with some order. They differ also from the pictographs in which a story was told; their meaning has never been ascertained and probably never will be; for it is doubtful if

they had any. We divide the rock inscriptions into three classes. 1st. Those which are meaningless. 2d. Those which contain pictographs, but no symbols. 3d. Those which contain animal figures which were used as totems.

In the first class we would place the rock inscriptions of Ohio, to which we have just referred. In the second, we would place the monsters so common on the rocks of the Mississippi river. In the third class we would place the rock inscriptions of the Western Plateaux. Illustrations of the third class may be found

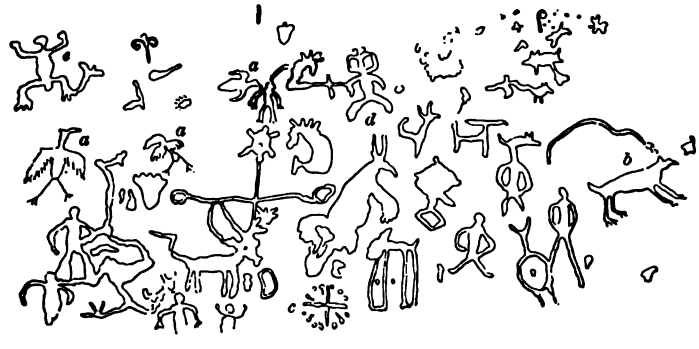

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Fig. 2.—ROCK INSCRIPTIONS FROM ARIZONA.

in the paper already presented on Symbolism. We give a cut to illustrate how the three classes may be mingled, (see figure 2). This inscription was found by W. H. Holmes on the rock in Rio San Juan. In reference to it, Mr. W. H. Jackson says, that the Zuni children pass their time in cutting various figures upon the rocks. And Dr. W. J. Hoffman says that the children of the Pah Utas do the same thing. No interpretation has been given, and it is not known by whom the inscription was made, but probably by the cliff dwellers. It differs from another inscription which was discovered in the same region, wherein a procession of animals seem to be marching toward a council house. Specimens of the three classes of symbols may be seen on the plate which was given in our previous paper.* In this, No. 6 would represent the first class, Nos. 7, 8 and 9 the second class, and No. 10 the third class. So, in Fig. 2, *a*, *b*, and *c* may be said to represent pictographs *c* and *d* symbols, and the other figures are meaningless. There are inscriptions in the southern part of the Mississippi Valley which were evidently intended to be totemic.

Fig. 5 represents the etchings upon a piece of sandstone slab obtained from Los Angeles. In reference to this Dr. Hoffman says: "Only a few characters are visible, but those resembling

*See AMERICAN ANTIQUARIAN, Vol. VII, No. 4, July 1885.

whales, were evidently carved there to show that the deceased had been a fisherman or a whale hunter. Such a custom prevails very extensively among the Innuit of southern Alaska."

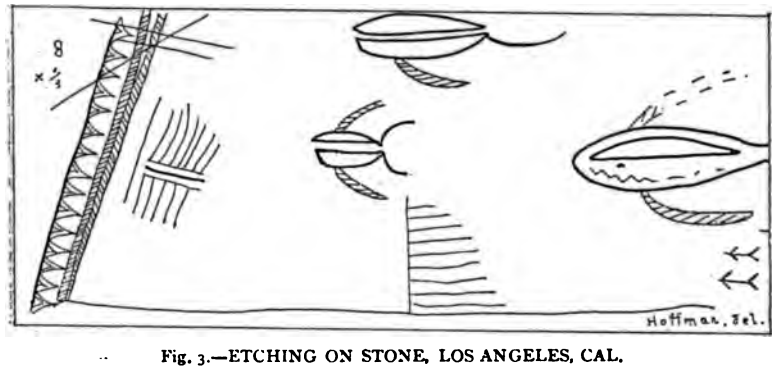

Fig. 3.—ETCHING ON STONE, LOS ANGELES, CAL.

We turn now to the specimens of totems. These are sometimes found inscribed upon rocks. They are, however, more frequently seen in the picture writing. There is no doubt that the emblematic mounds embodied them to a certain degree. The treaties and deeds which were given by the natives after the advent of white men, perpetuate them. The pictures of the dances and feasts and religious ceremonies of the various tribes have preserved them. They prevailed among nearly all the wild tribes, and especially among those which resided in the northern and eastern portion of the United States. Various authors, such as Catlin, Schoolcraft, Morgan and others, have described these totems, and need only to be studied to reveal to us what a vast amount of symbolism of this kind was prevalent. The totem symbols are fast disappearing; but there are a few records which preserve them. It may be said that the Dacotah Calendar is a useful document for the study of totems. The deeds of the Iroquois which have been preserved in the Documentary History of New York, are also suggestive on this point. The song Walum Olum, or the Red Score of the Delawares, recently published by Dr. D. G. Brinton is also suggestive but contains symbols of another class rather than totem symbols. Catlin has given us in connection with the account of the Mandans, a picture of a Prophet's Lodge. In this picture there are various totem symbols. The totems of the tribes are represented as flying toward the Lodge and seeking an entrance through the opening at the top. Here are the fox, bear, turtle, bird, serpent, man and woman, sun and moon, all in the air above the Lodge with the heads directed towards it. These were the totems or tribal divinities which were subject to the medicine man.

The tattoo may be regarded as a kind of symbol. Generally it was used as a personal symbol rather than as a tribal sign.

Tattoo marks were engraved upon the face, and at the same time upon the bark of trees, indicating personal ownership. This is the custom among the Los Angeles Indians. Dr. Hoffman says: "It bears a great resemblance to customs practiced by the natives of New Zealand, where the facial decorations of a dead man are reproduced upon trees near his grave."

The beginning of symbolism is to be found in that totem system which prevailed among the hunter race. The grade of art which belongs to the fishermen was not one which admitted of symbols; but the grade which the hunter tribes introduced seems to abound with them. The fishermen corresponded with the cave dwellers of Europe. Picture writing was common with them both. The hunter races correspond to the Shell Heap people of Europe, a people who were in the stone age.

Sir John Lubbock says, "probably no race of men in the Stone Age had attained the art of communicating facts by means of letters, nor even by the ruder system of picture writing" but here we have two grades of art, one picture writing, and the other symbolic totemism and both belonging to the Stone Age. We believe, also that hieroglyphics were known in America to the people, who had not passed out of the Stone Age.

The powers of communicating thought through their tribal symbols or totems was known and felt by the hunter races. They could make themselves understood as well by these symbols, as they could by pictures; and frequently communicated information to those whose language they could not speak. Symbolic writing, in which totems were the prominent feature, was a kind of sign language. It was, in fact, closely associated with that language. It formed a sort of universal alphabet for the native tribes.

Picture writing, viewed as a work of art, was in advance of symbolism, but viewed as a means of expressing thought, it was far inferior. We see, however, in them the two stages of the art of writing, and may understand how the ideographic and the hieroglyphic stages grew out of these. The theme is suggestive. We are not able to trace the symbols from the picture writing, through the totem symbols, up to the hieroglyphic writing, but we find animal figures in them all, and so we have a clue which may enable us to understand the line of growth, and, possibly we may be able sometime to follow up the line, and see how one grew out of the other. We must remember, however, that picture writing did not cease when the symbolic race was introduced. It ran along parallel with symbolism. There were three lines; first, picture writing; second, symbolism; third sign language. These three lines or methods of communicating were common to the hunter races.

We have now considered the totemism of this one district, but we pass on from this region in which animal figures were so com-

mon, to another district and to another system. We go to the west of the mountains and find there several native races in the condition of hunters. But we discover that they have another system of symbols, and another means of expressing thought. Sculpture now comes in to present its tokens. The sculpture of the tribes of the Northwest coast is well known. This presents to us a fourth stage of the symbolic art; the first being the picture writing; the second, the totem system; the third, the sun symbol, and fourth the ancestor posts. We take it up now because there are many animal figures contained in these posts. Totemism evidently prevailed here, but it is a new grade of culture and a form of symbolism which is different from that upon the eastern coast. Here we find that human effigies are mingled with animal shapes. The question is as to the significance of these two classes of symbols. Did the animal figures express a primitive system of totems and the human figures indicate that ancestor worship had been intruded or infringed upon it. This is a natural inference, but there are few facts to prove the position. The law of growth would naturally lead from animal worship up through sun worship to ancestor worship. But we have on this continent the different systems presented in fragments which are separated from one another by great distances. We may say that two geographical lines of progress may be traced, one on the east side of the mountains and the other on the west. The first commenced with the picture writing of the Eskimos passed through the animal totems of the hunter tribes and ended in the sun worship of the Agricultural races, making an unbroken line from the Arctic region to the Gulf of Mexico. The other or second line was fragmentary. It commences with the same stage of picture writing among the Eskimos; but appears next in the carved totem posts of the Thlinkeets. It disappears again being lost in the rude pictographs of the California tribes; again appears in the high stage of art among the Mexicans and ends with the hieroglyphics found in Central America. We do not trace any connecting line of development along the Pacific coast, for the symbolism is presnted to us in fragments. It appears in the shape which we have described on the northwest coast, especially in the northwestern territory, and parts of Oregon. A long space then intervenes between that region and the territory of Mexico where the symbolism again appears, having characteristics somewhat similar. There is no connecting link between these two. The wild tribes of California, Arizona, and New Mexico have no such symbolism. What they have resembles that of the eastern tribes, and is full of animal semblances. A question as to an intruded cultus comes in here. The Ancestor worship of the Asiatic Continent may have influenced these tribes on the northwest coast. The carving of Polynesians may also have educated them. They

may have borrowed their symbolism from the inhabitants of the islands of the Pacific and of the Asiatic coast and so have developed an entirely different type from that which prevailed among the tribes on the eastern side of the mountains. The pillars and columns of the Nahaus do, however, resemble the totem posts or pillars of the Thlinkeets. They are much more elaborate, but are characterized by being built in stories. They have also human forms, which are grotesque and complicated and unique. We are reminded by these characteristics of the many storied towers of India aud the grotesque carving of the Chinese.

The hieorglyphics on these pillars or columns are very elaborate. They are not pictures and cannot well be traced back to any picture writing. Their source of development or of growth may probably be traced across the ocean and not back into the interior. We certainly lose the thread when we go to the east. We are not sure that we hold it when we go to the west. We think we see fragments of it at the north, but we are not sure but that these are the ends of two threads and not the fragments of a broken line.

There are, however, three or four grades of symbolism on this western or Pacific coast; the first in Washington Territory, the second in Mexico, the third in Yucatan and possibly a fourth in South America. There is, however, this peculiarity in the symbols of all these localities that animal figures are apparent in all totemism, having been perpetuated through the different grades. There are many symbolic carved sun columns; but they seem to be as closely connected with a primitive animal worship as are the monuments of other regions. They remind us of the fact that totemism was not entirely lost, even if sun worship had come in and overshadowed it. We may say that in this region including all of Central America and Mexico, there was a great mixture of symbolism. Animal figures, human forms, and sun symbols are strangely blended and it is difficult to distinguish the animal totems from the sun symbols, but we refer to the fact that animal figures are conspicuous, and that in some cases simple animal images are found without any decoration or any hieroglyphics; for they are expressive of a possible survival of the original or primitive totemism. Still the totem system is mainly exhibited in the Northern district.

Here carved statues and pillars are called totem posts, but they present more human figures than they do animal. There are here many paintings and drawings which are symbolic and the totems of the tribes are sometimes expressed in these; but the most conspicuous symbols are those which are contained in these ancestor trees. The analysis of these carved posts reveals to us one fact, that the family genealogy is expressed in the human figures, but the clan totem is shown by the animal semblan-

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· —TOTEM POSTS FROM THE NORTHWEST COAST.

· many · totem posts in which the thunder bird is
· · Totemism seems to have been modified and min-
· to a genealogical record. The bird represents the first
· ancestor. The human figures represent the later progeni-
· animals represent the clan, the human figures the

They call the figure at the top the "thunder bird," but so much a nature divinity as it is a tribal God. If it per- the thunder or any power of nature it at the same time represents the animal divinity. The bear is also a totem and this animal is sometimes carved on the totem posts and sometimes painted on boards or woven into blankets. See Fig. 5.

Fig. 5.—THE THUNDER BIRD.

There is a picture of a chief* lying in state, in which there are blankets with bears woven in them on the bed, the image of a stuffed bear is beside the bed, the same or similar figures are seen ornamenting the walls above the bed and every where in the room are animal semblances. These were undoubtedly the symbols which expressed the tribal connection of the chief. They show the clan emblems as well as the personal totem of the chief.

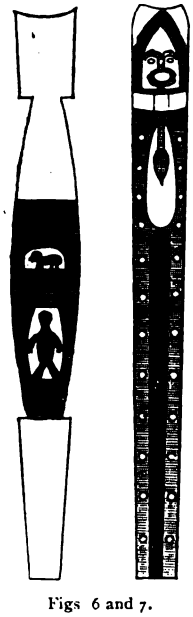
It seems to have been a peculiarity of the people of the northwest coast, that they symbolized their clan history by animal figures, but their family history by human figures. We do not know that they were very different from the other American tribes except in this. It is however probable they were older or at least had continued their tribal existence longer than many of the tribes farther east.

There were certain tribes, such as the Dacotahs, who had almost reached the same stage that these had. It appears from the researches of ethnologists, and notably those of Rev. J. O. Dorsey, that the Dacotahs had not only tribes and clans, but subclans, as if they were approximating to the condition where the family would be recognized as constituting a separate line. In these tribes the mother-right had disappeared, and the father had come to take the place of the mother in giving the name and inheritance to the clan. We need only to carry the subject a little further, to see how tribes like those on the northwest coast might set up the family name and genealogy as still more important than the clan name and seek to symbolize this fact by their to-

*See Century Magazine—also West Shore for 1881.

tems. In this way we might suppose that a people would easily pass out from animal worship to ancestor worship, the first having been correlated to the clan, and the last to the family. The totem posts of the northwest coast are suggestive objects for our study on this account. These were always expressive of the family honor and the family history, but they suggested at the same time the clan system, the family name being symbolized by the human figures and the clan by the animal, as we have said.

There is one point further in this connection. These tribes of the northwest coast were undoubtedly descended from the tribes of the northeast coast of Asia. Their totem system is to be studied in connection with the Asiatic tribes. We know that the peculiarity of Mongolian races, and especially of the Chinese is that they were given to ancestor worship. The same is true of the tribes situated north of the Chinese wall, such as the Samoyedes, Tungus, and Ostyaks; ancestor worship was very common among them. We may suppose that the American tribes on the northwest coast derived their system from the same source. We find in the totem posts, not only the record of the tribal history, but we may trace in them hints as to their line of migration. These tribes undoubtedly had passed through the various stages of animal worship, and reached the early stage of ancestor worship. They, however, retained the symbols of both systems in these carved posts, and so we have in them a book which we may read as full of significance.



Figs 6 and 7.

The cuts which we present will illustrate the point, it will be noticed that quite a difference exists between these totem posts. The smaller figures however represent the posts which were erected inside of the house while the larger figures represent those which are on the outside of the house. In reference to the former Rev. M. Eells says, generally these sticks are posts which are used to support the roof of their feast houses, but sometimes are in private houses, and occasionally are placed near the head of the bed, as protectors. See Figs. 6 and 7. These represent posts which are set on large cross beams to support the ridge pole, in a large communal house, No. 7 having been unveiled with great ceremony. (In the engravings the black portions represent red, the horizontal shading blue, and the vertical black. The unshaded portions represent white paint.) Figure 9 was a board in another large house, where several hundred Indians gathered for a w[illegible] festival. At this time a few persons gave to their invited

friends several hundred dollars in money and other valuable things and it was said that the spirit which dwelt in it really gave away the presents. The principle of idolartry was in all this superstition; but still the sticks were of such a shape that they could not properly be called idols. I had been here for years before I saw what could be called by this name and have never seen but this one. As I visited them at one of their religious gatherings in 1878 I saw Fig. 9, which represents a post about four feet long, roughly carved, with the face and body of a man, but with no legs or feet, the lower part being set into the ground and around this they performed their incantations. The eyes were silver quarter dollars nailed to it, and at the time it had no clothes on except a necktie of red cloth, white cloth and beaten cedar bark. It is said to have been made by the father of a very old man and was kept secreted in the woods when not wanted. I saw it several times after they were done with their performance, and the Indians willingly allowed me to make a drawing of it. It has since been carried off to the woods again.

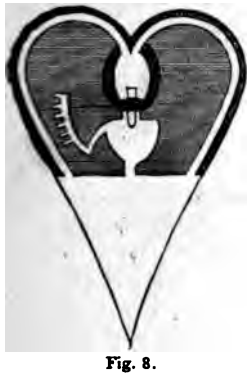


Fig. 8.

Fig. 9.

Fig. 10.

There are many such figures among the tribes of the Northwest coast. We present a figure, see Fig. 10, which came from this region. Very little is known concerning it. It is described in one of the Smithsonian Catalogues. It, however, probably represents a totem or a genealogical record of some private person. It will be noticed in this post that the animal totems are quite distinct from the human image. Crocodiles are here the tribal totems, but the knife-feathered image is the totem or emblem of the family.

VI. This leads us to another part of our subject, the modifi-

cation of the totem system. We have traced the growth of the system from the primitive picture-writing, in which animals were conspicuous, and have found that totemism and symbolism began at about the same stage. It was not used by the fishermen but came into vogue among the hunter races; it continued among these races going through the different stages of growth until it finally reached a stage where ancestor worship came in to modify it. It is noticeable, however, that totemism continued among the agricultural tribes, and to a certain extent among the Pueblos or village Indians.

It is probable that a modified form of totemism existed among the civilized races, but the symbols among them became changed. There are, to be sure, many animal figures among these symbols but along with these figures certain symbols which are significant of a primitive stage of sun worship and others which are significant of a primitive ancestor worship and so on until we come to the elaborate and complicated symbols of the civilized races. The modification of the totems is then an important point for us to study because we may find in it a history of the changes through which native society in America passed, and may possibly trace the line of their migrations. This is a task which the Archæologists must set before themselves. We have said that totemism was characteristic of hunter races mainly, and that it was confined to a certain stage of society, that stage which is represented by the term animal worship. We, however, have taken the position that the totem system was perpetuated in ancestor worship. To reconcile these two points we must consider that there were modifications of the totem system. These modifications may be seen, 1st, In the combination of animal figures and human forms, which we have seen in the genealogical tree. 2d, In the fetiches and prey gods of the Zunis. 3d, In the carved pipes and other figures which prevailed among the Mound Builders. 4th, In the effigies which we trace in the emblematic mounds. 5th, In the adornments and decorations which were common among the native tribes, especially at their feasts and religious ceremonies. 6th, In the various myths and traditions which clustered about the heroes, ancestors and prehistoric divinities. 7th, In the superstitions which prevailed in reference to certain haunted places, especially those where a resemblance to animals was recognized in the forms of nature.

The first modification which we shall consider is that which appeared in the personal adornments, decorations, and habiliments of the natives. It is a remarkable fact that there was not only a symbolism in these adornments, but that the personal names and exploits, and tribal connection, were thus symbolized; in other words, that totemism was embodied in the official costu[illegible] are frequently seen suspended to the dress or hair of

the chiefs and especially of the medicine men. See Fig. 11. The significance of this is that the totem system was symbolized but in a modified form. *We present several cuts to show how totemism could be expressed in the personal adornments. The

Fig. 11.—THE INDIAN MEDICINE MAN.

picture of the medicine man is familiar. In this picture, how-

*The cuts which we have presented do not fully illustrate the subject; other cuts may be found in the Smithsonian Report for 1881, p. 540, Figs. 9, 10 and 14. Also American Naturalist, July 1885, p. 676, March 1885, p. 281. Lubbock's Origin of Civilization, p. 33, Fig. 5, and page 39, Fig. 11. Second Annual Report of the Ethnological Bureau, p. 12, plate I, p. 16, pl. II, p. 20 pl. III, p. 24, pl IV, p. 26. pl. V, p. 27, pl. VI, p. 28, pl. VII, p. 29, pl. VIII, p. 30, pl. IX, p. 40, pl. X, p. 41, pl. XI, p. 60, pl. XIV, p. 64, pl. XV, pps. 155—163; p. 302. pl. LXXVI; p. 395, Figs. 566–569; p. 596, Figs. 570–572. Author's book on Eblematic Mounds, also Picture Writing. Catlin's North American Indians, p. 40, Fig. 19; p. 128, Fig.

[illegible] now animal totems might be used [illegible] tribal emblems. The coat of arms [illegible] have been worn by one man. [illegible] to this person in great profusion. [illegible] the superstition of the people in this [illegible] himself up. The Medicine Man seems [illegible] the great divinity and ancestor of the [illegible] he seems to have had a power or control [illegible] divinities, the tortoise; the lizzard, the [illegible] eagle and many other animals. The [illegible] would get into his tent and throw out [illegible] emblems of the tribal divinities, he would imi- [illegible] the cry of the different animals and would [illegible] ceremony by declaring the advent of the chief [illegible] the voice of the particular animal, with a [illegible] as if the contest between the tribal gods had [illegible] was, however, in this ceremony the modification [illegible] system for the animals seem to personify the differ- [illegible] of nature as well as the tribal divinities. It was [illegible] preparing the people for a higher stage of nature [illegible] yet the animal emblems are all retained.

[illegible] modification is found in the pipes. These were partly totemic and partly decorative, that is they were expressive of the tribal name, but were also creations of fancy and were subject to a great variety of forms. On this point we are happy to quote the words of Mr. H. M. Henshaw. He says, with reference to the origin of these animal sculptures: *" Many writers appear inclined to the view that they are purely decorative and ornamental in character, *i. e.*, that they are attempts at close imitations of nature in the sense demanded by high art, and that they owe their origin to the artistic instinct alone. But there is much in their appearance that suggests that they may have been totemic in their origin, and that whatever of ornamental character they may possess is of secondary importance. With perhaps, few exceptions, the North American tribes practiced totemism in one or the other of its various forms, and, although, it by no means follows that all the carving and etchings of birds or animals by these tribes are totems, yet it is undoubtedly true that the to-

56; p. 234, Fig. 98. Dorman's Primitive Superstitions, p. 83, Fig. 1; p. 84, Fig. 2; p. 85, Fig. 3; p. 86, pl. II; p. 127, Fig. 9; p. 238, pl. IV; p. 272, Fig. 13; p. 323, Fig. 19; p. 362, pl. V. Documentary History of New York, Vol. I. p. 7, Figs H, I, M, O, K; p. 9, inset. The Indian Tribes of the United States, by F. S. Drake, plates, II, III, IV, VI, XVI, XX, XXIV, XXV, XXVIII, XXXI, XXXIV, XXXV, XXXVI, XXXVII, XXXVIII, XXXIX, LXXV, LXXXII Mallory's Sign Language, p. 372, Fig. 164; p. 422, Fig. 249 Yarrow's Mortuary Costumes, Figure, XLVI. Squier's Nicaragua, p. 36, pl. I; p. 39, pl. III; p. 54, Nos. 2 and 3; p. 63, Nos. 11 and 12. Bancroft's Native Races, Vol. V. p. 40, Figs. 1 and 2; p. 42, Figs. 3 and 4; p. 43, Fig. 5; p. 46, Fig. 9; p. 49, Fig. 1; p. 50, Fig. 2; p. 51, Fig. 3.

*See Se[illegible]nual Report of the Bureau of Ethnology, page 150.

temic idea is traceable in no small majority of their artistic representations, whatever their form. As favoring the idea of the totemic meaning of the carvings, it may be pointed out that a considerable number of recognizable birds and animals are precisely the ones known to have been used as totems by many tribes of Indians. The hawk, heron, woodpecker, crow, beaver, otter, wildcat, squirrel, rattle snake, and others, have all figured largely in the totemic divisions of our North American Indians.

"Their sacred nature, too, would enable us to understand how naturally pipes would be selected as the medium for totemic representations. It is also known to be a custom among Indian tribes, for individuals to carve out or etch their totems upon weapons and implements of the more important and highly prized class, and a variety of ideas, superstitions and others are associated with the usages, as for instance in the case of weapons of war or implements of the chase, to impart greater efficiency to them. The etching would also serve as a mark of ownership, especially where property of certain kinds was regarded as belonging to the tribe or gens and not the individual. Often, indeed, in the latter case the individual used the totems of his gens instead of the symbol or mark for his own name.

"As a theory to account for the number and character of these animal carvings the totemic theory is perhaps as tenable as any. The origin and significance of the carvings may, however, involve many different and distinct ideas. It is certain that it is a common practice of Indians to endeavor to perpetuate the image of any strange bird or beast, especially when seen away from home, and in order that it may be shown to his friends. What are deemed the marvelous features of the animal are almost always greatly exaggerated. It is in this way that many of the astonishing productions noticeable in savage art have originated.

Another modification of the totem system is that which is found among the Zunis. The Zunis are a remarkable people. They have a fetichistic religion and at the same time are sun worshippers. The fetiches perpetuate the animal divinities, but their sun worship absorbed and supplanted totemism. The Zunis had many Fetiches; these were generally representatives of the operations of nature; they seem to have dominion over the different elements. The Zunis divided the earth into six regions, the north, west, south, east, the upper region and the lower regions and ascribed a divinity to each one of these regions. These divinities were all animals, but they were animals of different kinds, the wolf being the God of the east, the bear the God of the west, the badger the God of the south, the mountain lion the God of the north, the eagle the God of the upper regions, and the mole the God of the lower regions. They personified the powers of nature but they did this as much by their color and by their peculiar adornments as by their animal form. They were ani-

mal divinities; they were not tribal Gods so much as they were nature Gods. They neither represented the tribal names or the tribal history, but they symbolized the divinity which ruled in the different parts of the sky. Each one of these animals was represented by an image, the image however, always had the color which was peculiar to the sky, the God of the north being yellow, that of the west blue, that of the south red, that of the east white, that of the upper regions all colors, and that of the lower regions, black. These colors are used in the pictographs, and in all the mythic symbolism of the Zunis to indicate the regions referred to above. We cannot fail to see in this, clear reference to the natural colors of the regions; the barren north with its auroral hues, the west with its blue Pacific, the rosy south, the white daylight of the east, the many hues of the clouded sky, and the black darkness of the holes and caves of the earth. Among the Zunis there were different classes of animal divinities, three of them being especially prominent. They are: 1st, the Gods of the six regions referred to above; 2d, the prey Gods or the fetiches of the hunt, and 3d, the Gods of the priesthood of the bow. These were all worshiped and were symbolized with great care, every part of the image or of the painting being expressive of the attributes of the divinity and some particular phase of nature. Sometimes the idols were trigged up with various flint weapons such as arrow-heads and spear-heads or with shell beads, the arrow-heads and beads always having a symbolic significance, the position of the flint, whether on the back or side or belly of the animal being in itself symbolic, and the color of the beads and flints being also expressive. Sometimes the animals were painted on a shield, and the shield was decorated with feathers and covered with various figures. A winged creature is frequently seen on the shield, the wings being attached to a human form, but the animal divinities are always seen accompanying this nondescript figure. Two pictures of the fetiches of the priesthood of the bow are given by Mr. F. H. Cushing in his interesting description of the Zuni fetiches. These pictures are in different colors, to represent the earth and sky and water; one of them has a winged human form in its [illegible], a crooked serpent below the feet, and a moun-

Fig. 12.—KNIFE-FEATHERED MONSTER.

tain lion on either side. *"This curious god is the hero of hundreds of folk-lore-tales and the tutelar divinity of several of the societies of Zuni. He is represented as possessing a human form, furnished with two flint knifes, feathered pinions and a knife-feathered tail. His dress consists of the conventional terraced cap representative of his dwelling place among the clouds, and the ornaments, badges and garments of the Ka-Ka. His weapons are the Great Flint Knife of War, the Bow of the Skies, (the Rain Bow), and the arrow of Lightning; and his guardians or warriors are the Great Mountain Lion of the north and that of the upper regions. He was doubtless the original War-God of the Zunis, although now secondary in the order of man, to the two children of the Sun mentioned." See Fig. 12. "These fetiches are constantly carried by the warriors when abroad, in pouches like those of the hunters, and in a similar manner. The perfect fetich of this order differs but little from those of the Hunters save that it is more elaborate and is sometimes supplied with a minute heart of turkois bound to the side of the figure with sinew of the Mountain Lion, with which, also the arrow-point is probably attached, usually to the back or belly.

"The arrow point when placed on the back of the fetich is emblematic of the Knife of War, (Sa-wa-ni-k'ia a-tchi-en-ne,) and is supposed, through the power of Sa-wa-ni-k'ia or the "magic medicine of war" to protect the wearer from the enemy from behind or from other unexpected quarters. When placed "under the feet" or belly, it is through the same power, considered capable of effacing the tracks of the warrior that his trail may not be followed by the enemy."

The other picture is that of a shield with an eagle in the centre, the serpents below the eagle with a white bear above. This is the great white bear. The three beings which constitute the prey-Gods of the priesthood of the bow are the Mountain Lion, the great white bear and the knife-feathered monster. These are the war gods, as the others are the hunter gods.

In reference to the worship of animals it naturally follows from the Zuni philosophy of life that his worship, while directed to the more mysterious and remote powers of nature, or as he regards their existence, should relate more especially to the animals; that in fact, the animals, as more nearly related to himself than are these powers, should be frequently made to serve as mediators between them and him.

The color of the stone was symbolic as well as the shape, the four parts of the sky were supposed to have different colors; the north was yellow; the east, white; the south, red; the west, blue; the upper regions, many colored; the lower regions, black,

*Second annual Report of the Bureau of Ethnology, pps. 40 and 41.

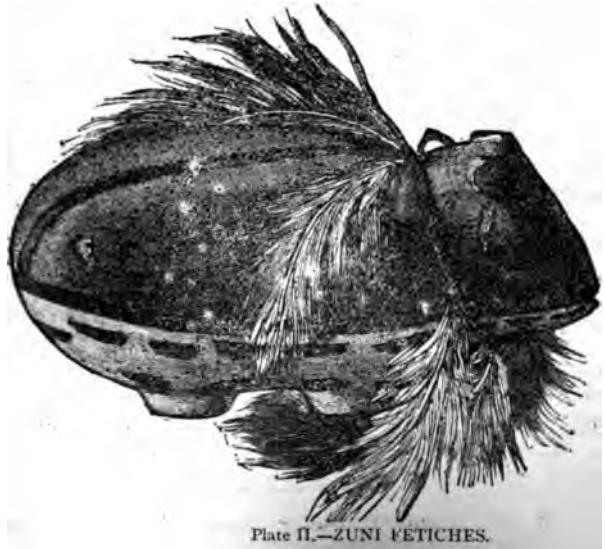


Plate II.—ZUNI FETICHES.

accordingly the divinities which presided over these regions had colors which corresponded: See plate II.*

In this plate we have Fig. 1, Mountain Lion, God of the north —(yellow). Fig. 2. the Coyote, which is the God of the west—(blue). Fig. 3. the Wildcat, which is the God of the south—(red). Fig. 4. The Eagle, which is the God of the upper regions—(spotted). Fig. 5. The Mole, which is the God of the lower regions—(black).

The ornaments or equipments in the fetiches are also symbolic. Ordinarially the Gods of the hunt, that is, those which presided over hunters and were supposed to direct them to the game, were furnished with the arrow heads, while the prey Gods, which represented the game which was to be slain and consumed, were frequently without the arrow heads. It was supposed that the animals of prey had a magical influence over the animals they preyed upon, and breathed upon them whether near or far and never failed to overcome them, piercing their hearts and causing their limbs to stiffen, and the animals to lose their strength.

———o———

ALLIGATOR MOUND.

AN EFFIGY OR SYMBOLIC MOUND IN LICKING COUNTY, OHIO.

As is well known Effigy or Symbolic Mounds, sometimes called Animal or Emblematic Mounds are simply raised figures,—gigantic *basso relievos*,—representing a man or an animal, a bird or reptile, and in some instances one or more objects of inanimate nature.

A mound of this class is usually from two feet to six feet higher than the ground upon which it was built, and generally magnifies the size of the object represented from ten times to almost a hundred times, possibly in some cases even a thousand times. Emblematic or Symbolic Mounds—"mound imitative art" as one of our writers poetically styles them—are found very numerous in groups in the state of Wisconsin, but are also found in a few localities in other states. In Wisconsin they are in groups but in other states they are isolated. But few Emblematic or Symbolic mounds are known in Ohio. The often de-

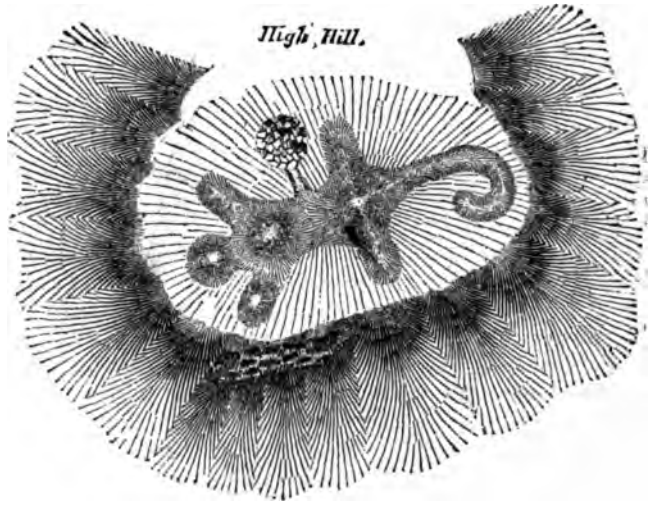
*In this plate we have the different fetiches, but the color is not represented in the printing.

For further information on the totem system, see Morgan's Ancient Society, Schoolcraft's Archives, Lubbock's Origin of Civilization, Mallory's Sign Language, Mallory's Dacotah Calendar, Brinton's Hero Myths, Bancroft's Myths and Languages, Hale's Iroquois Book of Rites, Valentini's Essays published by the American Antiquarian Society, David Cusick's Six Nations, The Documentary History of New York, Vol. I.

scribed, the most extensive, and probably the best known of these is the Great Serpent Mound near Brush creek, in Adams county." This most remarkable effigy was very well described by Rev. J. P. Maclean, (one of our most intelligent, laborious, and conscientious archæologists.) in the January number of the American Antiquarian, for 1885, pages 44-47.

There are only two well defined effigy mounds in this (Licking) county. They are named respectively "Eagle Mound," and "Alligator Mound." The first named which represents a huge bird "on the wing," is situated in the middle of an enclosure at Newark, known as the "Old Fort," and was somewhat minutely described in the July number of the American Antiquarian of 1881; also in the history of Licking county, Ohio, on pages 523-524; likewise in a small pamphlet of 20 pages, entitled "Mound builders works near Newark, Ohio."

But my purpose is to furnish a description of the "Alligator Mound," the only other mound of the Effigy class in Licking county, Ohio.



"Alligator Mound" so called is situated on a hill more than a hundred feet high, called "Alligator Hill," half a mile north of the road leading from Newark to Granville, about six miles west of the former which is the county seat, and less than a mile east of the latter place, which is a flourishing University,College, and Seminary town. The entire length of the animal represented is two hundred feet, his head; body, legs, (four in number,) and tail, all being clearly defined. The length of the body between the fore legs and the hind legs is fifty feet; the breadth of the body at its broadest part is twenty feet; the fore legs are full twenty feet long, and the hind legs are about twenty-five feet in

length. The head, fore shoulders, body and rump have an elevation varying from three feet to five feet or more, while the remainder of the animal is a little less, the tail gradually tapering off to the end, terminating in a twist or curl southward. The alligator lies in a natural position on a nearly east and west line, with his head to the west. On the north side, about twenty feet from his body is an elevation composed mainly of stones, apparantly thrown together at random. This little hillock or heap of stones an dearth, is called an *altar*, and from it a narrow, barely perceptible slightly elevated graded way leads to the effigy, striking its right side about midway between the foreleg and hind leg. The writer hereof stated in his description of "Eagle Mound," "that excavations made many years ago into the center of that earthen figure, developed an *altar* built of stones upon which ashes, charcoal and calcined bones were found, indicating that it had been used for sacrificial purposes." This fact in connection with what is said above in relation to the little heap of stones or *altar* connected by a graded way with the effigy on "Alligator hill," tends to raise the presumption that effigies are, in some cases *Sacrificial* as well as "*Symbolical* or *Emblematic* Mounds." Moreover many of the surface stones, somewhat promiscusously scattered over the hill and on and about the *altar*, give evidence of having been at some time subjected to the action of fire, a fact suggestive of sacrificial offerings connected with the religion of the Mound builders; and also rendering quite plausible the belief that "Alligator Hill," may often have been a-blaze in prehistoric times, doing duty as signal stations.

"Alligator Mound" is composed of earth and stones, liberally intermingled with gravel and sand—material almost imperishable —materials usually employed by the Mound builders—hence their works remain, and have remained through the ages as monuments of the skill of their constructors. But perhaps "they builded better than they knew"—builded of stones and earth because more accessible than less enduring materials, such as wood, *adobe*, brick, etc., etc.

The top of "Alligator Hill" was, long ago, denuded of most of its growing trees and subjected, where sufficiently level, to agricultura uses.

From the "Alligator Mound" a fine view of the surrounding country is had. Ten or more mounds and enclousures are within view of it, one of the latter being only a mile distant, in an easterly direction, which also encloses three pyrmidical mounds.

As already stated the "Alligator Mound" is situated on the summit of a high hill or spur which projects boldly into the valley of the Raccoon creek, the middle one of the three streams that form the Smoky river at Newark, six miles distant in an easterly direction. The hill is a very conspicuous point, one commanding an extensive view of the surrounding country. If

the forest trees were removed the Mound builders works near Newark could be syon from it, and probably also the mound at Fairmount church, distant ten miles, and others in that vicinity.

Many years ago Prof. Daniel Wilson, L. L. D. expressed the opinion in the first edition of "Prehistoric Man" that the effigy on "Alligator Hill" symbolized "some object of special awe or veneration thus reared on one of the chief 'high places' of the nation, with the accompanying *altar*, on which the ancient people of the valley could witness the celebration of the rites of their worship, its site having been obviously selected as the most prominent natural feature in a populous district abounding with military, civic and religious structures."

When some years later the same learned author, now President of Toronto University, was about to issue the third edition cf his very able work, he made a personal visit to "Alligator Hill," with a view of verifying his measurements, and for his own gratification, as well a to reach satisfactory conclusions as to the purpose or purposes for which the effigy mound thereon was constructed. Upon a full and careful view of it, and the surroundings, he saw no reason to change the opinion that he had advanced, and that the Effigy on "Alligator Hill" undoubtedly served a purpose in the religious worship of its constructors, if inded it was not itself an object of worship and adoration!"

History informs us that the ancient Egyptians were worshipers of the Crocodile and other animals, and it is quite probable that the Mound builders of North America were worshippers of the American crocodile, seeing that they were certainly a superstitious people, an idolatrous race—a people who cherished a religious system that was marked by sacrificial characteristics. They offered sacrifices—human sacrifices there is reason to believe—the requirements of their religion could probably not be met without sacrifices—animal sacrifices if not human—hence the necessity of *altars*, therefore they erected them!

In Ohio Effigy mounds are seldom found in groups that is, that two or more of them are not often found together. The Serpent mound stands alone—the Eagle mound is the only *Effigy* mound among the Newark works, and the Alligator Effigy is the *only effigy* mound for miles—it stands isolated, so far as *effigies* are concerned—but there are other classes of mounds in plenty around it and so about Eagle mound.

The following measurements of the Alligator are approximately correct:

Head and neck	30	feet long.
Foreshoulders	15	" "
Body between fore and hind legs	40	" "
Rump	15	" "
Tail	100	" "
Length of entire effigy	200	" "

The length of the *graded* way and *altar* is about 30 feet. I gave the length of the fore legs as full twenty feet, and of the hind legs at about twenty-five feet; and the elevation of head, foreshoulders and rump ranging from three to five feet; and remainder of effigy averaging a foot or two less. These figures are very nearly correct.

Mr. Warren K. Moorehead, an archæologist, of Granville, in a late paper on the "Alligator Mound," says "upon digging into the *altar* no traces of burnt clay or charcoal were found, neither in the mound proper;" from which I conclude that excavations have been made into both mound and *altar*. Originally the south front of "Alligator Hill," which looks into and over the valley, presented an almost perpendicular front, and the fore and hind legs on the left side of the Alligator extended almost to the side of the hill, well towards the bottom, which undermined it, and Mr. Moorehead says a portion of the hill thus undermined, fell down into the valley and carried with it a considerable portion of the Alligator's left legs. He also says that the "workmen in the quarry claimed to have found some bones and characoal during the excavations," but does not say whether the finding occurred after the *debris* of portions of the left legs of the alligator went down the hill or before.

As some of the hill was undermined and fell down it is impossible *now* to say whether or not there was originally any resemblance in the shape of the hill to the shape of the effigy. When I first saw "Alligator Hill" its Southern side, near which the effigy lay, presented a nearly due east and west line parallel with the effigy from head to tail.

It is not by any means improbable that a number of the high hills in full view from the Alligator Mound served the purposes of signal stations, as did also Alligator Hill. The many burnt stones scattered about on the hill, also on the effigy and the altar and graded way, seem to indicate that signal fires were often kindled here.

Fort Hill is about a mile east of "Alligator Hill," and is situated on the highest hill on the north side of Raccoon valley, in the same range of hills as Alligator Hill. On the top of this hill is situated a fort or embankment, which, says the author of the History of Union Township, Licking county, Ohio, (Mr. Samuel Park,) "encloses from fourteen to sixteen acres of land and in the middle of it is another, with a deep moat inside of the wall, which was less than a hundred feet in diameter." He thought several mounds in Union Township could be seen from "Alligator Hill,"distant some four or five miles," if the growing trees were removed.

A mound of crescent form, is situated in the valley about a quarter of a mile east of the "Alligator Hill." "It is," says the compiler of our county History, "an immense pile of dirt upon

the top of the ground in half moon form. It is composed largely of gravel and in its composition differs greatly from the dark loamy earth around it. It is yet seven feet high although it has been ploughed over for fifty years."

"A very extensive earthwork once occupied the bottom land near the crescent, and to the south of it says the same author, when the first settlers entered this valley in 1801, and for several years afterward, this enclosure was plainly visible, its walls being several feet in height. It enclosed seventy-five or eighty acres of level land, and like the Crescent, the embankment seemed to have been made without digging the earth from either side of it, no ditch appearing. This enclosure has disappeared under the operation of the 'savage plowshare.' It is said that no mound appeared within this circular enclosure, which was in full view of "Alligator Mound."

About a mile in an easterly direction from "Alligator Hill," upon a spur of the bluff on the north side of Raccoon valley, is situated an enclosure which was evidently built for defensive purposes. The embankment ranges from three to ten feet in height, measuring from the bottom of the ditch, (which extends all around it on the outside,) to the top. This work embraces about fifty acres of land. The embankment, evidently a breastwork, says the author of our county history, "is a perfect piece of engineering skill, following closely the sinuousities of the brow of the hill, and where there is a ditch or depression in the hill, the embankment is higher than in other places. Conforming as it does to the form of the surface of the hill, it is irregular in shape. Inside of this enclosure there are two small circular works, each enclosing about half an acre. Though long plowed over, these walls are still three feet or more in height. These smaller works are in the form of circles, without any break in the walls and are both located upon the highest part of the hill, and near to its southern extremity, or at least a little south of the center of the greater work. They are very near each other and lie on an east and west line. In the most easterly of these two circles are two small mounds or lookout-stations, also on an east and west line, very near each other, but now not over two or three feet high. Almost the entire surface of the hill is under cultivation, and this crescent work is slowly disappearing in consequence."

Half a mile east of the last described work on the same range of bluffs, is situated what is called the "reservoir," which was evidently once an artificial lake, or reservoir for water. Its diameter is about twenty rods. It is located in a natural depression and has evidently been scooped out with great labor. Near by stands a conical or sugar-loaf mound, about fifteen feet high, having diameter of forty feet at least at its base, and is nearly perfect."

Half a mile farther east on the bluffs are two small mounds on the summit of two hills, evidently erected on these high points or look-out-stations. Down in the valley and eastward are a number of beautiful mounds. All the above works on the bluffs would be visible from the Alligator mound if the trees were cut down.

Looking south from "Alligator Hill" across the Raccoon valley and Raccoon creek, and upon the bluffs and high hills beyond, many fine mounds come into view, a number of them doubtless were, signal or look-out-stations. Many others, in various directions, could be seen if the view were not obstructed by growing trees, some of them certainly were of the observatory class.

From the first settlement of the Raccoon valley to the present time the Effigy on "Alligator Hill" has been called an *Alligator*, for the reason I suppose that it looks more like an alligator than anything else, to most people; it certainly did to those who first called it an Alligator and who gave that name to the hill.

I have called it an "Alligator Effigy," because it is known almost universally by that name. Moreover, I have had no authority to change its name, and do not know that I would do so if I had full authority, for it may have been meant for that animal.

Within five or six miles of the effigy on "Alligator Hill" there still remain nearly a hundred specimens of the earthworks of the Mound builders, and they are of almost every variety of form, including enclosures, mounds, (Sepulchral Temple, Sacrificial Observatory, Objugatory, Emblematical, etc., etc.,) also half circles, parallel walls as well as octagons, semi-circles, partial circles, etc., etc. A reservoir is named above—there is another such a few miles west of Alligator Hill, in Union Township, described by the late Samuel Park.

ISAAC SMUCKER.

THE MUSEUM.

DEVOTED TO THE INTERESTS OF COLLECTORS, EDITED BY E. A. BARBER.

EFFIGIES OF THE MOQUI INDIANS.

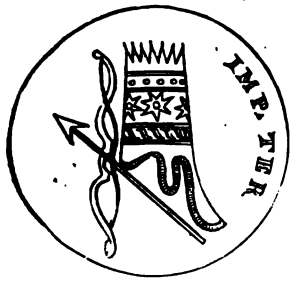
The Moqui Indians occupy seven towns, situated on high plateaux, in the desert district of northern Arizona. In almost every house may be seen little images, varying from six inches to more than a foot in length, carved out of soft wood, in imitation of men or grotesque creatures, and painted in gaudy colors. They are generally suspended from the ceilings, and are difficult to procure from the owners, who hold them in veneration, as gods or idols. The one here figured was found in the town of Wolpi. The illustration, from Maj. J. W. Powell's Second Annual Report of the Bureau of Ethnology, is one-fifth the size of the original which is adorned with a necklace of acorn-cups with a shell ornament or pendant in the center. The head ornaments are decorated with feathers and the entire effigy is brightly painted in a variety of colors.

In the vicinity of the Moqui villages the traveler will often find rows or groups of "prayer-sticks" or "rain-gods" stuck in the ground adjacent to springs of water or on the tops of hills. They are little twigs, decorated with colored feathers and strings, or narrow slips of wood rudely painted to represent men, which are intended as propitiatory offerings to the spirits of water. In this barren country rain seldom falls and water is very precious.

NOTES ON ANCIENT HEAD-DRESSES.

The *diadem*, so frequently exhibited on ancient coins, was the

oldest and most famous of crowns. This consisted of a band of purple and fine linen, about three inches broad, which was worn by kings across the forehead, being tied behind, with the ends flowing down the back.



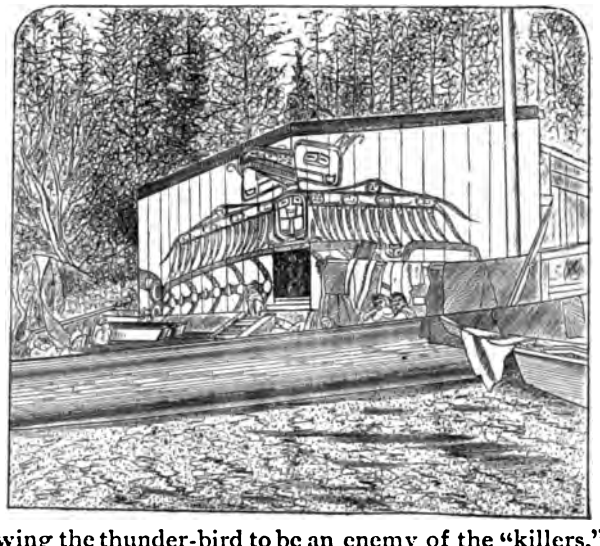
The laurel crown was adopted by the Roman Emperors after Julius Cæsar. Not until the reign of the Constantine family was the right of wearing crowns conferred upon the Empresses. Julia Domitia, and other noted women are represented wearing masses of false hair, dressed often in a strange or uncouth manner.

Constantine the Great wore a crown which covered the whole of his head and was ornamented, in the Persian manner, by rows of diamonds and pearls. The accompanying cut represents a coin of Augustus which bears on its reverse the celebrated *Tiara* of the Armenian kings, the well known symbol of absolute sovereignty among Oriental nations.

HENRY PHILLIPS, JR.

THE THUNDER-BIRD.

The accompanying engraving represents an ancient painting which decorates the front of an Indian chief's house at Alert Bay, Vancouver's Island, B. C. All of the native tribes on the Northwest coast of America have a belief that thunder and lightning are produced by an immense bird, which feeds on the "killer" or fin-back whale. In bygone days when these whales were plentiful the people, when out in the frail canoes, were in constant dread of them. Knowing the thunder-bird to be an enemy of the "killers," and in order the better to secure its protection, the Indians painted it on their houses and even on their bodies. The two little faces above the four, on the wings of the bird, are intended to portray



the sun. The eight little faces represent beavers. An ancient myth tells how the Beaver had all the heavenly bodies in a box before the Raven let them out and placed them in the sky. In the painting this myth is plainly told. In nature the thunder-cloud is supposed to be the bird. The thunder is caused by the flapping of his gigantic wings. The lightnings are the bolts of fire which the bird sends out of his mouth to kill the fish. These bolts seem to be painted on the beak of the bird here figured. He is standing on the skeleton of a killer whale whose bones he is supposed to have picked bare. In front of the house the Indians are shown with their canoes, guns and blankets. They belong to the Nimpkish tribe, a branch of the great Quah-quilh nation.

JAMES DEANS.

THE IGUANODONS OF BERNISSART [BELGIUM] AND THE GREAT SAURIANS OF THE SECONDARY PERIOD.

BY THE MARQUIS DE NADAILLAC.

[*Written for The Museum.*]

How and when did life first appear on the globe? This is one of those mysteries which human science cannot and will probably never be able to solve. We can only say that life began in the waters, that later it was amphibious, then aerial, and that mammals appeared at a much more recent period. Amongst the numerous beings who preceded them, the most wonderful were certainly the Saurians, the name by which the great family of lizards is generally designated and which by some of their peculiarities seem the precursors of the fish, bird and mammal. We can only mention here the principal genera, which may be largely increased by future discoveries in those parts of the world as yet unexplored. The *Pterodactyle*, whose remains were first found in the lithographic limestone of Jurassic formation, near Solenhofen (Hesse-Darmstadt) and are now preserved in the Museum of Manheim in the most extraordinary of all those beings whose ancient existence is revealed to us. We may describe it as an animal, which in its osteology from its teeth to the end of its claws, presented all the characteristics of the Saurians but was at the same time provided with the means of flight and which when stationary, could no more than birds, have made much use of its anterior extremities. The joints either of the fourth or of the fifth finger of the fore-foot were lengthened to become expansors of a membraneous wing which enabled it to fly. Blumenbach first thought it a palmipede; Simmering, a mammal related to the bats; but Cuvier gave it its right place, where it has since remained undisturbed. The pterodactyle, of which twenty species are known, lived on fishes and insects. We have probably in it the origin of the flying Dragons recorded in so many of our mythological tales; and we

must therefore presume either that these dragons were creations of a wonderful fancy, or that the Pterodactyle survived even after the creation of man!

The *Plesiosaurus* possessed the head and teeth of a crocodile with a neck of extraordinary length.* resembling the body of a serpent, a trunk and tail having the proportions of an ordinary quadruped, the ribs of a chameleon and the paddles of a whale. It was aquatic and lived most probably in the sea, if we are to judge from the remains associated with it. The long neck must however have been a great impediment to its progress through the water and we must suppose that it swam upon, or near, the surface, arching back its swanlike neck and occasionally darting it down at the fishes which happened to float within its reach.

The *Megalosaurus* was discovered for the first time in the oolitie slate near Woodstock. No entire skeleton has as yet been brought to light; the Oxford Museum possesses a certain number of bones and amongst them a femur and a tibia each nearly three feet in length and a metatarsal bone measuring thirteen inches. The bones in the British Museum belong to a still larger animal and their study has led the paleontologists to suppose that the Megalosaurus stood from six to eight feet above the ground, that it reached the height of our elephants and that it fell little short of the length of the whales. Its sharp claws must have been of immense force and its powerful dental apparatus leaves no doubt of the carniverous habits of this gigantic lizard. Like all the reptiles it had in store a constant succession of new teeth to supply the loss of the old ones.

The *Ichthyosauvi* which mark the passage between the fishes and the reptiles, abound through the lias and ooltic formations. "If," writes Buckland in his Bridgewater treatise, "we examine these creatures with a view to their capabilities of locomotion and the means of offense and defence which their extraordinary structure afforded to them, we shall find combinations of forms and mechanical contrivances which are now dispersed through various classes and orders of existing animals but are no longer united in the same genus. Thus in the same individual, the snout of a porpoise is combined with the teeth of a crocodile, the head of a lizard with the vertebræ of a fish and the sternum of an *Ornithorynchus* with the paddles of a whale! Some of the largest of these reptiles must have exceeded thirty feet in length.

The teeth in some species amount to 180, the young tooth budding up at the base of the old one. The eye exceeded in magnitude that of any living animal.† That the Ichthyosaurus enjoyed the sense of smell to a considerable degree can hardly be doubted from the structure and position of the nostrils, and we must also notice the enormous expansion of its elongated jaws, well suited to the voracity of an animal that not only preyed upon fishes and other inhabitants of the sea but like the pike of our lakes and riv-

*The neck included from twenty to forty vertebræ.

†Dr. Buckland tells us of the skull of an *Ichtyosaurus platyodon* in which the longer diameter of the orbital cavity measured fourteen inches.

ers fed upon it own congeners. The finest collection of the remains of these saurians, including eight different species, is now in the British Museum.

Such were the principal contemporaries of the *Iguänodon* and we must now mention the recent find in Belgium, which enables us to give a more correct view of this saurian. In 1878, twenty-two Iguanodons were discovered at Bernisart, between Mons and Tournay, at different depths, and in an inferior cretaceous or Wealdian deposit, above the rich carboniferous beds, well known in the couutry. After a labor which lasted no less than three years, and with considerable industry, Mr. de Pauw, one of the keepers of the Museum of Brussels, contrived to preserve the greatest number of these bones which crumbled to dust when first exposed to light of day and the Museum is now fortunate enough to possess two entire skeletons of the Iguanodon completely restored to their pristine forms.

The first astonishment the visitor must experience is to find this animal classed amongst the reptiles, when its nearest approach is to be found in certain edentata. such as the gigantic Mylodon, for instance.

The largest of the two skeletons measures in heighth 14 feet 6 inches and is 46 feet in length.* The head is small and flattened the nostrils large, the orbital cavity of medim size. The jaws contain 92 teeth placed in separate alveoli and their succession is the same as in the Ichtyosauri, "but in the interal structure of these teeth," adds Owen, "the Iguanodons deviate from every other known reptiles." The neck is formed of 10 vertebræ, the trunk of 24, and the tail, which measures no less than 16½ feet, of 51. The limbs are thick and solid, proportionate to the immense carcass they had to carry. The posterior members are much longer than the anterior ones and these latter, like powerful arms, would allow the animal to climb with ease the highest trees and to feed on their foliage. The feet possess four toes and some tracks in the Wealdian deposit lead to the belief that the feet were palmed.

The Iguanodons were herbivorous, their coprolites can leave no doubt of the fact, which is scarcely in accordance with the form of their teeth, admirably adapted though they are, to crush very tough vegetable food, such as the plants found with their remains. They lived on the banks of rivers and lakes where they rapidly escaped if frightened by any danger. Their sight and hearing appear to have been well developed, but the sense of smelling must have been inferior to that of our living animals. The first Iguanodons were discovered by M. Mantell in Tilgate Forest and the principal bones, now in the collections of the British Museum, offer no noticeable difference from those found at Bernissart. Mantell calculated the entire length of the saurian to be 70 feet, the length of its tail 52½ feet, and the circumference of its body 14½ feet.† Professor Owen expressed at the time very grave doubts

*Dollo, *Bul. Musie Royal de Bruxelles.*

†A larger specimen found near Horsham (Sussex) would, if the calculations of Mantell were accurate, have exceeded feet 200 in length.

that the Iguanodon was such a large animal and recent discoveries show that the objections of the eminent naturalist were well founded.

Remains of the Iguanodon have been found in different parts of England. The discoveries we have mentioned are the first we believe ever made in Belgium and we know of none in other parts of Europe.

Such are the most remarkable amongst those gigantic saurians, the wonder of our museums. They all disappeared before those times known as the teritary period. Their extinction, as well as their mode of evolution, remains a mystery to us and we must conclude as we began, in acknowledging the utter inability of science to explain them.

Rougemont, 23 June, 1885.

COLLECTORS AND COLLECTIONS.

The Museum of Natural History, in Central Park, New York, contains a magnificent collection of archæological and ethnological specimens. It includes a large series of wood and stone carvings of the Indians of the North-west coast, such as masks, pipes, door posts twenty feet high, and a war canoe of the Bella-Bella tribe, opposite Queen Charlotte Island, B. C. The latter is some fifty feet in length and cut from a single tree. The Museum also contains large series of stone implements from Denmark, the Swiss lakes, the caverns of France; from Peru, Costa Rica, (including a number of those characteristic large stone collars), Mexico and the mounds of the Mississippi valley. The series of pipes and casts from the mounds, from New York, from Georgia and other sections are particularly valuable.

Dr. Daniel G. Brinton, of Media, Pa., owns a fine collection of stone implements from the valley of the Mississippi. The tobacco pipes, mullers, pestles, ceremonial badges and bird-shaped ornaments are particularly fine.

In the cabinet of the U. S. Mint, at Philadelphia, Pa., is a tobacco-pipe of solid gold, with engraved bowl and stem six inches long, from Africa. The collection also includes three images from Chiriqui,—one in the form of a dolphin (?), one representing a human figure and one, a bird-shaped ornament,—all of beaten gold.

RECENT SALES.

M. Charles Cournawlt, of Malzéville, France, sends us quotations of prices realized at two important sales which took place in Paris, recently. The first was of antique bronzes, the total sum realized being 288,707 frs. An Etruscian mirror brought 5,500 frs.; Greek warrior, 9,100; bust of Alexander the Great, 27,500. The museums of Lyons, the Louvre, St. Germain, and some in England and Germany made important purchases at this sale.

The most important sale of the year was that of the valuable

collection belonging to the Comte de La Bérandière, rich in paintings, antique sculptures, and bric-a-brac of the 18th century. The total sales amounted to 977,474 frs. A View of Rome, by Hubert Robert, sold for 7,000 frs.; The Toilet of Venus, painted for the bathing-room of Madam de Pompadour, 133,000; a bust of Madam de Pompadour, in marble, by Le Moyne, 16,400; an ivory jewel-casket, Arabian work of the 10th century, 2,650; bronze fountain of the 16th century, 6,600; oval, enameled watch, 16th century, 9,900; a medallion, of same workmanship, 8,600; two candlesticks of Louis XV., 3,500; Gobelin tapestry, 5,000.

A new portrait of Washington has recently come to light. It is an enameled miniature, made from a sketch taken from life, by the celebrated enamel painter, W. Bone, of the reign of George III. The painting is dated 1796, two years before Washington's death. It was presented by Mr. Peabody, of London, England, to a lady who is now in this country, and we understand that it is offered for sale, the price asked being $3,000. The size of the medallion is 2x2½ inches. The portrait, which is nearly full-face and half-length, is placed almost entirely to the left of the centre and represents a much older man than any other portrait of Washington which we have seen. Mr. Lyman H. Low, of 838 Broadway, N. Y., in whose hands it has been placed for sale, can furnish a complete history of this interesting and valuable relic.

THE MUSEUM EXCHANGE.

[Offers of exchange from subscribers and contributors will be printed in this department.]

THE undersigned wishes to correspond with collectors having for exchange stamps, coins, old and rare books, minerals, fossils, shells, birds' eggs and nests, Indian relics, such as pottery, stone implements, etc.—*Edward S. Fallick* 204 *Pitt Street, Sydney, N. S. W., Australia.*

INDIAN from Massachusetts in exchange for Western and Southern arrow and spear points.—*Charles A. Perkins, Box* 523, *Wakefield, Mass.*

WANTED to exchange fine stone implements, such as large spear heads, perforated tablets, ceremonial badges, stone pipes, pottery, etc., for specimens of primitive, American textile fabrics, such as mound cloth and examples of original weaving.—*Lock Box* 22, *Philadelphia, Pa.*

MR. C. E. FRWSTER, of Harnsea, Hall, England, desires to correspond with collectors in America who may have for exchange early British coins and tokens.

COLLECTORS AND COLLECTIONS. Don Nicholis Sana and Don Manuel Espantos, of Lima, Peru, own valuable collections of ancient Peruvian pottery, each containing from 800 to 1,00 vessels. These are said to be the largest private collections in Peru, at the present time.

THE magnificent collection of over 2,000 Peruvian vases formed during

twenty years, by Dr. Jos'e Mariano Macedo, of Lima, is now in the Ethnological Museum at Berlin. In the same museum is another important collection of Incariol antiquities, formed by Mr. Icazo, a planter and miner, at Recuay, about twenty miles north-east of Lima. This collection contains 160 jars of great rarity and value, made of unusually fine, red and white clay.

J. A. AND H. F. RUTH, of Riegelsville, Pa., possesses a cabinet of Indian antiquities, consisting of 2,941 specimens as follows: Spear and arrow-heads, 1,424; plummets, 123; hammers, 47; celts, 33; axes, 34; drills and perforators. 45; knives and scrapers, 448; pottery, 557; ceremonial badges, 15; miscellaneous. 215. With few exceptions the specimens were collected in the vicinity of Riegelsville.

D.S.W. BUSHNELL, now residing in Peking, China, possesses a collection of Chinese, Japanese, and Corean coins, mainly ancient, consisting of 3,000 varieties.

Mr. CHARLES A. PERKINS, of Wakefield, Massachusetts, is the owner of an extensive and representative series of Massachusetts antiquities, found for the greater part, by himself in Middlesex county.

A SERIES of stone implements, clay vessels, pipes, mortars, ollas, etc., from the shell heaps and burial places of the Pacific coast, is owned by Mr. Horatio N. Rust, of South Pasadena, Cal.

MR. F. S. PERKINS has sold his large collection of copper relics to the Museum of Natural History, at Milwaukee, Wis. Price $3,000.

CORRESPONDENCE.

THE PRE-ADAMITE TRACK.

To the Editor American Antiquarian:

In the last issue of your always deeply interesting and instructiv journal, I read an article from the pen of Mr. Flint, which arous some thoughts to which I now take the liberty of giving free e pression.

It appears that Mr. Flint, among some really valuable discove ies, came across what he believed to be two impressions of the hu man foot on a rock in Nicaragua. Finding that the rock containe fossils of a remote era, he has assigned the origin of the "imprints to a "date" ranging anywhere from 50,000 to 200,000 years ago.

Now, what I desire to say is, that it appears to me to be an erro to assume that "footprints" found on the surface of rocks are a old as the fossils beneath. Some of the so-called pre-Adami tracks are manifestly the work of sculptors, and utterly useless a data by which to calculate the antiquity of our race on this plane

That sculptors passed through Nicaragua during some period i the remote past is perfectly evident from the images which hav been found by travelers. Squier in his admirable book of trave through this region presents us with pictures of chiselled forms i stone that could only have been wrought by masters of the ar Some of the figures represent human bodies with heads of beast They are executed with marvelous skill, and nothing is clear than that those sculptors could, if they pleased, have caused th representation of a footprints on rock.

If the tracks in Nicaragua were made when the rock on whic they appear was in as soft condition as that sea beach on whic the startled Crusoe beheld the footprint, then it would be corre to attribute those "footprints in the sand of time" to som pre-Adamite wanderer. But, on the other hand, if th tracks are the work of sculptors, they were, of course, carved afte the matter in which they appear had become hard stone; and would, be absurd and misleading to say that the artist was the co temporary of the fossils found in the sculptured rock. Suppo we find a statue or shell clearly referable to the Tertiary p riod, would it be wise to conclude that the workman belonged t the same remote era?

I notice that your learned and ingenious correspondent speak about writings which he has observed on the roofs of caves in th same section of country as that to which the "footprints" belon It is highly probable that those who carved the tracks also cut th

inscriptions. Bradford says: "The most singular of these sculptors [he is telling about the imprints of feet observed in Asia and America] has been discovered on the banks of the Mississippi, near St. Louis. This is a tabular mass of lime stone bearing the impression of two human feet. The rock is compact limestone of grayish-blue color, containing the encrinite, echinite, and other fossils. The feet are quite flattened, but the muscular marks are delineated with great precision. Immediately before the feet lies a *scroll* sculptured in similar style. "The opinion sometimes entertained, that these are actual impressions of the human feet, made upon a soft substance subsequently indurated, is incorrect; on the contrary, they are undoubtedly the result of art."—*Am. Antiquities, p. 25.*

On the other hand Priest in his work on "American Antiquities" takes substantially the same ground as Mr. Flint. He says, [speaking of the impressions at St. Louis,] "Directly before the prints of these feet, within a few inches, is a well impressed and deep mark, having some resemblance to a scroll, or roll of parchment, two feet long, by a foot in width. To account for these appearances, two theories are advanced; one is, that they were sculptured there by the ancient nations; the other that they were impressed there at a time when the rock was in a plastic state; both theories have their difficulties, but we incline to the latter, because the impressions are strikingly natural, and Mr. Schoolcraft, exhibiting even the muscular marks of the foot, with great precision and faithfulness to nature, and, on this account, weakens, in his opinion, the doctrine of their being sculptured by the ancient nations. But why there are no others going to and from these, is unaccountable, unless we may suppose the rest of this rock, at that time, was buried by earth, brush, grass, or some kind of covering. If they were sculptured, why not other specimens appear; this one isolated effort of the kind, would seem unnatural.—See the plate which is a true facsimile of those tracks."—*pp. 153 and 154.*

Why doesn't Mr. Priest give us a dozen pictures of the rock at St. Louis? His answer is, because *one* drawing suffices; and in like manner, a single pair of sculptured "imprints" of feet—indicating that certain people had passed that way—served even better than a great number. A multitude of tracks might possibly be mistaken for genuine impressions of the feet of wayfarers belonging to a remote epoch; but a single isolated pair with no trail leading to or from them could not but arrest attention. The perfection of the workmanship merely demonstrates the skill of the artist. And what about the carved scroll? Is it too a fossil? If so it may be a leaf out of the pre-Adamite library.

On page 151 of his profound work, Mr. Priest says: "A few miles south of Braystown, which is at the head waters of the Tennessee river, are found impressed on the surface of the solid rock, a great number of tracks, as turkeys, bears, horses, and human beings, as perfect as they could be made on snow or sand. The human tracks are remarkable for having uniformly six toes each, like

the Anakims of Scripture; one only excepted, which appears to be the print of a negro's foot. One, among those tracks, is distinguished from the rest, by its monstrousness, being of no less dimensions than sixteen inches in length, across the toes thirteen inches, behind the toes, where the foot narrows toward the instep, seven inches, and the heel ball five inches."

We can produce no such feet now-a-days. What becomes of the doctrine of evolution in the light of this revelation? Think of feet sixteen inches in length, and bodies and brains in proportion! But I take refuge in the belief that the "imprints" are all carved. True, in Tennessee as in Nicaragua, the tracks of animals are represented. But we know for a fact that the tracks of turkeys, for instance, have been found upon the precipitous rocks, and on the sides of caves. Are we to suppose that the gobblers actually walked up the cliffs at a time when the substance of which the rocks are composed was in a plastic state? And if certain people went to the trouble of representing turkey tracks and letters on vertical rocks, may they not have carved similar impressions and a scroll upon level stones?

Mr. Priest informs us that in addition to the feet of turkeys are those of "bears, horses and human beings." Was it a circus?

"That these are the real tracks of the animals they represent, appears from the circumstance of this horse's foot having slipped several inches, and recovered again; the figures have all the same direction, like the trail of a company on a journey." In must have astonished the natives.

It is interesting to be assured that there were horses in America away back in ancient times. This supports the Danish legend about Bjorn Asbjorndson having been seen on horseback by Snorre Sturluson. Moreover, the exiled chief was in command of a troop of horse. And in support of this view we have Priest's testimony: "One also among the tracks of the animals, is distinguished for its great size; it is the track of a horse, measuring eight by ten inches; perhaps the horse which the great warrior led when passing this mountain with his army."

You will note that this hero, whose foot was sixteen inches long, *led* his horse while crossing the mountain. Had he mounted the animal it would probably have gone rignt through the crust of the earth. Fortunately the immensity of the hoofs of this horse which so admirably matched its master, sustained it above ground while traveling with the show.

The horse was a genuine curiosity. Hoofs ten inches long! It was the only horse in the company, but in quality it atoned for quantity. Mr. Priest even endeavors to belittle it, so anxious is he not to offend our prejudices on the subject of natural history. But let the full truth be told. The track left by the horse is several inches over the ten just mentioned! We are informed that the foot "slipped several inches and recovered again." How does any one know that it slipped? Isn't the track of the monster at least thirteen inches long? What kind of a horse have we here?

Mr. Priest next tells us about the mountains of South America, on whose smooth and perpendicular sides "are engraven [mark the word], at a surprising distance from the base, the figures of animals; also the sun, moon and stars, with other hieroglyphic signs." The thoughtful author concludes that "the stones were once so soft and plastic, that men could easily trace marks on them with their fingers, or with sticks!"

Isn't it much more likely that the sun, moon and stars passed that way, during the procession of the equinox, and left those impressions of their visit on the towering cliffs? To concede that they are mere sculptures opens the door to a world of possibilities which we will not contemplate.

Cannot the slab of Nicaragua be removed north? It is really an interesting object whether viewed as the work of man's hands or feet. Connected with it there is an amazing story.

A. Mc A.

BIRD TOTEMS OR AMULETS.

Editor American Antiquarian:

In most parts of the United States occur the curious stone relics known as bird totems, or amulets. The first term is sufficiently descriptive for most of them, but hardly applies to all. Some are nearly straight, with a slight elevation at either end and in the country; others add to this projecting or depressed ears on either side of the head. The extreme form is reached when the body is flat and depressed, and the ears very large and button-like, with a base somewhat different from the typical form. A few are notched along the edges, as though for some record, and all those which are finished have a hole at each end of the base. Generally they are of green striped slate, but the broadest specimens I have seen are of fine mottled stone.

They are often classed among the relics of mound builders, but some of the best authorities assert that they are never found in mounds, while they are frequent in many parts where the mound builders never dwelt. I have seen as many from a limited area in New York as would be found in the same space in the most densely populated mound building region, and they occur on our undisputed Indian sites both in New York and New England. The total number of these "saddle-shaped birds" known in Ohio in 1876, was thirteen, but many must have been in unknown private hands. From Onondaga county, N. Y., and its immediate vicinity, I have seen twenty specimens representing the most extreme forms. One of these was worn by an Onondaga Indian girl, on a kind of necklace. There was a secondary perforation through the body near one end, and she had passed a string through this. It is the only instance in which I have seen one in actual use.

With but three exceptions our local specimens have been some-

what bird shaped; these three having the usual basal perforation but lacking both head and tail. They are very slightly raised at the ends. All are of striped slate, with one exception of a remarkable character. All but two or three have the base plain or very slightly rounded. Those which differ are indented near the ends, these projecting and not quite meeting around the perforations. Several have fine notches along the edges, but this seems a secondary use, most of such specimens having been broken.

The use of mottled stone seems to have been more frequent elsewhere. One such was found on Lake Champlain, and I have seen several in Michigan. Two of these, belonging to W. L. Coffinberry, of Grand Rapids, Michigan, are worthy of mention, both being of mottled stone. The first is of simple bird form, but somewhat elevated in the middle of the back. The other so closely resembles one found on Seneca river, N. Y., in material and form, as to make it probable it was made by the same hand. The material is a fine grained black and yellow stone; the head is somewhat like a dog's, with very large projecting ears; the body is broad and depressed; the base is not a plane, but with projecting ends; the Michigan specimen has a contracting, and the New York relic an expanding tail; in both the terminal basal perforations are not entirely surrounded by stone. These are all I have seen of this extreme form.

What were the uses of these singular articles? The replies have been various. The idea that they were made for corn husking is plainly untenable, not only because so much care would not have been bestowed on an article for this purpose, but because some of them could not have been used in this way. The simple bird form might have been, but the broader forms with their large ears, could scarcely have been so used, and it is evident that the straight forms never were. The idea that they were placed on the prows of canoes seems but a fancy. The straight forms are not sufficiently ornamental, and the perforations of the broader kinds would have been useless for such a purpose. It may be superfluous to say that they often occur at a distance from any place where canoes would have been employed. The idea that they were worn by women to indicate approaching maternity, seems to me also but a fancy. They are too few in number to show any fashion of this kind, and Indian women are as sure to follow fashion as their civilized sisters. Some have thought that the sitting bird signified a brooding over the embryo life, but all articles of this kind do not suggest the bird. The straight forms have not a hint of it, and some of those with ears are much more like a couching quadruped. Facts seem against this theory.

There is another, which I believe has not yet been suggested, which became almost a conviction in my mind, when looking over the article on "Zuni Fetiches," by Frank H. Cushing. Were not these some of the fetiches of the hunter tribes of the East? Their ornamental material, carefully wrought forms, and wide distribution would then be explained, as well as one peculiarity of their

construction: that of the terminal perforations. In most cases these might have been used in binding them to anything, but where they are not entirely enclosed this could not have been the case. Bind arrows or other articles to them, as the Zunis do, and the cord passed through the perforations cannot slip, even where the hole is marginal. I can conceive of no use for these marginal holes, except that of binding something to the back of the figure, and how easily this may be done, is readily seen.

In the absence of positive evidence of their use, and considering them as a class, it appears reasonable to me to turn to the analagous case of the Zuni fetiches, with their appendages, and give them a sacred character. They differ widely from those represented by Mr. Cushing, and yet the general likeness is clear. Indeed it becomes striking in his figure of the god of the lower regions, see plate ix. Among our Indians the elaborate forms could belong only to the chief men, and would be rare. It does not seem improbable to me that the simpler perforated tablets, sometimes called gorgets, might have had a similar use for those who were poorer. This also would account for their ornamental material and very slight wear.

W. M. BEAUCHAMP.

EDITORIAL.

A REVIEW OF THE YEAR.

The year 1885 has been marked with considerable progress in Archæology. In America we have four special organizations at work: the Bureau of Ethnology, the Peabody Museum, the American Antiquarian Society, the Archæological Institute of America. There are also several societies, which have Archæological departments connected with them. Among these we may mention the Anthropological Society of Washington, the Academies of Science at Philadelphia and Davenport, the Natural History Societies of Cincinnati and Boston, the American Philosophical Society, the Wyoming Historical Society, the Numismatic and Antiquarian Societies at Philadelphia, Boston, New York and Montreal, the Brooklyn, Ohio, Natural History Society, recently organized, the Northern Ohio Historical Society, the Essex Institute of Salem, Mass., the Anthropological Section of the A. A. A. S. These have all published upon Archæology; some of them quite extensively.

A few other societies have had papers read, but for various reasons the publication of the papers has been delayed *e.g.* the Wisconsin Academy of Science, Arts, and Letters, with its transactions three or four years behind time.

The Ethnological Bureau has been accumulating a great amount

of material; the report of which is about to appear and will be a very interesting one. The chief of the Bureau, Maj. J.W. Powell, has been undergoing an ordeal in connection with the geological survey, but has answered all charges and come out free from reproach, and will probably stand higher than ever as an organizer and director. The Ethnological Bureau as now constituted is under the direction of the Smithsonian Institute, but is nevertheless dependent upon the government for appropriations; there are now several departments under full headway, all doing good work: First, Linguistics, with A. S. Gatchet and J. O. Dorsey, chief workers; Second, Sign Language, Col. Garrick Mallory and Dr. W. J. Hoffman; Third, Native Myths and Traditions, Rev. J. O. Dorsey and Dr. Washington Matthews; Fourth, Mound Explorations, Dr. Cyrus Thomas and several assistants; Fifth, Archæological Relics or Archæotechnics, W. H. Holmes; Sixth, Anthropometry, Dr. W. C. Fletcher; Seventh, Ethnography and Anthropology in general, Maj. J. W. Powell, chief of the Bureau. This division we have given ourselves, not knowing the especial classification of work which has been adopted. The Smithsonian Institute has also a department of Archæology in which are some excellent workers; they are as follows: Pof. Otis Mason, Dr. Charles Rau and C. M. Baker.

The National Museum, also organized under the same board as the Smithsonian, has been accumulating great stores of prehistoric relics, during the past year. Mr. F. H. Cushing has been among the Zuñis collecting for the Museum and gathering further information about the customs and traditions of the people. Explorations have been conducted during the year under these societies, among the Emblematic Mounds in Wisconsin.

The Surgeon General's office has a department devoted to Anthropometry. There is a museum in it, in which the skulls and skeletons of prehistoric and native American races are gathered for the sake of comparison. This museum is now very complete and doing good work, and the collection promises to surpass even that which was gathered by S. G. Morton, M. D., now in the Academy of Science at Philadelphia.

The National Academy of Science held its last session at Albany at which time Maj. J. W. Powell read a paper on the houses of the Cliff Dwellers, Pueblocs, etc.

A new society has been established called the Women's Anthropological Society, at Washington, D. C.

Beside the societies, certain authors, editors and publishers have, during the year, furnished much valuable material. Among these we mention, especially, Dr. D. G. Brinton, whose library of Aboriginal Literature has now reached its fifth or sixth volume. Mr. E. A. Allen has also published, as a subscription book, a valuable summary entitled Prehistoric World or Vanished Races. G. P. Putnam's Sons have published two volumes; Prehistoric America, by the Marquis De Nadaillac, 1884, and The Lenape Stone, or the Indian and the Mammoth, by H. C. Meyers, Charles Scribner's

Sons, the Native Religions of Mexico and Peru, by Albert Reville, D. D., (1884), Houghton, Mifflin & Co., Paradise Found, by William F. Warren, S. T. D, also L. R. Hammersly & Co., Indian Sign Language by W. P. Clark; Houghton, Mifflin & Co., Algonquin Legends of New England, by Charles G. Leland. The "Hawkeye," at Burlington, Iowa, has published a Catalogue of the Collections of the National Museum at Mexico, by W. W. Blake.

Many reprints have also appeared; among them are pamphlets from the proceedings of the U.S. Museum, from the Philosophical Society at Philadelphia, from the American Naturalist, and from the American Antiquarian. The authors who have contributed the most numerous pamphlets of this kind, are Dr. D. G. Brinton, Porf. Otis Mason, Dr. W. J. Hoffman, W. H. Holmes, Dr. Cyrus Thomas, Rev. M. Eells and Rev. S. D. Peet.

Several journals have published quite extensively on the subject; among these, chief is the AMERICAN ANTIQUARIAN; next to it we would mention the *American Naturalist*, *The Kansas City Review*, *The Popular Science Monthly*, *The Canadian Record of Science*, *The Iowa Historical Record*, *The Canadian Antiquarian* and *Numismatic Journal*, the journal of the *Natural History Society* of Cincinnati, the *Journal of the Archæological Institute* at Baltimore, which treats mainly of classical Archæology but has an American department, "Science" and the Amateur Journal called the *Hoosier Mineralogist and Archæologist* and several others. Two journals have been suspended during the year; the *Museum* which promised to be a very valuable amateur journal, now merged into the *American Antiquarian* and the *Young Mineralogist* and *Antiquarian* formerly published at Wheaton, Illinois. *Science*, which was formerly published at Boston, and which, during the first year, contained much that was valuable on archæology, has been moved to New York, having changed some of the distinguishing peculiarities, and dropped apparently its Washington correspondence. The Kansas City *Review* is no longer under the charge of Dr. Theo. S. Case but is edited by Mr. Warren Watson; it is enlarged and is of a popular character. The *North American Review*, which published Charney's articles in 1880, has published this year an article by Prof S. C. Bartlett, entitled "The Subterranean History of Man." The *Overland Monthly* has had occasionally, articles on archæology in a general way and is valuable on account of its proximity to Mexico and the early Spanish settlements. The *Magazine of American History* has during the year treated on the subject, especially from the historical standpoint; the most notable article being one by Mr. M. V. Moore on the topic "Did the Romans colonize America?" The *Magazine of Western History* has the following titles "Indian Geographical names by Russell Everet. The identity and history of the Shawnee Indians," by C. C. Royce, "The Six Nations," by Daniel Sherman, "The Indian War," by Alfred Matthews, "Among the Octhipwees," by Colonel

Charles Whittlesey, "Man in the Glacial Period" by Frederick G. Wright. The magazine itself is in danger of being wrecked on the shoals which have injured so many local histories, shallow schemes for making money, but the contributions on Indian Geography and history have been valuable. We understand that the publishers have not been careful in regarding the rights of authors, but have printed summaries of new books without consent and without giving credit. The *Century Magazine* has contained some articles on Archæology during the year; notably, "The Great Alaska River," by Lieut. Schwatka, and "An Artist amongst the Indians," by George de Forrest Bush, splendidly illustrated. The November number contains "Photographic Visits to Petra," by Edward L. Wilson.

The authors who have contributed to the American Antiquarian during the year, are as follows: Hon. Horatio Hale, "The Iroquois Sacrifice of the White Dog," Rev. W. M. Beauchamp, the same subject, L. P. Gratacap, two papers on Antiquities of Mexico and Central America," Dr. Cyrus Thomas three papers, on "Works of the Mound Builders" Hon. Gordon Wm. Lillie, "The Pawnee Indians;" A. E. Douglass, two papers, "Shell Mounds in Florida;" Rev. J. O. Dorsey "Siouan Folk-Lore and Mythology;" Dr. D. G. Brinton, "Chief God of the Algonkins," "Taensa Grammar;" S. D. Peet, "Emblematic Mounds," two papers, "Native American Symbolism," two papers; Amos W. Butler, "The Sacrificial stone on San Jaun;" Dr. W. Matthews, "A Navajo Myth.

The correspondents are the following: G. C. Broadhead, "Bangs;" Wm. F. Clark, "Ancient Dams;" A. F. Berlin, "Copper Relics;" J. P. McLean, "The Great Serpent;" Dr. Carl Flint, "Human Footprints;" S. H. Binkley, "Antiquities of Ohio;" Dr. Cyrus Thomas, "Mounds in Iowa;" E. A. Hodge, "Antiquities of the Wabash river;" E. A. Allen, "Sun Symbol;" E. R. Nissley, "Relics in Indiana;" C. Whittlesey, "Ancestor Posts;" G. A. Laidlaw, "Gambling;" besides these Dr. D. G. Brinton, A. S. Gatschet, have furnished notes on "American Linguistics," E. A. Barber, on relics and Henry Phillips Jr., on European relics; *Twenty-five writers on Ameriaan subjects.* The writers who have furnished contributions to the *American Naturalist* are as follows: E. Lewis Sturteyvant, "Indian Com," and "Kitchen Garden Esculents," two articles; A. S. Packard, "The Labrador Eskimos;" J. O. Dorsey, "War Customs of the Kansas;" Dr. C. C. Abbot, "Copper among the Delawares;" A. C. Lawson, "Rock Inscriptions;" M. de la Barcena, "Human Remains in Mexico;" W. Matthews, "Mythic Dry Paintings of the Navajoes;" J. T. Campbell, "Prehistoric man on the Wabash;" "Iconoclasm in Mexico," W. H. Holmes; *nine* contributors in all.

The gentlemen who have contributed to the societies have already been mentioned; W. H. Holmes, "Description of the Art forms in the Davenport Academy" "Antiquity of Man in Mexico;" Dr. D. G. Briton, "The Lineal Manners," Acad. Sc., Philadelphia,

"American Languages," Penn. Hist. Society. S. D. Peet, "Emblematic Mounds" Wis. Acad. Sc. F. W. Putnam, Natural History Society of Boston; Titles not at hand. Harrison Wright, Ph. D., Report of the Wyoming Historical society.

Many newspaper articles have appeared during the year. among these one by Rev. Stephen Bowers in the Ventura *Free Press*, on a find of baskets near Santa Barbara. Mr. W. H. Binkley has published several articles in *The Interior Monthly*, Dayton, Ohio, entitled "The Archæological Survey." The *Fork Deer Blade*, Jackson, Tenn., has a poem by L. A. Palmer, entitled, "A Legend of the Dakotah Indians respecting Spirit Lake." The Milwaukee *Sentinel* has published correspondence about the "Elephant Mound" and the discovery of Effigy Mounds. The paper at Lake Mills, Wisconsin, has had articles upon the mounds at Lake Ripley and Aztelan, written by William Porter. Newspapers do not really preserve information and we refer to these because especial pains have been taken to forward copies to us. If editors generally would send us excerpts more extensively, we should be able to make a better annual record and give the credit to the papers which publish upon this subject.

The discoveries which have been made are not numerous; perhaps the most interesting is that described by Mr. Wm. H. Holmes, "Evidences of the antiquity of man on the site of Mexico." Excavations have been made by the railroads and eight vertical layers have been traced; undisturbed fragments of pottery have been exhumed, and the different stages of culture, if not different ages, have been identified. The Fossil Skull described by Sr. Barcena is interesting. The human foot prints discovered in Nicaragua, do not turn out to be so ancient as at first supposed. Dr. Earl Flint candidly acknowledges this and corrects the impressions. Discoveries have been made among the Emblematic Mounds, by the editor of this journal. Among these we may mention the existence of certain village sites, game drives, garden beds, and groups of effigies, which have not heretofore been described. The most important discovery is that of a battle field near Sextonville, Wisconsin, where are the walls for defense and the mounds for burial and other interesting works.

The sensation of the year has been the one made by W. H. Henshaw in his attack upon the finds made by Rev. Mr. Gass, and the members of the Davenport Academy of Science, in the second annual report of the Bureau of Ethnology. Mr. Henshaw, weakened his argument by many failures in identifying the animal figures contained in the pipes, and mistakes in reference to the animals represented, and especially by the carelessness in his quotations and statements. Still the sequel may prove that a fraud has been committed. We have it on the authority of Mr. A. F. Berlin, that relics have come into his hands by exchange, which were made from white marble, covered with a lead colored paint which has worn off. These pipes were taken in exchange with Rev. Mr. Gass, who claimed that they were taken from mounds. Mr.

Gass is now living in Minnesota, and has an excellent record as a citizen and clergyman; but the repeated suspicion of fraud which has been raised in connection with his labors, will have a tendency to throw doubt upon the genuineness of the tablets and pipes which were discovered by him. There is a mystery about the whole matter which has not been cleared up.

NOTES ON EUROPEAN ARCHÆOLOGY.

BY HENRY PHILLIPS, JR.

LAST year was a tolerably productive one for the collectors of prehistoric remains in Switzerland. The water of the lakes was almost constantly below the highest level, which is the most favorable state for exploration among the lake dwellings. The remains discovered belong chiefly to the Bronze period, and the main localities in which they were found were Lake Neuchatel and the settlement of Wallishofen near Zürich, the latter of which is the only station of the Bronze period yet known in Eastern Switzerland. Among the most remarkable articles discovered at this settlement in 1884, were a splendidly preserved bronze sword, several dozens of bronze hatchets, bracelets, etc. Of the remains of the Stone period discovered in the same year the most notable are those obtained at Robenhausen, including several pretty knife-handles made of yew, some excellent specimens of mechanical industry, such as thread, woven fabrics, fishing-nets, etc., and ears of barley and wheat, one being a specimen of the rare Triticum turgidum. —*Nature*, Vol. XXXII, No. 813.

BY ORDERS of the Archæological Commission of the Canton Wallis, explorations at Martinach (the Roman Octodurum) have been going on for a long while with profitable results. Among the discoveries are the remains of a Roman Amphitheatre, a Roman Christian Church (A. D. 347) as well as tiles, vases, marbles, coins, (mainly Constantine and Constans) Bronze statues, etc.—*Antiq.* No. 1, of 1885.

TWO SKULLS, pieces of broken pottery and handsomely worked stone chisels, were lately found in a grave at Kirchheim in E. (Pfaltz)—*Antiq.* 5 of 1885.

OWING to a very low condition of the waters in the *Pfäffikersee* towards the end of 1884 many interesting lacus trine explorations at Robenhausen were advantageously carried on. Among the objects found were specimens of the *Trapa natans*, *Triticum vulgare antiquatum*, *Triticum turgidum*, (said to be extremely rare) and *Chenopodium*; also a very fine net of strings, of large meshes, fastened with a knot, a stick of fir passing through a number of linden rings, a serpentine hammer bored through from each

side, but in which the holes failed to meet each other.—*Antiq.*, No. 1, 1885.

IN MARCH, 1885, a quantity of Roman and pre-Roman remains were found at Breca, near Misoco, near the Bernardinreberg, among which were bronze pins in clothing, bracelets, one round iron ring 4 centim. in diameter, a lance point, an iron dirk knife, a small grayish-brown drinking vessel, a clay urn, some bronze coins of Hadrian, and a fragment of unburned bone.—*Antiq.*, 5, of 1885.

ON DECEMBER 9, 1884, a Burgundian burial ground near St. Blaise was opened, wherein fifteen skeletons arranged in two long rows from East to West were found, together with bronze and iron objects. The bodies were in wooden coffins, as was shown by the wooden fragments that lay about them.—*Antiq.*, No. 1, of 1885.

AT THE 15th assemblage of the German Anthropological Association held at Breslau, August, 1884, Dr. Albrecht, of Brussels, made three communications, among which was one on the greater-than-modern length of the second toe among the Ancient Greeks, in which he differed from the views previously given of Prof. Schaffhausen as to the reason, pointing out that modern sculptors followed the Greek model and so fell into fault.

AT THE same time Prof. Schadenberg presented a communication on the ethnology of the Phillippian Islands, in which he mentions that the inhabitants confine their worship to the full-moon. Dr. Schliemann made an address on the excavations at Tiryns; Dr. von Török on new anthropological researches in Hungary, in which he stated that as yet no traces of diluvian man had been found in Hungary, although Dr. Roth, led by his discoveries in the cavern of O'-Ruzsin, at one time seemed to think otherwise; the same distinguished professor read a paper on the Cranium-type of the Magyars; Dr. Szulc on the original race dwelling between Weichsel and Elbe.

A MEMOIR on two Etruscan Stelæ read May 17, 1885, before the R. Accademia dei Lincei by G. Gozzadini will be published by the society in full.

SIGNOR FLORELLA presented at the same meeting a memoir on the progress of discoveries of antiquities in Italy during April, 1885, comprising Roman walls, inscriptions, sepulchers, statues, etc.

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NOTES ON ARCHÆOLOGY.

BY THE EDITOR IN-CHIEF.

THE WALL OF HADRIAN, which stretches from the estuary of the Tyne to the waters of the Solway Frith, is one of the grandest monuments of the Roman occupation remaining in England. The discoveries that have been made during explorations of the wall at various times have been described by Dr. Bruce in the pages of his little guide-book with a minuteness perhaps scarcely

to be expected in a work of this character. This great fortification consists of three parts: 1, A stone wall with a ditch on its northern side; 2, An earth wall, or vallum, south of the stone wall; 3, Stations, castles, watch-towers, and roads for the accommodation of the soldiery who manned the wall and for the transmission of military stores. These lie, for the most part, between the stone wall and the earthen lines. The whole of the works extend from one side of the island to the other in a nearly direct line, and in comparatively close companionship. The stone wall and earthen rampart are generally within sixty or eighty yards of each other. The distance between them, however, as Dr. Bruce tells us, varies according to the nature of the country. In one instance they approach within thirty yards of each other, while in another they are half a mile apart. Both works are, however, so arranged as to afford each other the greatest amount of support which the country affords. The earth wall falls short of the distance about three miles at each end; not extending beyond Newcastle on the east and Dykesfield on the west.

At distances along the line, which average nearly four miles, stationary camps were erected. These stations were little military cities, suited for the residence of the chief who commanded the district, and provided secure lodgement for the powerful body of soldiery he had under him. All the stations seem to have been provided, after the usual method of Roman castramentation, with at least four gateways; and in some of the best preserved stations, the main streets leading from the four gateways, and crossing each other at right angles, may be discerned. In the course of excavations which have at different times been carried out during surveys of the wall, or in digging in its vicinity, numerous antiquities have been found; the most important being altars, dedicatory slabs, and centurial stones. Many of the objects are depicted in the pages of the work before us. At the station of Castlesteads several valuable altars and other antiquities have been found, most of which have been carefully preserved on the spot by the present proprietor, Mr. George J. Johnson. The most remarkable of these is the altar of Jupiter. Two other figures were found at this spot—one representing Fortune, and the other a priest vested in his cape, and holding an incense box in his hand.—*Walford's Antiquarian, Sept.* 1885.

WERE THERE ANIMAL TRIBES IN ENGLAND?—Rev. Dr. Cox recently delivered before the Royal Archæological Institute of Great Britian an essay on "Derbyshire Place-Names," a subject to which he had devoted many years of labor. He showed in detail how these illustrated the periods of the Celts and the Britons, and of the Roman occupation of the island. When the lead mines of Derbyshire were in high repute, and threw light on the Saxon era and on the advent of Danish and Norwegian settlers, as well as of the Normans; how the terminations and prefixes of most names within the county indicated the habits, domestic or predatory, of the inhabitants, and how especially rich Derbyshire was in places named from animals, wild and tame, forest trees and other productions, many coming from the swan, the badger, the deer, the hound, and even from domestic fowls, and from the ash, oak and birch trees.—*Ibid.*

MR. R. S. POOLE, as Hon. Secretary of the Egypt Exploration Fund, has stated that the exploration of the site of Naukratis was now practically complete. Forty-two cases of antiquities were now on their way home, and many of them probably would go to the British Museum Six important inscriptions had been found, the site of various temples had been established, and an enormous quantity of Fragments of early pottery, identical in style with that found at Rhodes, had been discovered. The inscribed handles of Amphoræ were especially important as evidence of trade routes. Another important find had been made of about 500 weights of all the standards in use at Naukratis.

RECENT excavations in the vicinity of the Via Nolana, at Pompeii, have led to the discovery of some wall paintings representing banquet scenes of the luxurious Romans. A curious feature is the delineation of one of the guests who has withdrawn for the purpose of employing the peacock feather, which the gluttonous Romans usually brought with them to *recherche* banquets, and

the use of which is well known to scholars. Inscriptions above the figures are intended to convey hints of the conversation.—*Ibid.*

ACCORDING to the academy, an interesting discovery has lately been made at Sidon. Some natives who were excavating for stone, after penetrating through the alluvial soil, dug through a deposit of blown sand, six metres in depth, below which they found a stratum of earth containing flint implements, fragments of coarse red pottery and other objects, among which a clay whistle may be noted. It is clear, therefore, that the phœnician city of Sidon was preceded by an older settlement whose inhabitants were still in the stone age Flint flakes and implements, it will be remembered, have already been found in the vicinity of Dog river, north of Beyrout.—*Ibid.*

AN ANTIQUARIAN discovery has been lately made in a field near Dumferline, in the shape of tumuli of extensive dimensions. Some masons were digging for sand in the vicinity, when tumuli were come upon. Already four cists with a large quantity of implements of the stone age, and not less than 2000 years old have been turned up. The urns were three feet six inches in length, by one foot six inches in breadth, and about ten inches in depth. They were all filled with black mould, in which was a clay urn about five inches in depth and about twenty inches in circumference. There were also flint flakes, arrow heads, pestles and other implements inside cists or near them. The work of excavation will now probably be carried on under the supervision of a gentleman representing the Scottish Society of Antiquaries.

SOME remarkable excavations are being carried on near Carthage. It is confidently asserted that the remains of a large basilica of the 3rd century have been found, and Pere Dellattre has sent to the Minister of Public Instruction a catalogue of the objects of interest brought to light in the course of 1884, including about 300 inscriptions which have been reproduced in fac-simile. There have been found in all 1924 fragments of inscriptions, of which one is Punic, and bears on it only the words "the sanctuary;" eight Greek, and all the rest are Latin, with Christian inscriptions. Four of these bear the word "bishop," others "priest," one "deacon," and another "reader," (lector). Further works in the way of digging have brought to light a variety of sarcophagi, statues whole or in fragments, monumental mosaics, christian lamps, and coins of Rome and Byzantium.—*Ibid.*

ARCHÆOLOGY SEVENTY-FIVE YEARS AGO.—A report of the American Philosophical Society just issued (Vol. XXII, No. 119.) teaches one thing at least, that interest in archæology is not confined to our days. There were students in the department as early as 1790, and very considerable attention was given to it from that time on. There were many contemporaneous scholars and many letters were written and papers read at that time which now have very great value. Some of the most prominent names in American history are found on the committees or affixed to the reports on American antiquities, such as Jefferson, Bartram, Peale, Keating, Maj. Long, Barton, Cutler, De Ponceau, Latrobe, Turner, Wistar, Heckewelder, Adrian, Lewis, Brackenbridge. Among the subjects which came up for discussion and action, with the dates affixed at which they were considered are the following: Mr. Heart's letter giving an account and a great variety of particulars of the western country, 1792, Feb. 3. Indian figures at the mouth of Indian creek, 1792, Oct. 19. Rev. Mr. Cutler's letter about the ancient Muskingum forts. Specimens of Indian picture writing by Dr. Barton, 1797. Barton's new views of the origin of the nations of America, July 21, 1797. Rules for the proposed permanent antiquarian committee: Some interesting ceremonies among the Naudowessi Indians, by W. S. Hutchinson. Brackenbridge's letters to Jefferson giving his ideas of the tumuli and population of the aborigines of N. A., 1813. On the ancient languages of America, by Mr. Rafinesque, 1826. Catalogue of Mexican minerals and antiquities, by Mr. Keating and Mr. Poinsett. Adelung's Mithridates, etc. There are reports of the finding of a wall in North Carolina of ancient earthworks opposite the mouth of the Scioto; specimens of Indian antiquities, mastodon bones in N. Y., O., and Ky., etc.

NOTES ON AMERICAN ETHNOLOGY.

BY D. G. BRINTON, M. D.

THE ART OF ANCIENT YUCATAN.—I recently passed an evening with Dr. and Mrs. Le Plongeon, who after twelve years spent in exploring the ruined cities of Yucatan and studying the modern and ancient Maya language and character, are passing a few months in this country. The evening was passed in looking at photographs of the remains of architectural and plastic art, in examining tracings and squeezes from the walls of the buildings, in studying the accurate plans and measurements made by the Doctor and his wife of these structures, in reviewing a small but exceedingly choice collection of relics, and in listening to the Doctor's explanation of the Maya hieroglyphic system. Whatever opinion one may entertain of the analogies which the Doctor thinks he has discovered between Maya culture and language and those of Asia and Africa, no one who, as I had the privilege of doing, goes over the actual products of his labors and those of his accomplished wife, can doubt the magnitude of his discoveries and the new and valuable light they throw upon ancient Maya civilization. They correct in various instances the hasty deductions of Charnay, and they prove that buried under the tropical growth of the Yucatan forests still remain monuments of art that would surprise the world were they exhumed and rendered accessible to students.

TEN KATE'S ETHNOGRAPHIC OBSERVATIONS.—Most readers interested in the subject heard of the Dutch traveler, Dr. H. F. C. Ten Kate, who made an ethnological and archæological journey through the states of New Mexico, Arizona, and adjacent regions, a few years ago. His book of travels entitled *Reizen en Onderzoekingen in Nord-America*, has just appeared at Leyden. It has a map and two ethnographic plates, the latter devoted to the Indian races and their remains. He thinks that the tribes he visited can be divided ethnographically into five sharply distinguished types, all belonging to what he calls the Mongolian division of the human race, this broad term including both the Mongolians and the Malayo-Polynesian varieties. He does not think the Pueblo Indians ethnologically related to the Aztec tribes, but to represent an older type, affined to the oldest Mound-Builders, the most ancient Cliff-dwellers, and the tribe which constructed the Casas Grandes. These and his other interesting deductions can only be referred to here. His book should be promptly translated and republished in this country.

INSPIRATES IN AMERICAN LANGUAGES.—In his "Introduction to the study of the Indian Languages," published by the Bureau of Ethnology, Major J. W. Powell makes no mention of the class of sounds known as "inspirates." As the name denotes, they are formed by drawing in the breath instead of expelling it. We use them constantly in the clicks with which we encourage horses, and the kissing noise with which we call dogs. They abound in the language of the *Koi Koin* or Hottentots and Bushmen, some of their dialects having as many as nine distinct inspirates. In American languages they chiefly appear as nasalized inspirates. With a little practice we can readily pronounce the first syllable of the word "humble" with a nasal inspiration. Precisely this same sound of a nasal inspired resonant, *mb*, *nd*, etc. is found in the Tupi of Brazil, as in the word *mboe*, to teach, and many others. In North America the Mangue of Nicaragua and the Chapanec of Chiapas, which are related dialects, have a great number of words beginning with the same phonetic peculiarity. The Othomi of Central Mexico, a language of extremely difficult phonetics, seems in part made up of inspired sounds, which will explain its marked obscurity to the European ear. Those who have opportunity should note whether this peculiarity does not also obtain among the clicks and gutturals of the northwestern dialects.

MEXICAN MOSAICS.—It is gratifying to learn that the artistic culture of the ancient Mexicans is to be vindicated against its depreciators of the Wilson-Morgan school of writers by the proofs from existing remains. Herr Strebel of Hamburg, whose collection I examined two years ago and which contains some

of the most remarkable Mexican art products in existence, has commenced the publication of a full descriptive illustrated catalogue of its contents. The National Museum at Rome contains four specimens of Mexican mosaic work, two of them masks and two recumbent figures. Professor Pignorini announces that he is about to publish chromo-lithographs of these with a full description. Three fine specimens of this native Mexican mosaic work exist in the Royal Ethnographic Museum at Berlin. One of these is an artificial face formed of mosaic fitting into the front of a natural skull so as to supply the place of the fleshy parts, and ingeniously to represent the features as in life. The old Spanish writers state that in Yucatan this was a custom at the death of one of their *cocomes* or lords; but heretofore no instance of it had been discovered.

THE CONTEMPORARY STONE AGE IN AMERICA,—Native American tribes, wholly uninfluenced by European civilization and still in the stone age, are too rare not to make the description on one of the highest interest. A German traveler has had the luck to find several such dwelling on the head waters of the Shingu river in the province of Matto Grosso, Brazil. They belong to several stems, some related to the Botocudus, others to the Guaranis, and one tribe, the Bakairis, showing unmistakable linguistic affinity with the far-removed nations of Guiana. Their most important tool and weapon is the stone celt, a polished piece of hard stone fastened to the end of a wooden handle. Their bows are powerful and their arrows tipped with bones or points of hard wood. The spear is unknown, but some possess a dart-thrower, similar to that formerly used in Central America. They all manfacture large and excellent earthenware vessels, and paint them in simple designs. Flutes of hollow reeds and rattles were their only musical instruments. The arts of design were represented by rude drawings of men upon the trees, and by stuffed figures representing crocodiles, lizards, and apes, these latter being placed along a road leading from one village to another; perhaps as protecting Genii. The interesting description of these primitive tribes was read before the Berliner Gesells haft fur Anthroplogie, by Herr K. Von den Steinen.

NOTES ON CLASSIC ARCHÆOLOGY.

BY PROF. A. C. MERRIAM.

THE principal results of the past season's work for the Egypt Exploration Fund is summarized as follows: (1), Discovery of the site of Naucratis and of the plan of the streets; (2), discovery of the remains of the only archaic Greek temple known in Egypt: (3), discovery of the only series of ceremonial foundation deposits yet known; (4), a large collection of archaic Greek iron tools of the sixth century B. C.; (5), a large collection of archaic Greek pottery, much of it incised with dedications of the sixth and seventh centuries B. C.; (6), the largest number of Egyptian weights yet known; (7), a series of over a thousand stamped amphora handles.

IT is reported that Mr. C. T. Newton has signified his intention of resigning at the end of this year the keepership of Greek and Roman Antiquities at the British Museum. He has been in public service for forty-five years, and seeks the repose he has so well earned. He will retain, however, his professorship of archæology at University College, London, and will still be a potent factor in the archæological world.

MR. CECIL TORR has in hand a monograph on the ancient history of Rhodes, which will shortly be issued by the Cambridge University press. There is no work at present on the subject in English, and the numerous inscriptions and other material discovered in the island within the past fifty years offer a rich field for an extremely interesting subject.

MR. R P. GREG has a series of articles in the London *Academy* of July 4th,

and 25th and Sept. 12th, on "Ancient Units of Linear Measure" in the New World as well as the Old, with some criticisms on Mr. Petrie's determinations. In the September article he says: "I have collected about 25 of the best ancient Trojan measures I can obtain from Dr. Schliemann's works on Troy, and, having reduced them to English feet and inches, I have obtained a remarkably well-marked cubit of 19.85 inches; intermediate as between Dorpfeld's (the old Assyrian cubit of 19.7 inches) and Petrie's (one belonging to the Eastern Mediteranean, of 19.96 inches, equivalent to an archaic Phœnician of 20.C). It is interesting, however, that from thirteen measures of archaic tombs at Spata in Attica, as given by Dr. Schliemann in his Troja, p, 111, I also get, very satisfactorily, a cubit of precisely the same length as this old Trojan one; and from eight measures from Tiryns (see Mycenæ Tiayns, chap. I,) also an exactly similar cubit! These buildings must date back from 800 to 1200 B.C., and are all more or less Cyclopean in their character and may all be included in the term Pelasgic. Still more interesting would appear to be the fact that from an examination of nearly seventy of the best measures given by Dr. Schliemann, taken during his excavations at the ancient Acropolis of Mycenæ, the precise same cubit of 19.85 again is clearly obtainable." He gets the same cubit also for the Phrygian and Etruscan unit, but he believes that the Hittite was one of 21 inches, derived from a Babylonian measure.

MR. J. THEODORE BENT has found some interesting remains of ancient speech in a village on the north of Carpathos in the Ægean, among them the use of a hard gamma recalling the digamma in certain words, although the dialect in general drops the ordinary gamma on every possible occasion.

EXCAVATIONS on the site of the ancient Agora at Athens are progressing, and have yielded numerous fragments. As the accumulation of ages has raised the level some 25 feet here, great expectations may be realised.

A. NAUBAUER has been making an ingenious use of bilingual inscription discovered last year at the Piræus in Greece. The inscription itself was in Greek and Phœnician, the former reading "Numenius the Kittain," the latter, "I Mahdash, son of Pen-Semlat, a man of Kition." Prof. Sayce having suggested that the Greek name Semels was probably of Phœnician origin, Naubauer connects it with this Semlet or Semelat whose male counterpart would be Semel, the word usually translated "figure," as Deut. IV: 16, where he would render, "make you a graven image, the likeness of any Semel, in the shape of male or female," thus relieving the passage of tautology, as also 2 Chronicles XXXIII:7, and Ezekiel VIII.

HERODOTUS relates that while Mardonius was wintering in Thessaly, after Xerxes had hurried back to Asia, he sent a Carian named Mys about to the various oracles of Greece, and among them that of Apollo Ptous on the shore of lake Copais in Bœotia. Three men of Thebes accompanied him to write down the answer of the god, but to their amazement the prophecy was delivered in a barbarous tongue, unknown to the Thebans; but Mys snatched the tablets from their hands and wrote down the words, declaring that they were in his own native Carian tongue. Excavations have been made on this site during the past year with good results. The temple is ascertained to be of the Doric order, about 75 by 40 feet. A number of fragments of archaic statues of great interest came to light. One was a draped figure carrying a votive inscription in archaic style, and written *boust-rophedon*, with the artist's signature incomplete. Another represented a man larger than life, presumably Apollo, closely resembling the archaic Apollos of Orchomenos, Thera and especially Tenea, and believed to be one of the most important finds of that class. A head larger than life is of very ancient style and seems to be imitated from a sculpture in wood. Several statuettes and utensils in bronze, terra-cotta, fragments of painted vases in large numbers, a hundred of which bear inscriptions, mainly votive, graved with a point, and numerous inscriptions, render the work a very satisfactory one to the French School by which it has been carried on.

NOTES FROM THE FAR EAST.

BY PROF. JOHN AVERY.

TATTOOING AMONG THE JAPANESE.—We find in the *Mittheilungen der Deutsch. Gesell. fuer Natur—und Voelkerkunde Ostasien* for May a most elaborate and valuable paper representing the results of observations made by Prof. Dr. E. Baetz on the physical characteristics of the Japanese. The principal topics treated are: the skin and hair; the weight, size and growth of the body; measurements of particular parts; a summary of results. Measurements were made in great detail—being not less than 79 in number—and on many individuals, of diverse occupations and classes in society. We extract the author's statements regarding the practice of tattooing. He tells us that until very recently tattooing was a general custom among the lower orders, and that in Tokio alone not less than 30,000 such persons might have been counted ten years ago. The decoration does not cover a small surface, as in the case of European sailors; but is generally spread over those parts ordinarily covered by clothing. The patterns are very various—dragons, comic scenes, or any thing that strikes the fancy of the individual. The work is done by special artists, with sets of needles dipped in pigment, which appears as blue or some shade of red. The process is ordinarily not very painful, since the punctures are seldom so deep as to draw blood. The workman is not a priest, nor are religious ceremonies of any sort performed at the time. The points of special interest are those in which the custom in Japan differs from that observed among ruder peoples. These are: that tattooing is not a mark of distinction; that it is not applied to the most exposed parts of the body; and that it has no connection with religion. From these facts the writer concludes that the custom as practiced in Japan was adopted by the lower classes, whose occupations compelled them to go almost naked, as a substitute for clothing; that it is of no great antiquity in that land, but was imitated from the natives of the Pacific islands, whither the Japanese were accustomed to go on trading voyages near the close of the 16th century. The theory of a substitute for clothing finds some support in the fact often related by travelers that an elaborate tattoo relieves the impression of nakedness, giving the individual the appearance of being clad in fine gauze. The Japanese themselves are unable to give any very intelligent account either of the ground of the custom or the time of its introduction. To them it is simply "the fashion," and, as they conjecture, came originally from China, to which land they owe so many other features of their civilization, and where the accounts state that tattooing was in vogue not less than 3000 years ago. Of course it does not escape our thought that the theory which best meets the facts of tattooing in modern times may not equally well suit the facts in the early stages of its practice. Both the grounds and the application of customs are liable to change from age to age; and it is possible that, could we know more of the primitive history of Japan, we should find picture-writing on the body already practiced by its savage inhabitants, and for the same reasons as by other uncivilized tribes. We may add that the custom is now forbidden by government, seemingly on the view that its observance is an evidence of surviving barbarism and unbecoming to a progressive age.

THE LEPCHAS OF SIKKIM.—Of the numerous tribes of aboriginal people who lead a precarious existence in the narrow valleys and along the steep declivities of the Himalaya, none, perhaps, has made so pleasant an impression upon travelers as the Lepchas. They call themselves Rong, and the name by which they are better known was given them by the Gurkhas, the ruling people of Nepal. They number not more than seven or eight thousand, according to the most recent estimates, and have occupied nearly their present seats since the acquaintance of Europeans with these regions.

The Mongolian type of form and feature, which is clearly stamped upon their persons, connects them with the people beyond the snowy range; but when they separated from them, and by what route they reached a milder clime cannot be definitely known. There are indications, however, that they arrived less than five centuries ago; and if the reports of travelers that a similar people are still to be found in Ladak and about the upper waters of the Satlej deserve credence, this may suggest the course of their migration. But one can

not too carefully remember that the movements of the rude tribes in and on the borders of India have not for the most part taken place under the observation of Europeans, nor do they belong within the purview of authentic history. For the facts and their explanation we are, rather, limited to such general considerations as physical type, language, and social and religious customs.

The speech of the Lepchas has the same general character as that of the long series of tribes that line the hills from Kumaon on the west to the eastern extremity of Assam, and along its southern borders to the plains of Bengal and down into British Burma. Its vocables are for the most part monosyllables; but it shows not a little tendency to combine these into new entities, giving it not unreasonable claim to rank with agglutinative tongues; though the few scholars who have examined it are reluctant to admit it to that class. In fact, it illustrates what we are so apt to forget, that the division between classes of languages, on the basis of structure as well as vocabulary, is not a hard and fast line, but a zone, so that one passes by almost imperceptible stages from one type to the other. This is true in a special degree of the region under survey. The verb of the Lepcha, Hodgson would call non-pronominalizing; that is, it does not append to the stem pronominal elements to mark person or number. These are determined by the subject alone. Still, the relations of tense and mode are not unfairly provided for in the verb-system. Those representing mode, however, together with the forms which we are accustomed to call secondary conjugations, are in great part expressed by the help of auxiliary verbs. Such culture as the Lepchas possess—and they have some—came to them proximately from Tibet and remotely from India.

At an early period of their residence in Sikkim the Thibetans came across the mountains and usurped the place of their native chiefs. In their train followed Buddhist monks, bringing their sacred books and their monastic system. In this way many Thibetan words and idioms were colonized in Lepcha speech, especially such as belonged to an advanced civilization. While the hill languages farther west seem to have been largely influenced by Hindu vernaculars, the Lepcha and other tongues to the eastward have received a more decided impress from Tibet. In one particular the Lepcha is in advance of nearly all the other aboriginal languages, it possesses written characters of its own. That these came ultimately from India there can be little doubt, but the manner and time of their adoption is at present unknown.

The primitive religion of the Lepchas, which in spite of Buddhistic influence, still has a great hold upon them, was spirit worship. It is said that they recognized a Supreme God and paid him reverence; but their chief anxiety, doubtless, was to keep on the right side of the tricky, semi-human beings that dwelt in their mountains or prowled around their forests and habitations. Happy the man who by a timely tid-bit could satisfy their greed. The Lepchas have a tradition that once a flood covered all the country, but that a hill, visible from Darjiling, arose and supported on its peak a ship containing a few persons, while all other men were drowned. They also relate that anciently some of their people who are now extinct, ascended a mountain, and began to build a tower thence to reach heaven.

For a knowledge of the Lepcha language we are indebted to Col. G. B. Mainwaring, who published a grammar in 1875; and to the translation of portions of the Scriptures, of a little earlier date.

THE AO-NAGA LANGUAGE.—We are glad to be in a position to record another instance of the service which missionaries have incidentally done to science in their efforts to put the gospel into the hands of heathen tribes. The Ao-Nagas represent the eastern portion of the numerous Naga tribes, whose home is on the hills of southern Assam. Hitherto scarcely anything has been known in Europe regarding the structure of their language, since it was wholly uncultivated; but for the last 14 years the Rev. E. W. Clark has resided among the people in the service of the Am. Missionary Union, and has for the first time reduced the language to writing. He has printed in Roman letters the gospels of Matthew and John, the history of Joseph, a small catechism, a collection of religious hymns, and a school primer. He is also preparing for pubcation a dictionary of the language, containing several thousand words. We hope soon to be able to give an outline of the structure of this language. Mr. Clark has very recently arrived in this country on a furlough.