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1907

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Rev. STEPHEN D. PEET, Ph. D., Editor.

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UNIVERSITY OF CALIFORNIA

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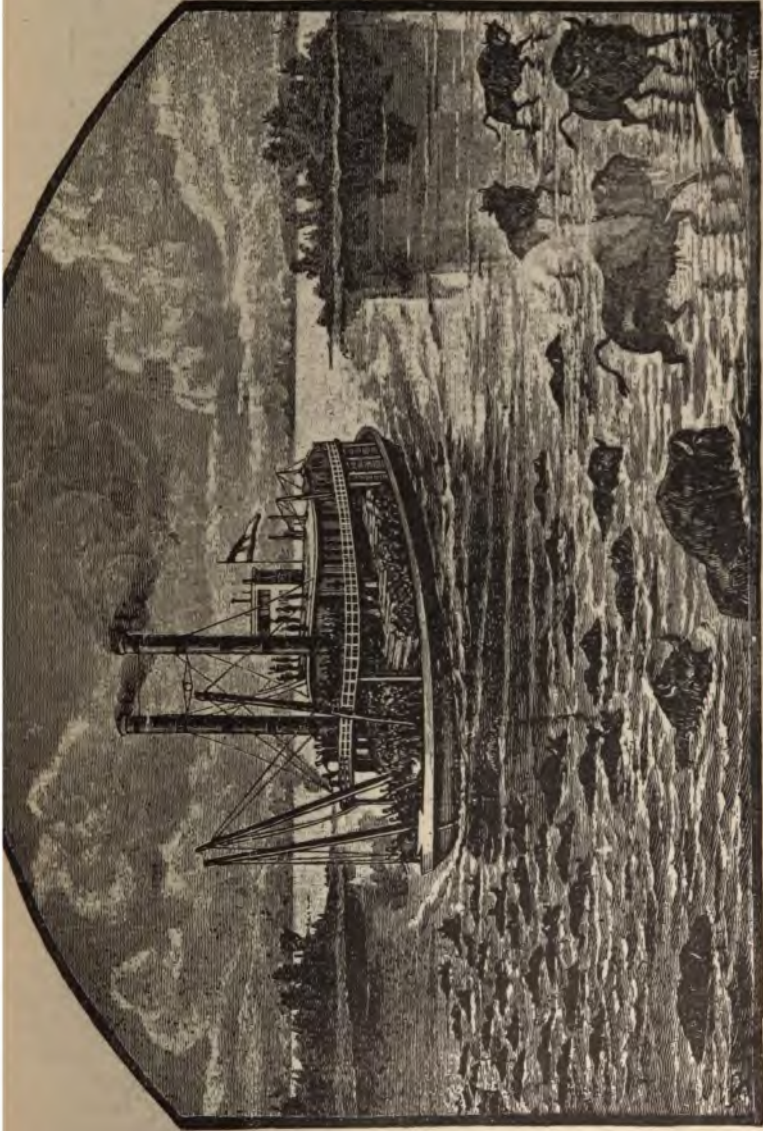
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BUFFALO AND STEAMBOAT ON THE MISSOURI RIVER



BUFFALO AND INDIAN HUNTERS. (DEBRY).

THE
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VOL. XXIX

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No. 6

THE MIGRATIONS OF THE BUFFALO.

The Bison or Buffalo is one of the most remarkable animals which has ever come to the knowledge of man. Classed among the Herbivorae and allied in some respects with the Buffalo of the far east, it may be regarded as a creature which was peculiar to the American continent.

It is true that pictographs have been found in the caves of Europe which seem to indicate that an animal resembling the Bison once lived on that continent and was associated with the cave bear and with other animals of the kind, and yet it is unknown at what time he migrated from that region or by what route, and yet this very fact suggests the history of the animal, and leads us to realize something of his migratory habits, and to emphasize the fact that he is and was one of the most migratory of all animals.

There are pictographs on the rocks of the far west, which represent Buffaloes with dogs and horses and beasts of burden, with white men on horseback. These were evidently traced after the advent of white men. This illustrates the survival of the Bison. The length of time which the Bison lived on the continent is unknown, but the record is still left within the mounds and on the rocks.

These cave drawings may have been pictures of the Aurochs rather than of the Bison, yet they show that the ancestors of the Bison prevailed in Europe at a very early date. It should be said that there were different species of Buffalo on the American continent, one having prevailed in the arctic regions in the British possessions, another the ordinary American Bison on the great plains.

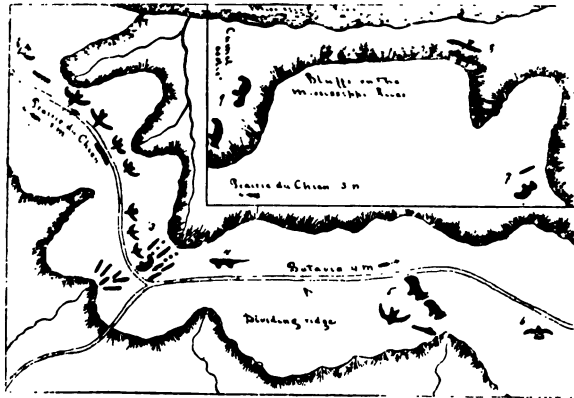
The figure of the Buffalo is also found inscribed on the side of a cave near La Crosse. Father Marquette was the first one to describe the Buffalo, for he saw in his voyage from Green Bay to the Mississippi River a Buffalo, of which he made a picture.

The most important point is that the Bison was once spread over all parts of the American continent and was formerly very numerous, yet through the rapacity of man and the heedlessness of this nation has been in danger of utter extermination. Those

who were familiar with the scenes which transpired on the great plains about the time that the Union Pacific Railroad will remember what terrible slaughter was made of these creatures and how soon the vast herds disappeared. It would seem that there was no end to the slaughter until the vast herds had been destroyed and their feeding places were left desolate.

De Bry is one of the earliest to depict the Buffalo. An engraving which is presented shows not only the shape of the animal but the form and dress and weapons of the natives who at that time hunted the Buffalo.

The vanishing of the wild animals is one of the results of the progress of civilization and the occupation of the western continent. In some localities this has been gradual, but in the United States it has been rapid. Among all the animals which have disappeared, the Buffalo, or Bison, is the most worthy of notice.



BUFFALO EFFIGY MOUNDS

It will be remembered that the early explorers who followed Ferdinand de Soto across the gulf states came in contact with these animals in the Cherokee country, and at the same time they found a peculiar kind of dog, which had been domesticated. The Buffalo, however, was wild, and was rarely seen.

The range of the Buffalo in America at the time of the discovery was as far east as the Alleghenies, and as far west as the Rocky Mountains. Their range extended indefinitely to the North and Northwest, and south to the Gulf of Mexico. That they were common in Wisconsin is shown from the fact that the effigies of the Buffalo were frequently seen mingled with the effigies of elk, deer, and other grazing animals frequently associated with wolves, foxes, and other prowlers as well as birds, eagles, wrens, pigeons and other birds.

Wisconsin, in pre-historic times, was the paradise of hunters, especially for those seeking large game, as the game drives were

very numerous in the territory before it was settled by the whites. The number of the Buffaloes which abounded on the great plains as late as the great migration to California after the discovery of gold, was so great that whole railroad trains were stopped by the herds, and hunters would stand for whole days while the great herds were passing them. Hunting buffalo was so profitable that it became a business with many, but as there was no game law to prevent wholesale slaughter they soon became decimated and rapidly disappeared.



It is to be noticed that the Indian tribes were acquainted with the Buffalo and had their regular seasons for hunting them, but they never carried out any wholesale slaughter; but after they had their supply of Buffalo skins



and of Buffalo meat they returned to their villages and left the plains to the animals as their rightful possession.

Catlin, in his interesting book on the manners, customs, and conditions of the North American Indians, describes the vast herds which prevailed. He also describes the dances in which the Indians wore Buffalo heads for masks and strips of the buffalo skins hanging on the back, buffalo tails dragging on the ground, the dancers carrying shields and spears and war clubs,

and bows and arrows in their hands, with tufts of buffalo hair upon their feet, the dancers imitating the various attitudes of the Buffalo.

Catlin says: "The dances continue in the Mandan villages two or three weeks at a time without stopping until the Buffaloes make their appearance, and so they never fail to think the dances have been the means of bringing them in. Every man in the village is obliged to keep the mask of a buffalo hanging on a post at the head of his bed, which he can use on his head whenever he is called upon by the chiefs to dance for the coming of Buffaloes. The mask is put over the head, and generally has a strip of skin hanging to it, of the whole length of the animal with the tail attached to it, which, passing down over the back of the dancer, is dragging on the ground. When one becomes fatigued of the exercise, he signifies it by bending quite forward and sinking his body upon the ground; when another draws a bow upon him and hits him with a blunt arrow, and he falls like a Buffalo; is seized by the bystanders, who drag him out of the ring by the heels, brandishing their knives about him; and having gone through the motions of skinning and cutting him up, they let him off and his place is at once supplied by another, who dances into the ring with his mask on; and by this taking of places, the scene is easily kept up night and day, until the desired effect has been produced—that of "making Buffalo come."

The cuts represent the Buffalo herds which were described by Catlin as running over the bluffs of the Missouri River and as swimming through the water, even in the vicinity of the steamboats. All of these herds passed away under the attacks of the white hunters, who were only seeking their hides but left their carcasses to rot on the plains. The writer has found many game drives on the banks of the Rock River and on the bluffs between the Kickapoo and the Mississippi River, and near which the effigies of Buffalo were seen. There is a rock near the Illinois River which is called the Buffalo Rock. It is a precipice over which the Indians were accustomed to drive herds of Buffalo.

These facts show that Buffaloes or Bisons were very numerous in the United States as well as in the Canadas, but they have nearly all disappeared.

The Buffalo have become very scarce, though the Buffalo park near Banff in Canada has a large corral of 2,000 acres in which is a magnificent herd of 56 Buffaloes and calves, the last remnant of the countless thousands of Bisons which once roamed the adjacent plains.

The Buffalo, or Bison, has so far diminished that it is an actual curiosity, as much so as the gray wolf and coyote. While the wolf is increasing the Bison is diminishing, and were it not for a special effort that is now being made, the species would become entirely extinct. To the Indian, the Bison has hitherto been indispensable as an article of food and for the many uses

to which its hair, skin, and horns are applied.

There are, to be sure, Buffalo herds still remaining in certain parts of Canada, but with the rush for new lands which has recently set in it is more than likely that these will soon disappear.

It is, however, fortunate that a movement is on foot to restore so far as possible the Buffalo to his own habitat.

The Buffalo herd of the New York Zoological Park has for a long time been one of the finest sights of that great home for wild animals. Originally planned to contain twenty head, it numbered previous to this shipment forty-five as handsome Buffaloes of all ages as ever were brought together. Ten lusty calves have been born this year.

But notwithstanding the fine condition of this herd, the officers of the Zoological Society know that the only sure way by which the American Bison can be preserved in full vigor for the next



BUFFALO ROCK INSCRIPTIONS

200 years or more is by establishing herds under national or state ownership, on public lands, in ranges so large and so diversified that the animals will be wild and free. Under such conditions Dr. Hornaday declares that no ill effects from inbreeding ever need be feared.

The herd for Oklahoma is composed as follows: Six breeding cows, one big bull, "Comanche," 5 years old and master of the herd; one bull three and one-half years old, two bulls and one cow in the third year, one bull and one cow in second year, and one pair of calves, male and female, six months old.

In this collection four different strains of blood are represented, and there will be nothing to fear from inbreeding.

The idea of a southwestern national herd, founded by a gift from the New York Zoological Society, originated with Dr. William T. Hornaday, director of the Zoological Park, and from its earliest mention it was warmly indorsed by the executive committee of the society. The offer was made to the Secretary of Agriculture, who immediately accepted it, and invited the society to select a site for the new fenced range that would be necessary. Forthwith the society dispatched a special agent, J. A. Loring, who went to the Wichita reserve and with Supervisor E. F. Mor-

rissey, carefully examined the whole available territory.

A location was agreed upon and duly mapped out. Mr. Loring submitted to the society an elaborate and thorough report which was transmitted to the Department of Agriculture, and to Congress. Secretary Wilson secured a special appropriation of \$15,000 for the erection of a wire fence to inclose twelve square miles of range, and to erect corrals, sheds and a hay barn.

This work has been proceeding, and will soon be completed, under the direction of the Forestry Bureau of the Department of Agriculture, whose officers have from the first been keenly inter-



EXTERMINATION OF THE BUFFALO

ested in the undertaking. All the improvements were planned by Mr. Hornaday, and the animals for the nucleus herd were carefully selected by him.

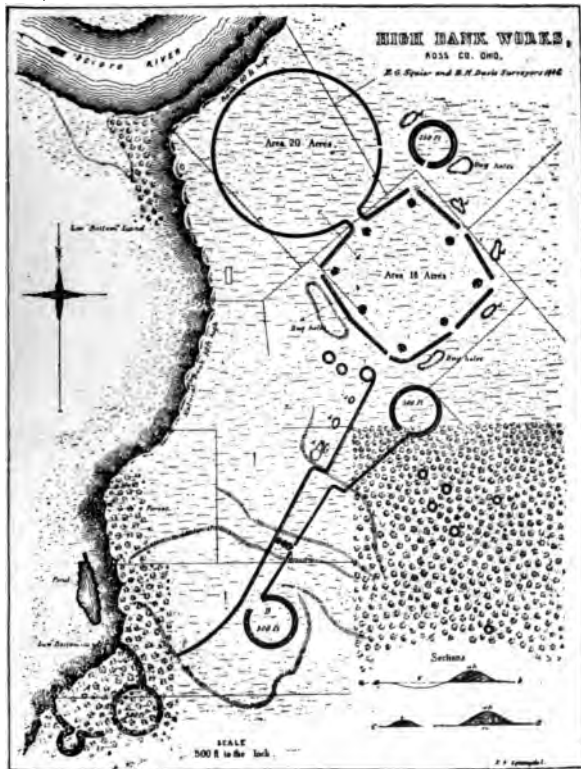
The Buffalo herd presented to the national government by the New York Zoological Society last year to form the nucleus of a great southwestern herd has just been transported to the new range of 7,680 acres prepared for it in the best portion of the Wichita forest and game preserve, southwestern Oklahoma.

Fifteen fine animals, the pick of the splendid herd of forty-five head in the New York Zoological Park, were crated for shipment October 10, each in roomy and comfortable crates, and sent to Cache, Okla.

THE DISTRIBUTION OF SUN CIRCLES.

The prevalence of sun circles throughout the world at a certain stage of progress is an interesting subject. It should be said here that the circle is everywhere a symbol of sun-worship, and is in contrast to the serpent, which was used as a symbol of another form of worship, which is also common throughout the globe.

There are many earthworks in Ohio and elsewhere which are in the shape of perfect circles with a ditch inside a circular wall, and a level circular platform inside the ditch, all of them inclosing

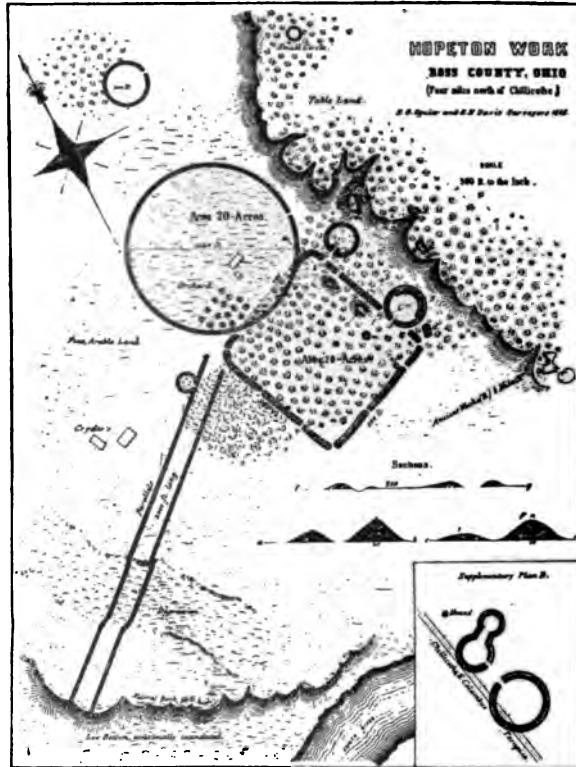


SUN CIRCLE IN OHIO

a hemispherical or conical mound. Some of these are near complicated earth walls and village sites, but many of them are situated on the hilltops adjoining the village sites and overlooking the valleys. The supposition is that these were sun symbols, and were the work of sun-worshippers. This interpretation has been advanced in the book on the Mound-Builders,

and has not been up to the present date disputed. The question which the editor would put before the explorers is whether there are any other evidences which confirm this theory. Earthworks have been destroyed within a few years to such an extent as to take away the proofs and yet those who are exploring in the region may perhaps find other evidences which will confirm the supposition. Among these explorers no one has been more persevering than William C. Mills of Columbus, Ohio.

The same practice was described by De Bry as existing among the Southern Mound Builders. Here there was, in addition to

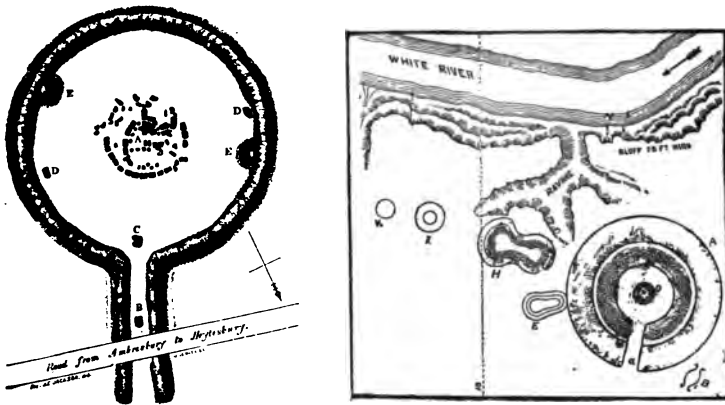


CIRCLE AND SQUARE IN OHIO

the circle and the conical mound, a semi-circular platform or pavement which suggests the idea that the moon was also used as a symbol. Village sites in Ohio were generally near the larger streams and overlooked the bottom lands. They were surrounded by fields, very much as the Southern villages were. There were also parallel embankments which led from the village inclosures to the rivers and to the fields, some of them to the dance circles, situated on the bluffs at a distance from the inclosures.

Examples of these village inclosures and so-called covered

ways and conical mounds, have been found at Newark, Ohio, at Highbank, and at Chillicothe. The supposition is that the Mound Builders of this region were sun worshippers and lived in villages, but were surrounded by hostile tribes, and that the earthworks were designed for defense. Mr. A. L. Lewis has described the circular works in Great Britain and is still following up the study of them. These circular works are generally formed by standing stones. His opinion is that they were built by sun worshippers, and that orientation prevailed. The interest shown by the English and American Archæologists ought to extend to those who are studying the ancient works of Greece, Asia Minor and regions farther east, so that the stages of progress through which sun-worship passed may be ascertained, and the various systems which have prevailed in pre-historic times throughout the world may be recognized. Archæology is not to be held to narrow limits, if it is to do its full work. The editor would call attention to this point, and would ask those



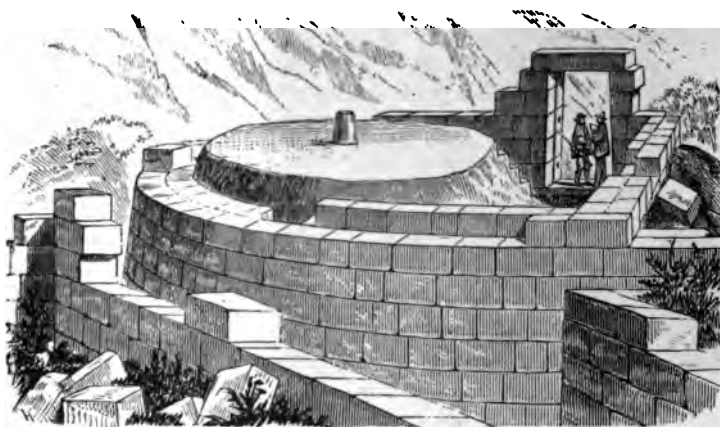
EARTH CIRCLES IN OHIO

who are living in remote regions, such as Australia, India and the various parts of the Asiatic continent to furnish information.

The Megalithic circles, chambered tumuli, stone cists, dolmens, underground houses, ancient camps, the fortified buildings of England, may prove the connecting links between the ancient works of Great Britain and those farther east and south. Prof. Nillson speaks of the Baldur stone as being six or seven feet high, oval in shape, and thinks that it was a sacrificial place. This is important for it suggests the idea that human sacrifices were offered by the Mound Builders of Ohio. Cup stones have been found in Ohio, some of them near Altars, which were situated upon high points of land. It is possible that these were used as the socket for the stone fire-drill, and were used for starting

the fire on the altar which was to consume the sacrifices. One such altar was visited a few years ago by the writer, and the cup-stone was picked up near it. The altar was on a high hill, which overlooked the extensive works of Newark. It might be called a High Place, as appropriately as those which have been described as existing in Palestine and regions farther east.

In connection with the subject of sun circles, it may be well to speak of the monuments of Peru. The open air temples have been described in the "Book on Ancient Monuments and Ruined Cities." These were devoted to sun worship and the temple itself symbolized the sun, as a stone pavement laid in diagonal lines



SUN CIRCLE AT PISAC

ran around the circle, which is made up of standing stones. Inside of the circle near the center were two standing stones which were designed to show the time of the equinoxes, as they cast no shadow when the sun was at the equinox. This circle reminds us of those which are still found at Stonehenge and Avebury in Great Britain. These are called open air temples, but that at Stonehenge resembles the earthworks which were formerly common among the Mound Builders, especially those at Portland, Ohio, as they were connected with what were called "covered ways."

The best representation of the sun circle is that found in Peru near Pisac. It is made up of a circular wall with a door at the entrance and a flat-topped mound in the interior, circular in shape, with a sun-dial at the center of the mound.

These remind us of the Chinese temples, which were generally built in a circular form with conical roofs and were surrounded by platforms or terraces, concentric circles with carved

marble balustrades.

It is worthy of notice that the circular temples are found among Pagan nations all over the globe, and were generally used



SUN CIRCLE IN PERU

as places of sacrifice. They were open air temples, and it is supposed that sacrifices were made in them to the sun. Temples or sacrificial places have been found on the summit of the mountains in North Arabia not far from Mount Hor.



CIRCLE AND CRESCENT

The distribution of these sun circles, taken in connection with their localities and the structures surrounding them, show how widespread sun-worship was and how prevalent it was at a certain stage of social progress.

ARCHÆOLOGICAL NOTES.

STONE HAMMERS.

In a previous chapter we have spoken of the stone ax and other edged tools, but have thus far said nothing concerning the hammer. It is evident, however, that the hammer was used in pre-historic times, as well as the ax, the arrow, the spear, drill, knife and flesher. There were several different kinds of hammers. Mr. J. D. McGuire says there were three.

The first are generally called thumb and finger stones. They are round, flattened on the sides, with a depression in the center as finger holes. The periphery is often beveled on the edge and flat on the sides, so it could be used either as a hammer or as a rubber or grinder, and would admit of many and varied positions when used.

The second differs from the first in that the spherical form has given place to an oblong, and yet the ends and sides are rounded; no sharp edge is presented. The third type is the grooved hammer, which was intended for hafting. This grooved hammer is generally oblong in shape, but its ends and sides are rounded, and it might be considered a flattened form of the spherical hammer. Nearly all the hammers are of a size suitable for hand use in stone pecking, rather than chipping. Nuts and bones could be cracked with either form of hammer, but paint and grain could be ground with the circular hammer better than with the oblong.

The implement which was used in chipping flint arrow heads seemed to have been different from the ordinary hammer, and yet there were so many uses for the hammer that it was absolutely necessary—as necessary as the arrow or the ax.

The hammers were made out of any hard stone that could be obtained, diorite, quartzite, porphyry, or any tough material which was gritty, and which could be used for grinding or breaking, chipping or pecking.

BANDED COLUMNS IN YUCATAN

Edward H. Thompson has described those from the cave of Tol Tun. He has described temples and palaces at Chultunes and has shown the sculpture which abounds in them. The palaces have heavy cornices which are decorated with banded columns placed close together. The serpent figure constantly recurs in the ornamentation. The buildings are generally low and long, but have chambers within in which are angular arches.

(See Archæological Researches in Yucatan by Edward H. Thompson, Cambridge Museum, 1904.)

THE HITTITES.

The Hittites seem to have been familiar with picture writing, and often placed figures on the rocks. Among other figures are bull's heads, ram's heads, hare, serpent, tortoise, and two-headed eagle. There are terra-cotta seals, representing a dog, a man, a pegasus galloping with wings outspread.

It was the Babylonian culture that the Hittites carried with them to the west. The Mycenaean art shows the most evidence of the Hittite influence. The Hittites, however, carried the time-worn civilization of Babylonia to the farthest boundary of Asia, and even farther west.

In the gray dawn of European history the religion, ritual, art and commerce of Babylonia penetrated by degrees the mixed population of Northern Syria and Asia Minor, whether Semitic, Turanian or Aryan. They dominated Cyprus, and in a lesser degree Crete and Mycenae. It is at present impossible to lay down the exact proportions in which the Egyptians, Phoenicians and Hittites blended with the native substratum in making up a civilization like that of Mycenae.

Still the Hittites were a literary people. In the art of Troy, Tiryns, Mycenae, Crete, Cyprus, we see the Greek gems, shields, vases of the Hittites. On the coins we find the ox, the tortoise, the ear of corn. These represent the articles of general commerce, whose barter the coins replaced. The constellations bring before us subjects which appeared early in Greek art, as well as the Pre-Hellenic art. Also, the Phoenicians and Etruscan coins contain objects which were familiar to art. Although Herakles does not, like Orion, appear in Homer, in the phases of the sun god, or in the constellations, yet the presentation of him makes the double form in the Iliad. He is the hero who captures Troy, is persecuted by Hera, and fights with a sea monster. He appears in the underworld as a phantom. He wears a gleaming belt of gold, whereon are wrought bears and wild boars.

Hercules recognizes Odysseus and speaks of the hard adventures he had on earth, and the hardest task was to lift the dog Cerberus out of Hades. Aryan and Accadean had a remarkable horror of darkness, as in the Vedic and Accadean hymns we see glimpses of a period when the primeval chaos prevailed. The night and the gloom, and confusion of the infernal abyss, were closely linked together.

See Wright's "Empire of the Hittites."

THE THUNDERBOLT.

In a pamphlet of sixty pages, with four plates, entitled "*Der Blitz in der Orientalischen und Griechischen Kunst*," Dr. Paul Jacobsthal considers that Babylonian and Assyrian art invented *loosely related* symbols for the thunderbolt, adapting for the purpose *the conventional* means of expressing fire. One of these

THE CLASSIFICATION OF MANKIND.

By C. Staniland Wake.

Any anthropologist reading carefully Professor G. Sergi's highly suggestive work on "The Mediterranean Race," can hardly refrain from considering what effect the theory propounded must have on views previously entertained in relation to the general classification of the peoples comprised within the human species. This point is important, and I propose to state the case, as it appears to me, and to see what conclusions may be legitimately drawn from the facts, particularly as to the physical characters of the leading branches of mankind.

The subject may properly be introduced by an extract from Professor Sergi's work. He writes (p. 241): "The stock, originating in Africa, which I call Mediterranean, because in the Mediterranean it developed its aptitudes and civilizations, contributed without doubt, from primitive times till the late quaternary period, to the population of the whole Mediterranean and of many other regions of Europe, as I have shown in the preceding pages. Its evident traces are found in the dolmens and caves of France, in the Long Barrows of Great Britain, at Casa da Moura and Mugem in the Iberian Peninsula, in the neolithic graves of Switzerland, in many tumuli in Russia, and even as far as the Canaries. All these have yielded typical skulls showing the characters found in the Mediterranean populations, whether Iberian, Ligurian, Pelasgian, or Egyptian, and allied to those of East Africa. Moreover, there still exist whole Mediterranean populations which, in spite of mingling with other peoples and historical vicissitudes, still preserve their primitive race elements." Professor Sergi continues, "Toward the end of the neolithic period, and after the first and pacific appearance of the Asiatic tribes which insinuated themselves in the midst of the early inhabitants, a great anthropological change took place in Europe, affecting even the Mediterranean, although in a slight degree. A new and different stock, strong and numerous, advanced from the east, and spread through the centre, west and south of Europe, overflowing the primitive stock, in many regions succeeding in displacing it, in others subjugating it." These invaders, whom Sergi calls *Eurasiatic*, owing to their Asiatic origin, "were savages, inferior to the neolithic Europeans, whose civilization they in large part destroyed, replunging Europe into barbarism, also introducing the new burial custom of cremation, together with other customs which it is not necessary to investigate here, and transforming the existing languages into their own, which was a flexional language. To-day this new anthrop-

ological family, which also constitutes a zoological unit, bears three chief names, indicating three characteristic linguistic groups—that is to say, Celts, Germans and Slavs." (p. 263). The physical characters of these intruding peoples differed largely from those of the Euraficans, their skulls belonging to the brachycephalic type. Sergi refers their origin to Asia, "since Ujfalvy has found in the Hindu-Kusch the same types that are found in Europe, and since their cephalic forms are all Asiatic, and are found not only among the so-called Aryans of the Hindu-Kusch, but among the Mongols and others."

The light-haired Finns are supposed by Professor Topinard to furnish the link between the Mongolian peoples of Asia and the broad-headed peoples, also fair of hair and complexion, who introduced the Aryan speech into Europe; which up to that epoch had been populated by long-headed tribes of the Mediterranean stock. How far eastward this family of peoples extended is doubtful. Professor Sergi refers to it the primitive population of Egypt, as well as the Nubians and Bejas, the Abyssinians, the Galla, the Somali, and even the Masia and the Wahuma. There are reasons for referring even the Hottentots of South Africa to the same stock, and with equal reason it may be said to embrace the Asiatic Ethiopians of ancient writers, and thus to extend through southern Asia as far as the Indian Peninsula, unless these Ethiopians are to be classed with the Dravidians of India.

Within the Asiatic area, however, we are brought into contact with peoples, similar in some respects to those classed by Professor Sergi as "Mediterranean," and yet which he does not refer to, although they are now represented on European soil. The Todas of the Nilgiri Hills in western India are associated by Professor Topinard, in respect to certain characters, with the Ainos of Japan, whom he speaks of as belonging to the European group. In their prominent eyebrows and abundant growth of hair with full beard, they resemble the aborigines of Australia, who also, therefore may be referred to that group. These widely separated eastern peoples have much in common with the peasant class or Moujiks, of Russia, and they are not without representatives in western Europe, particularly in the British Islands. Such must be said of the full-bearded Welsh type, and a similar type was probably common in Ireland at one time, if it be true, as was affirmed by Professor Huxley, that the ancient Irish skulls resembled those of the natives of Australia. This long-headed, hairy type of people are thus found, more or less sporadically, throughout the whole breadth of the Euro-Asiatic continental area, and the question arises as to what is its relationship to the Eurafican or

Mediterranean stock of Professor Sergi?

The Todas belong to the Dravidian race of India, with whom Professor Topinard and other anthropologists seem inclined to class the Australian aborigines. There are evidences that the Dravidas at one time occupied the region northwest of India, and possibly they may have been the race referred to by ancient writers as Asiatic Ethiopians, who seem to have occupied south-western Asia between the Red Sea and the Indus. Southern Arabia is sometimes spoken of as the land of Punt, referred to in early Egyptian inscriptions, but Professor Sergi does not accept this view, agreeing with Mueller and Brugsch in locating Punt in Africa, on the coast of Somaliland. Nevertheless, it cannot be questioned that there was a relationship between the ancient inhabitants of southern Arabia and those of the African coast of the Red Sea, both of these people belonging to the Hamitic race, which is supposed to have formed a branch of the great Mediterranean stock.

The external features of the people belonging to this stock are: "brown colour of the skin, eyes (chestnut or black iris), hair, beard, and the hair on other parts of the body;" and the consanguinity of the red, brown and black African Hamites is accepted by Professor Sergi through their cranial and facial characters. According to his view the Mediterranean stock is "a brown human variety, neither white nor negroid, but pure in its elements, that is to say, not a product of the mixture of whites with Negroes or negroid peoples." But may it not be the product of the mixture of negroid peoples not with whites, but with a darkish complexioned people such as that above referred to, and which may perhaps be termed Scytho-Dravidian? Such a case would explain the fact that the full beard and whiskers which distinguishes the latter peoples are comparatively rare among the Mediterranean stock, which has rather the comparatively short beard of the modern Berbers and the ancient Egyptians. Moreover, in the former the superciliary arches are more fully developed than in the latter, a characteristic noticeable still among the inhabitants of Britain. (*e. g.* See the portrait of Darwin.)

How far the view thus propounded is consistent with the facts of craniology, I cannot say, but the wide extension of the Scytho-Dravidian stock would lead to the conclusion that it was very ancient, and moreover, it includes peoples, such as the Australian aborigines, the Melanesians, and the Papuans, who are generally regarded as among the most primitive now existing. Darwin, in his "Descent of Man," refers to the fact, first mentioned by Agassiz, that "the different races of man are distributed

over the world in the same zoological provinces as those inhabited by undoubtedly distinct species and genera of mammals." He adds, that this is manifestly the case with the Australian, the Mongolian, and Negro races of man. Now the marsupials of the Australian continent represent the oldest mammalian forms, and for this reason we might be tempted to see in their human associates the most ancient representatives of mankind.

However this may be, on the assumption that the Scytho-Dravidian peoples belong to the most primitive long-headed, hairy stock of mankind, then we shall have in the Mediterranean race the result of the admixture of that stock with the native African peoples to the south; as to the north their mingling with the Mongolian race gave rise, according to Professor Sergi, to the Celtic, German and Slavic Aryans, many of whose special physical characters are thought to have been derived from the Finns. Professor Topinard supposes the Finnish type to form the point of union between the blonde type of Europe and the Asiatic types. We thus have three principal stocks, lying almost side by side, the Scytho-Dravidian between the Mongolian and the African, to the south, with the Mediterranean race as the result of their intermingling; and the Mongolian to the northeast, with the Aryan race as their joint product, between. With the Mongolians must be associated the Tibetans, the Malays and the Chinese, who would seem to be intimately related, and in whose admixture with members of the Scytho-Dravidian stock probably originated the brown peoples of the Pacific area. Possibly to an early mingling of Malays, or allied peoples, with the Negro stock, at a time, it may be, while yet Africa was united with southern Asia by the lost Lemuria, the short-headed dwarf peoples of the tropical area originated; unless, indeed, they are to be regarded simply as representing the early Mongolian stock.

Whether a similar explanation can be given of the origin of the native population of the great American continent, including the Eskimo, is doubtful, although the cases are analogous. For in America, as in the old world, short-headed peoples are distributed throughout one side of the continent and long-headed peoples throughout the other side; while in the arctic region, allied peoples of the Mongolian type chiefly are found on both continents. The Eskimo of America occupies a somewhat peculiar position; for, although, as Professor Topinard points out, his head presents the same general character as the very brachycephalous Kalmuck, and facially he belongs to the yellow race, yet he is the most dolichocephalous of human types. This looks as though he was the
 t of a mixture of a Mongolian people with a people of the

long-headed stock. Professor Topinard finds that the Patagonian skull from ancient graves closely resembles that of the Eskimos, and he suggests that they show the crossing of an intruding Asiatic brachycephalic type with the native American dolichocephalous race. If so, then the long-headed peoples of the eastern part of the American continent may be regarded as on the whole autochthonous, and the short-headed peoples on the west will represent the intruding Mongolian stock. This is not an unreasonable view to take, particularly as it will explain the Mongolian features observable with many of the western Indians, in both North and South America. Some of the carved faces seen among the ruins of Central America are quite Japanese in character.

But the long-headed race of the American continent is not autochthonous in the sense of having originated there. It is shown by Darwin that, assuming the descent of man, or "ascent" if this term be preferred, from a lower animal form, man cannot have originated in the New World, as the most important characters in which he approaches the apes are not possessed by the Platyrrhine or New World monkeys. Darwin affirms that "man unquestionably belongs in his dentition, in the structure of his nostrils, and some other respects, to the Catarrhine or Old World division" of monkeys. The probability is that the earliest long-headed American peoples were derived from the Pacific area, and thus could be explained his possession of his prominent nose, a feature in which, as Professor Topinard remarks, he agrees with the Polynesian Islanders; although the Polynesian Islanders are themselves doubtless a mixed race, the foundation of which was a long headed type, on which a shorter headed type was imposed. The French anthropologist says it is almost impossible not to see a relationship between the Polynesians and the natives of South America, but he also insists on the fact that the Malays, who are usually spoken of as having given the Polynesians their language, are of two kinds, the short-headed and the long-headed. To the latter belong, among other peoples, the Dyaks of Borneo and the Macassars and the Bugis of Celebes, and as they are somewhat bearded they are unlikely to belong to the true Malay race. They are said by some anthropologists to possess European characters, and probably they were derived originally from Further India, or at least they possess an element derived from thence or from India itself. The head hunting propensity of the Dyaks, which is known also to the Naga tribes of Assam, would ally them to the Indians of North America, whose scalping custom was most probably a relic of head taking; as the cannibalism formerly ascribed to many of the American tribes would associate them with the Polynesians

in general. The oldest existing representatives of this stock appear to be the peoples of the Micronesian branch, and it may be that their progenitors furnished the earliest members of the long-headed race to settle on the North American continent. The Melanesian culture has much resemblance to that of the coast tribes of Eastern Columbia, however, that an Oceanic element has doubtless been introduced on to the American continent from that area.

The American aborigines are thus allied, not only to the Mongoloid peoples of Eastern Asia, but also to the races more or less long-headed of the Oceanic stock, and as when discovered by European explorers they were practically still in the stone age, the migrations of the former, who were its latest comers, must have taken place while still the Eastern Asiatics were unacquainted with the use of iron. At a more recent period the North American continent must have been visited, judging from the language of Plato, by explorers from beyond the Atlantic; for in the *Timæus* the Greek philosopher refers distinctly to the existence of a continent surrounding the "real sea," in which he placed the great island of Atlantis and the other islands lying beyond, toward what Plato says "may be most truly called a continent." Those early European explorers, if not Phenicians or Greeks, belonged at least to the Mediterranean stock, of which the ancient Egyptians were the first historical representatives, and it is not improbable that they left their impress on the native population of the Atlantic side of the North American area. It is quite possible that these long-headed intruders from the Atlantic met with allied peoples from the Pacific, as the Somali, who are classed by Sergi with the Mediterranean race, are said to much resemble peoples of the Asiatic archipelago.

Judging from what has been said above, the existing races of mankind belong to seven chief stocks—that is: African or Negro, Mediterranean, Aryan (European), Scytho-Dravidian, Mongolian (Asiatic), Oceanic, and American. Of these the Mediterranean, the Aryan, the Oceanic, and the American, appear to show the blending of two or more of the other stocks, leaving the African, the Scytho-Dravidian, and the Mongolian as the primitive stocks of mankind. Of these the African is the typical long-head of the south, while the Mongolian is short-headed and belongs to the north. Both are beardless, but one is lank-haired and the other is frizzly, a character which, like the dark color of the skin, is probably due to the action of climate and soil. The Scytho-Dravidian also is long-headed, but otherwise he differs largely from both the African and the Mongolian type, so much so that it is difficult to suppose that he could have sprung from them by any degree of

intermixture of the two. It has been suggested, from the light color of the new-born African child, that the Negro originated from the Mongolian stock, but it is questionable whether such a derivation is consistent with the differences of skeleton and skull presented by the two types.

The lighter color of new-born children as compared with their parents is referred to by Darwin in connection with the question of sexual differences between man and woman. The male and female characters usually appear only some years after birth. He also says that "as the young of closely allied though distinct species do not differ nearly so much from each other as do the adults, so it is with the children of the different races of man. Some have even maintained that race differences cannot be detected in the infantile skull. From this fact we are justified in assuming, perhaps, that the various races have had a common human progenitor." Darwin is clearly of this opinion, for elsewhere he remarks: "When naturalists observe a close agreement in numerous small details of habits, tastes, and dispositions between two or more domestic races, or between nearly allied natural forms, they use this fact as an argument that they are descended from a common progenitor who was thus endowed; and consequently that all should be classed under the same species. The same argument may be applied with much force to the races of man."

If the monogenistic view of the origin of man is accepted, then among the three chief existing primitive races—the Mongolian, the Negro, and the Scytho-Dravidian—the last named is entitled to take precedence of the others, owing to its possession of bodily hairiness and full development of the beard. The former is characteristic of the apes, to which he is more closely allied than to any other of the lower animals. Mr. Darwin remarks that "from the presence of the woolly hair or lanugo on the human fœtus, and of rudimentary hairs scattered over the body during maturity, we may infer that man is descended from some animal which was born hairy and remained so during life." The loss of hair on the body he ascribes to sexual selection, and adds that, "as the body in woman is less hairy than in man, and as this character is common to all races, we may conclude that it was our female semi-human ancestors who were first divested of hair, and this occurred at an extremely remote period before the several races had diverged from a common stock." As this character has been preserved by the peoples belonging to the Scytho-Dravidian stock, as a general state and not sporadically, but so as to be truly racial, they are more likely to represent the primitive type of man than the Mongolian or African peoples; whose special characters must be explained as due in great part at least to the action of sexual

selection, which, as stated by Mr. Darwin, "has acted on man, both on the male and female side, causing the two sexes to differ in body and mind, and the several races to differ from each other in various characters, as well as from their ancient and lowly organized progenitors."

AMERICAN MYTHOLOGY COMPARED WITH ORIENTAL.

One of the most remarkable features of American Mythology is that there are so many myths and traditions which resemble those common in the far east. Among these traditions are those which refer to the four quarters or the points of the compass, the tree of life, the sacred mountain, the story of the deluge, and the future state.

One American myth was that there were four tortoises at the four quarters of the earth, who vomit forth the rains, send forth the winds; and like gigantic caryatides sustain the heavens. This myth prevailed extensively among the Indians of the Mississippi Valley, but it resembled that which prevailed among the Pueblo tribes of the interior, but with this modification: There were two other points. The zenith and the nadir were added, which with the center added made seven, a sacred number. These myths are important, for they throw light upon the ideas and customs which were common not only among the ancient tribes and nations of Europe, but those of the far east, and illustrate the manner in which Oriental traditions and bible stories came into vogue.

Another Quiche legend tells of four men who were first created. The great spirit gave them wives who were mothers, whose names were The Falling Waters, The Beautiful Water, The Water of Serpents, and The Water of Birds.

The Thibetans believe that on the sacred mountain grows the tree of life, and that four streams flow to the four quarters of the world from it.

Mythology has given the primitive meaning of the story of the tree of life, for it was derived from the method of fertilizing the tree. There are monuments on which Genii are seen holding towards the branches of the trees as though it were a sym-fertilization. This is however very different from the

meaning given to the tree Ygdrasil.

The notions entertained by the red race on the resurrection are peculiar and stand apart from any other. They did not look for the second life to be better or worse than the present. They regarded it neither as a reward nor a punishment; nor is there any evidence that they connected the future with a moral or physical event which affected their destinies hereafter. Their views



HUMANIZED RAINBOW

were in contrast to those of the Greeks and Romans, and especially the Israelites, but on the whole their thought of the future was hopeful rather than fearful.

The tradition among the Esquimaux was that the future condition was to be an improvement upon the present. In the course of time the waters will overwhelm the land, will purify it of the blood of the dead and melt the icebergs, sweep away the rocks, make a new land which will be peopled by young seals. Then the one from above will blow upon the bones of the dead men. They will at once start into life and lead a joyous existence.

ORIENTAL DEPARTMENT

Edited by Dr. CHAS. H. S. DAVIS.

The commission appointed to prepare the programme for the coming Interational Archeological Congress next spring in Cairo has sent out from the Egyptian Museum of that city the preliminary announcement. The experience of the last Congress, held in Athens in 1905, convinced the majority of the participants that the work has been too minutely divided. Accordingly, the next Congress is to have only six groups: (1) Pre-Classical Archeology; (2) Classical Archeology; (3) Papyrology; (4) Christian Archeology; (5) Numismatics and Geography, and (6) Byzantine Archeology. This arrangement, however, does not meet with universal approval. The Munich *Allgemeine Zeitung*, for example, while expressing pleasure that the new science of Papyrology has attained to the dignity of a separate section, regrets that Inscriptions has been assigned to a subordinate place; as also that the Christian Archeology has not been united with Byzantine Archeology.

Cav. Tapparelli, who has charge of the excavations in the old Etruscan cemetery, at Vicenza Italy, has made a remarkable discovery, which shows that Etruria was first settled from Asia Minor as far back as the fifteenth or fourteenth century, B. C., but also reveals the Hittite origin of the Etruscans themselves, whose already discovered remains have not dated further back than 1000 B. C.

During Cav. Tapparelli's excavations many interesting relics of the Roman-Christian period have been unearthed, together with a number of Latin sarcophagi and three brick tombs of undoubted Etruscan workmanship. Under one of these tombs was found another inclosing a lead coffin in perfect condition, but which when opened revealed a handful of dust and a remarkable terra-cotta cylinder about two inches in height and three inches by two and a half in diameter. The excavators at once recognized the cylindrical seal common among the Assyro-Babylonians, for in the British museum there are no fewer than 660 of them, all brought from Mesopotamia. These seals were used to give official or private indorsement to writing on clay, wax, or papyri pulp. Others of later origin have been found on the Island of Crete and
orca.

comparing photographs of the seals already discovered

with his find at Vicenza, Cav. Tapparelli was enabled to fix the approximate date of the latter. On the top of it is a small self-cylinder about an inch in length and evidently bearing the symbol or autograph of the owner. It is a male figure with wings and the head of an eagle. Around the cylinder itself are clustered a number of figures consisting of priests and cattle, revealing a sacrificial or scene of adoration, of which some exalted deity is the object. These figures, besides their literal significance, have, of course, a symbolical meaning, which has not yet been deciphered.

After an eight months' sojourn abroad, Prof. Randall MacIves, curator of the Egyptian department of the University of Pennsylvania, has returned to Philadelphia, bringing a large assortment of rare and valuable additions to the museum which he obtained in original excavations in Nubia. Prof. MacIves says that he is highly gratified with the results of his investigations, which he believes will add much to the knowledge of ancient Egypt. He became connected with the University last January, and was at once sent out to make explorations and excavations in Nubia, a part of ancient Egypt about which very little is known. He spent four months in that country and unearthed treasures of great value. Many of these he has been permitted to bring to America, and they will enrich the museum, which is already recognized to be the best in the United States so far as relics of old Egypt are concerned. After finishing his work in Nubia, Prof. MacIves spent some time in Greece, and then went to Oxford, where he has held for seven years a fellowship in one of the colleges.

Says Professor MacIves: "I regard my Nubian excavations as of immense importance to science. Just what significance they will have it will be hard to say for several months, as we have unearthed tablets bearing a language different from the general run of Egyptian inscriptions. Dr. Max Muller is hard at work translating these from photographs sent to him, and we hope to decipher them in time. Nubia has been disturbed comparatively little by modern excavators. I worked between the first and second cataracts, near the towns of Amadah and Anibeh. At Amadah there is a fine temple, which is very much in ruins now. We also found what might be called a fort, built in the time of Thothmes III. At Anibeh we came upon nine brick pyramids of the twentieth dynasty. They are the only brick pyramids known of that period. Their existence was known, but no scientific research concerning them had been made. The most valuable

article which I obtained for the museum is a very large engraved stele covered with inscriptions. I have also found much that will throw light upon the early Coptic church."

An appeal is being made for funds to undertake the great task of excavating the ruins of Memphis. It is expected that England will now do for Memphis what the French government has done for Delphi and the Germans for Olympia. The sites of the four great temples are plainly marked, so that exploration can begin at once. This mass of ruins covers 100 acres; as much as the whole of the site of Karnac, and it is estimated that \$15,000 will be needed annually for fifteen years to accomplish the work. Important material is believed to lie within a few yards of the surface, so that results should be reached promptly.

Prof. E. Sellin of the University of Vienna, who has had charge of the archeological researches made by the Germans in Palestine in recent years, and under whose direction the German Archeological School at Jerusalem began its work on the site of the biblical Jericho, has recently sent his preliminary report to the Vienna Academy of Sciences. The excavations are being made by about one hundred natives at five different places near the Elisha fountain. In the northern section were discovered the ruins of an old castle, which consisted of a tower twenty feet high, and a structure of four stories, connected with stone steps. In three of the rooms were bake ovens. Utensils of various kinds were discovered, as also reliefs of fleeing gazelles pursued by a lion. Another structure, with utensils of various kinds, was laid bare in another portion of the grounds. In still another some remnants of the old city wall of Jericho were unearthed, at one place a section of a brick wall as much as forty feet thick, built on a foundation of hewn stone two feet high. At another place, the searchers found private houses in different strata, built one upon the other, evidently representing different stages in the history of this famous city. Most of the houses belonged to the old Canaanitish and prehistoric age. Among the finds are lamps, plates, needles, handmills, and the like, some of clay, others of bronze. Prof. Sellin will continue his researches next season.

Important additions to the art treasures of the world are being made frequently as the result of the excavations which are continually going on in Italy. Last spring the Roman forum and the Palatine held the public interest, but now it has been turned toward ancient Paestum, where stand three of the most beautiful Greek temples in the world. Up to a short time ago the presence

of an entire city at Paestum was only dimly suspected. Nothing had been done in the way of excavations, partly because of the exceedingly unhealthy malarial conditions there. These conditions, through modern medical science, have been much moderated, and it is quite possible to excavate without danger to the health of the workmen. Until the work of excavation was begun it always had been supposed that the temples were all that remained, but Prof. Spinnazola was convinced that underground would be found a city, and he has proved himself right. He began by finding a few meters below the surface a perfect street, thirty feet wide, well paved, showing, as those of Pompeii, ruts worn by the heavy wheels used in ancient times. These ran past the temples called the Basilica and the temple of Ceres. At the back of the Basilica he found a terrace belonging to it and on the opposite side a grandiose semi-circle and three steps, forming a magnificent entrance. No one can have an idea, without seeing it, of the grandeur which this gives to an already almost perfect temple.

The professor has also unearthed a vast number of objects of stone, bronze and iron, which are of great interest as illustrating the customs of ancient times. These objects comprise knives, daggers, buckles, rings, chains, brooches, and a variety of utensils. An ancient Greek tower, which rises on the banks of the river Salto not far from the excavations, has been given by its owner to the State for a museum, it being particularly appropriate to that use.

In Rome another precious Greek statue has been found. It is particularly interesting, as it is pronounced to be an original, while most of the celebrated statues there are antique copies of originals. The new statue represents a market woman with chickens and fruit. The arms are missing, and the face is damaged, but otherwise the statue is perfect. As it was found in the Via Monte Caprino, it probably was a guidepost pointing in the direction of the market, which was near Monte Caprino, at the side of the Tarpeian Rock.

Owing to the decision to raise the Assouan dam twenty-three feet, an expedition has been appointed by the government of Egypt to survey the whole of both banks of the Nile from Kalabshi to Derr in Nubia, a distance of 150 kilometers. The known temples will be strengthened, their inscriptions copied, the monuments at present under the soil will be excavated and descriptions recorded and published. The work is expected to occupy five years.

In an interesting and profusely illustrated volume entitled "Mehr icht," recently published in Leipzig by Heinrichs, Prof. Friedrich Delitzsch of Berlin, author of "Babel and Bible," derives the medieval witchcraft delusion from Babylonian sources. That similar beliefs and practices prevailed among the Babylonians and Chaldeans is proved by the discovery and decipherment of the cuneiform inscriptions on a series of clay tablets, called Maglu (burning), belonging to the library of Asurbanipal. These records show that the Babylonians attributed to witches a mysterious and malign influence, which could be counteracted only through the agency of fire, but as this end could be obtained by burning them in effigy, this punishment was free from the horrors connected with witchcraft persecutions in Christian countries, where it has been estimated that this superstition has caused nine million innocent persons, of whom the great majority were the noblest and most intelligent of their day and generation, to be tortured on the rack and to be burned at the stake.

It is only about eight or ten years since the Turkish government has given the necessary firman to excavate in Palestine. The different nations of the West have harmoniously co-operated in this work, especially the Germans, Austrians, English, French and Americans. The Germans have been engaged chiefly near Mt. Carmel, under direction of Prof. Sellin of Vienna, and more recently have begun work on the ruins of old Jericho, in immediate charge of Prof. G. Dalman. Dr. Bliss and Prof. Flinders Petrie have investigated historic sites in the southwestern parts of Palestine, and the chief result of this work has been the demonstration of the fact that civilization and culture did not begin in Palestine with the advent of the Israelites, but that, antedating this period, an older type of civilization, chiefly along Babylonian lines, was widely spread in this historic land. Strata reaching back centuries before the era of Joshua have been found, even a few cuneiform inscriptions, proving still more fully what has already been seen from the Tel-el-Amarna letters, that in pre-historic times the Babylonian was the international language of diplomacy throughout western Asia and northeastern Africa. An excellent account of what has been accomplished is found in the recent work of P. Hugues Vincent, "Canaan d'Apres l'Exploration Recente." (Paris, Victor LeCoffre.)

Prof. Koldewey has been busily engaged in excavating in Babylon. His most interesting find has been a building from the period of Artaxerxes, ornamented with many-colored enamelled brick. In Egypt, the German Orientgesellschaft has continued

its researches in the pyramid field of Abusir Er-Rirah, near Cairo, and reports among other things a group of large and beautiful reliefs from the fifth dynasty. The full account of the society's excavations at the pyramid and the temple of King Ne-User-Re, in so far as they belong to the old kingdom, has now been published by Heinrichs of Leipzig, as the seventh volume of the Scientific Reports of the Orient Society, prepared by the leader of the Egyptian expedition, Prof. Ludwig Borchardt.

The German Evangelical Institute in Jerusalem has now published two issues of its annual reports, "Palestina Jahrbucher," edited by the leader of this school in Jerusalem, Prof. Gustav Dalman of the University of Leipzig. This Archeological Institution is entirely independent of the German Palestine Association and its *Journal*, having been founded by the representatives of the different German state churches as these meet biennially in the Eisenach conference. The institute is modeled after the classical schools in Rome and Athens, the purpose being largely to equip young university graduates for an academic career in the Biblical departments at home. These two volumes contain reports of researches made by the members of the institute in different parts of Palestine. Most of these papers are geographical, topographical and archeological. The publishers are Siegfried Mittler und Sohn, in Berlin.

Memphis, whose history extends over the whole course of Egyptian history, has never yet been excavated. It contained the finest school of Egyptian art, and in antiquity and wealth it was unrivalled. The Egyptian Research Account has now undertaken this work, and it will necessarily be a great undertaking, like that of France in the clearing of Delphi or of Germany at Olympia. The clearing of the site of Memphis, with gradual exchanges as land is required, will occupy many years, and it is estimated that an expenditure of about fifteen thousand dollars annually for about fifteen years will be required to excavate the temple sites, apart from the city. As half of the discoveries will be granted by the Egyptian government, this clearance is certain to yield a considerable return for those who undertake the work.

The work of the Egyptian Research Account under Prof. Petrie during the past season has been more successful than usual in the discovery of objects, and has added to our archeological knowledge. The first, second, and third dynasties have been tracked at Gizeh, and the civilization soon after the founding of Memphis has been proved to have been exactly equivalent to that

of the south at Abydos. Many vases of stone, and objects in ivory and flint, have been obtained of this remote time, centuries before the pyramid builders. A large funeral chapel of the XXVth dynasty was also found, containing four chambers; it was built for a commissary named Thary, and it has been left in place and earthed over again by the Department. A large amount of Anthropological material of the later times has been brought to England for study. At Rifeh, near Asyut, a very fine tomb equipment of the XIIth dynasty was found, of the best work and in perfect condition; the two coffins covered with painting, the canopic box, two boats, and five statues are of the first quality. A long series of pottery soul-houses have been recovered which explain this curious development of religious thought, and explain the appearance of the actual dwellings of the peasantry in the Middle Kingdom, with the details of construction and of furniture. This is the first time that this interesting subject can be regularly and completely studied. Much else was discovered of this age and of later times; and early settlements were excavated which yielded stone inscriptions and carvings, papyri, leaves of parchment MSS., and various other remains. It is intended to carry on some work in this same region this winter, before the ground is sufficiently dry to work at Memphis. The whole results are published in the double volume each year (given to all subscribers of ten dollars and upward), and a smaller edition gives most of the material of general interest for subscribers of five dollars. Subscriptions can be sent in this country to Rev. Dr. Wm. C. Winslow, 525 Beacon Street, Boston, Mass.

No more interesting works of excavation have been carried out in Palestine than those that have brought to light so much of the ancient city of Gezer. These excavations have been undertaken by the Palestine Exploration Fund, and an illustration lately published tells something of the splendid results of their labor. They have unearthed houses built of rough, undressed stone set in mud, direct successors of the primitive cave-dweller; stones upon which the Canaanites sacrificed children to their gods, and the sockets in which were erected the "Asherah" that the children of Israel were commanded to destroy. The palace of Simon, the Maccabee, has also been excavated, and a bath house furnished with drains and a furnace has been discovered. The fortifications, of which considerable traces remain, demonstrate even today the high strategical importance that Gezer possessed in the days when it was a flourishing city, founded, according to the authorities, 5000 years ago.

The American Museum of Natural History, in New York, re-

ceived from Egypt in October, twenty-seven cases of rare fossils, about six hundred specimens in all, comprising forms new to science, exceedingly valuable fossils of the ancestral elephant and of an extraordinary beast, the *Arsinoitherium*, which is not closely related to any living form or any extinct group. It is conservatively estimated by geologists that these animals existed more than a million years ago. These fossils are the product of an expedition financed by Morris K. Jessup, president of the museum, and sent to northern Egypt by Dr. Herman C. Bumpus, the director, to Prof. Henry C. Osborn. (See *Soc. Ant.*, Vol. XXIX, p. 186.)

The first report of the Cornell expedition to the Assyro-Babylonian Orient has been received by Prof. Sterrett, its organizer. The party consists of A. T. Olmstead, B. B. Charles and J. E. Wrench. The report says that the principal sites of the region explored have been fixed astronomically for the first time, disclosing many defects even in the best maps.

All the Hittite sites west of Raisarive and Konia have been visited, the inscriptions collated and many new readings have been secured. At Boghaz-Keui, at the suggestion of the German excavators, the Hittite inscription, one of the largest known, and generally considered quite illegible, was studied, and as a result of two and a half days' work the greater part of the inscription was recovered. A considerable number of classic and of Arabic inscriptions have been copied, many of which are new. St. Angola and Boghaz-Keui cuneiform tablets were also obtained, and one Hittite seal.

At Giaour Kalesi, a well known Hittite site, the palace was planned and found to be of a distinctly Mycenæan character. The classic sites of cities in Asia Minor are fairly well established, but very little has hitherto been known concerning the exact location of their earlier representatives. Over fifty sites have been carefully examined and proved to be pre-classic, and of these a considerable portion can be connected with an already known classic locality. The pre-classic site of Iconicum, the most important city of southeastern Asia Minor, has been found. Much of the pottery found there is similar to the early type found at Troy, and a better site for excavation has not yet been seen by the expedition. Over three thousand potsherds have thus far been collected and studied. Most important are the various sheeds of Mycenæan character, showing connection with the Greek world of the time of Homer. In the light of the material collected it seems almost certain, says the report, that some of the most widespread views in regard to the earlier people of Asia Minor and

their connections must be modified or abandoned. A marble idol of a type hitherto found only in the Greek islands in pre-Mycenæan settlements was secured at Angora. This link between the early inhabitants of Greece and of Asia Minor is of very great interest.

M. de Morgan, in his report of last winter's excavations at Susa, speaks of the discovery of numerous and important inscriptions concerning the history of Elam and Chaldea, "the cradle of our civilizations." Among the art objects there is an elaborate statue of King Manichtusu, with its date (4000 B. C.), practically authenticated by an inscription. There is also a superb specimen of painted ceramics of the same century, found at the depth of twenty-five meters amid the ruins. M. de Morgan believes this, with the ante-historic pottery of Egypt, to be the forerunner of the potter's art in the Mediterranean countries.

At a recent meeting of the Paris Academy of Inscriptions and Belles Lettres, M. Maspero, who read a report to the Academy, announced that the barrage for the irrigation of the Nile had done irreparable damage to the ancient monuments, which have been submerged, and especially to the famous Temple of Philæ, which was flooded by water from mid-December until April. The new irrigation scheme, in his opinion, will do even greater damage yet, for the Temple of Philæ will be submerged twenty-five feet. The Egyptian government has entrusted to him the work of carefully copying all of the inscriptions on the famous temple. "But," says M. Maspero, "the temple must be considered lost forever, seeing that the foundations are saturated like a sponge and the land is undermined. In thirty years at most the temple will have disappeared."

We have already called attention to the first installment of the valuable account of the excavations carried out at Nippur, by the Babylonian expedition of the University of Pennsylvania. The work, which is published under the title "Excavations at Nippur," deals with the excavations carried on during the years 1889-1900, and describes them particularly from the architectural or archeological side. The descriptive text is by Mr. Clarence S. Fisher, one of the architects of the expedition, and he supplements his narrative with numerous plans, detailed drawings and photographs. Part I was devoted to a topographical survey of the mounds marking the city and their general contents. Part II, which we have now received, gives a detailed description of the various walls and buildings which have been mentioned in the

first part. The enclosing walls are first dealt with, then is considered the fortress; and the temple which it covered. Part II contains 49 pages of text with eleven plates.

Some two years ago Toronto University commissioned Charles T. Currelley to proceed to Egypt and collect antiques for the college museum. Mr. Currelley returned to Toronto in October, and was followed soon after by some fifty large cases of ancient ceramics and curiosities unearthed by himself and his helpers. During his work he attracted attention by his discovery of the great statue of the goddess Hathor, and a magnificent shrine of alabaster in the subterranean tomb of Mentu-Hotep, who died 2700 B. C. The shrine is ten feet by twelve feet on the floor and ten feet high. The shrine could not be taken away. On the floor were found bones, sacks of mummy linen, a gold-plated sceptre, bowls and fragments of wood from the Sudan. Plunderers had been there thousands of years ago. The great king had contrived to have his body buried with his treasures in the very bowels of the earth—six hundred feet below the crest of a granite cliff. Ghouls had tunnelled for his resting place, and had covered their tracks with earth and fragments of rock. The dead king had been sealed with his riches far enough, it was thought, from molestation by man. But he was not permitted to rest in peace. The treasure was too tempting.

Mr. Currelley has been burrowing for twenty months in the high granite rocks of the valley of Deie el Bahari, near the ancient city of Thebes. This valley was the home of the greatest deity of the Egyptians, the goddess Hathor, whose residence was thought to be in these cliffs. Sixteen years ago Professor Naville of the Egyptian Exploration Fund began excavating at the granite gateway of the Temple of the eighteenth Egyptian dynasty—about 1500 B. C. Up to the present time he has unearthed two fine temples, which have taken a force of 400 workmen several years to clear away.

The house of Heinrichs in Leipzig begun, under the general title of Vorderasiatische Bibliothek, to issue a series of transliterated and translated texts from the literatures of western Asia that promises to furnish the student of history, theology and literature with rich material from the ancient Orient. These texts are accompanied chiefly by explanations of their pre-historical importance, the philological data being subordinate. The whole series is to fill perhaps three hundred sections, octavo, each of sixteen pages, to cost fifty pfennige; one each year and being about twenty-five sections. As elaborated so far, the work will

furnish inscriptions under six heads, viz: Old Babylonian Kings; Assyrian Kings, Neo-Babylonian, the Achimenes and Later Rulers, South Arabian, and North Semitic. There will also be Chronicles, Leases and other Property Documents; Letters, including those of Tel el Amarna, Legal Texts, and Mythological Texts. Most of the material is more or less old, but unpublished texts are also promised. The first volume of the series has appeared as a volume of 275 pages, entitled "Die Sumerischen und Akkadischen Königsinschriften," edited by Fr. Thureau-Dangin. These inscriptions are arranged under twenty-one heads, evidently chronologically. An appendix follows, together with a list of abbreviations, signs, and proper names. A second volume is to follow in the near future, "Die Amarna Tafeln," in eleven monthly installments. The series is not intended exclusively for specialists, but for scholars in general anxious to get as near as possible to primary sources.

The theory advanced by biblical students that the early Jewish patriarchs were not historical characters, but tribal myths, is attacked by Dr. Olaf A. Toffen, of the Western Theological Seminary, in a book just published in Chicago. He, for example, identifies Joseph with the mighty Sesostris III, and he believes that he has made clear the much vexed subject of the chronology of the Judges.

The Italian government is planning to found an archeological institute at Athens, after the model of the German archeological schools in Rome and Athens. France, Germany, England, America and Austria have all along been represented, and Italians will no doubt welcome the opportunity for archeological research in Greece which such an institute will afford them.

ETHNOLOGICAL NOTES

AMERICAN ANTIQUITIES.

Two noteworthy steps have been taken this year concerning the antiquities that are scattered over the semi-arid region of our Southwest. Congress passed a law in June prohibiting the excavation or appropriation of any prehistoric ruins on the public lands without special permit; and this month the Government has issued the first of a series of concise bulletins designed to supply fuller information about these antiquities than has hitherto been published.

A growing evil has been the extensive traffic in relics from the pueblos in Arizona, New Mexico, Colorado and Utah. Irresponsible persons have pulled to pieces cliff houses, cave dwellings, pueblos and many other objects while collecting relics. The real value of these relics has been almost wholly destroyed because they have been scattered far and wide without accompanying scientific records. Hereafter these objects may be collected only for permanent preservation in reputable museums and educational institutions.

Most publications of the Bureau of Ethnology dealing with these prehistoric remains are now out of print, though the demand for them still continues. The new series of thin, handy volumes will, in a measure, take their place. The first is on the antiquities of the Jemez plateau, New Mexico, where prehistoric pueblos and cliff dwellings are very numerous. Several of these bulletins are now being prepared by the best authorities on the areas of which they treat.

This work of preservation and study is to be highly commended. Enough has been learned about some of these districts to show that their former inhabitants lived at least six to eight hundred years ago. Their migrations have been traced to some extent and in a few cases their relationship to modern tribes has been traced.

A GLIMPSE OF THE UNSEEN WORLD.

By the REV. J. MORRIS WHITON, Ph. D.

I. Nearness of the invisible world. Seeing it makes it no nearer; not seeing, no farther off. We have no reason to believe that there is great distance between us and our beloved dead, but only a thick curtain impervious to sound or sight, which

is both for our comfort and our health.

II. An accomplished resurrection. Moses and Elijah appear in glorified bodies as in the resurrection state. Had they alone risen from the dead? Christ was the "first fruits" of the resurrection, the beginning of our positive knowledge of it. The reality had existed before. Here is also an accomplished judgment. They have entered into the fruits of a godly life on earth. Divine judgment belongs to no one time, but continues through all time. When we die out of this life we rise into another, and experience our judgment as we enter on our inheritance of good or evil.

III. Moses and Elijah were widely separated in time and character. Christ is their bond of union, as He is of all in the city of God.

IV. The glorified dead share the interests of those on earth: the advancement of God's Kingdom, all movements towards truth and brotherhood, even the smaller things which are inseparable from the greater. Is not their blessedness impaired by the wickedness and wretchedness they behold? It does not depend on their ignorance, but on their faith in God and His processes of salvation.

What sympathy have we with this heavenly fellowship? Is our main interest, like theirs, the advancement of God's kingdom, or is it in lower, selfish aims? On this depends our future destiny and fellowship.—*Expository Times*.

GOBELIN TAPESTRY.

How many people know that since 1791 no tapestry produced by the famous Gobelin looms has been sold? Several wonderful creations have been presented by France as gifts, but these famous works belong to the state, and a private individual may not buy, no matter how much money is in his purse.

Louise XIV. bought this great establishment in 1662, and ever since, with but short intervals of rest, their famous looms have been producing priceless treasures. A tapestry is designed to be a background and is in reality a picture woven in cloth, though not to be judged as a painting, as there is only a suggestion of perspective, the pleasing effect being in the marvelous harmonizing of colors.

Ten years is often consumed in producing a single piece, the cost being in the neighborhood of \$50,000. Each tapestry is a complete picture, and there are no "set" patterns.

NATURE DIVINITIES.

The Chinese Divinity named Panqu came into being in great

haste, but his beginning was unknown. In dying he gave birth to the material universe. His breath was changed into the wind and clouds. His voice was the thunder. His left eye became the sun, his right eye the moon. The retirement of the sun goddess to the rock cave gave great consternation to the heavenly deities. They met in the dry bed of heaven and took counsel how they should entice her out from the cave. By the advice of Omoikone, the counsellor deity, the long singing birds of the eternal land uttered their prolonged cry before the door of the cave, when she made her appearance.

The Tree of Heaven.—The ancestors of the Nakatenise dug up the roots of the five-hundred-branched tree of heaven and hung on its branches strings of jewels and numerous pieces of cloth.

SACRED BOOKS OF JAPAN.

In Japan the ancestral deity was a remote, mythical personage, who to all appearances had never been a human being, but a divinity of the mythical world, to whom his worshippers were no more related than the Heraclidæ were to Hercules. With the Japanese, as well as with the Chinese, the sun god was produced from the left eye and the moon god from the right eye.

The sacred books of Japan are called Kojike and Nihongi. They belong to 712 A. D. They contain record of ancient matters. They have been translated by B. H. Chamberlain, in Reports of the Society of Japan, Vol. X., 1882.

Cuchallen and Emir, like Sigurd and Brynheld, represent the nature powers, the sun fighting the mists and darkness. The bulls are confined to dawn cows, the storm cows of the Hindoos.

The Egyptian myths are for the most part symbolic veils under which the story of astronomical progress, calendar corrections and theological changes were hidden away by the Priests and Scribes. They were more ancient than the sacred books of Japan, though in that country the mythical period comes to an end in 660 B. C. There is no country in the world where the regulation of the calendar was of more importance than in Ancient Egypt. The coincidence of the overflow of the Nile with the rising of Sirius must have been observed at a very early date and served as a fixed point in the calendar.

INDIAN TRIBES IN MICHIGAN.

News of the death at Gros Cap, a settlement on the north shore of Lake Superior, west of Goulais Bay, of Peter Cogiosh,

probably the oldest Indian resident of the district, has been received.

For the past two years Cogiosh has lived at Gros Cap. When the Lake Superior corporation took over the island he and the others of the Bachtawana tribe who had been living there were moved up the lake, where new homes were made for them. He was 82 years of age and was born on the island that was his home for so long a time.

Peter was a sub-chief of the Batchawana tribe, and was very fond of the number of medals which he possessed, and which on festive occasions always decorated his breast. Some years ago Sir Frank Smith presented to the Batchawana Indians a flag which was delivered into Peter's hands at a public celebration.

In 1819 Gen. Cass set out from Detroit with a large party for the Saginaw. It was a journey on horseback and the territory north of what is now Flint was an almost trackless wilderness. Only twelve years before Governor Hull, at Detroit, had treated with the Indians for the territory now composing the southern part of the state. Cass went as the agent of the government to secure the land to the north. Jacob Smith and Louis Campau, of Detroit, had established trading camps along the Saginaw some years before, and to Campau was given the task of building a council house for the coming of Cass.

Walpole Island, as most people in this part of Michigan know, is the seat of a Canadian Indian reservation. In addition to the Indians there are now residents of the island an Indian agent, Joseph McDougal; a British customs house officer, William Henigan; and an Episcopal clergyman, Rev. Simpson Brigham, now temporarily absent, having gone to New Mexico for his health some time ago. A Methodist clergyman also resides on the island, as does also William Wright and another white man, both of whom have married Indians. Aside from these and their families the inhabitants are all of more or less mixed Indian blood.

There are three churches upon the island—Episcopal, Methodist and Catholic, the spiritual needs of the last congregation being supplied from Wallaceburg. For his long pastorate of thirty-one years, beginning with the Episcopal church in 1845, Rev. Andrew Jamieson is held in kindly remembrance. There are also three schools upon the island, and these are taught by Indians. In addition to the adherents of the churches the census reports show that there are seven pagans or persons who do not believe in any orthodox creed.

The American Antiquarian and Oriental Journal has reached the volume. and will continue as heretofore to give informa-

tion as to all recent discoveries in Babylonia, Egypt, Palestine, and other countries of the far East. It will also contain many articles and notes of the prehistoric races and antiquities of this continent. It is well known that the aboriginal races are rapidly disappearing, but they have left their names upon the waters and their records on the monuments. It has been and will continue to be one object of this magazine to describe these.

A comparison will be drawn between the relics and races of this continent and those of Europe, Asia, Africa, and Australia; the correspondence from persons in these countries having greatly increased. It is the design of the Editor to put the magazine on a broader basis, and to seek contributions on Archæology, Ethnology, Mythology and Early History, especially such as may throw light on the religions, customs, and traditions of primitive peoples.

Articles may be expected from those who are following special studies and who are well qualified to furnish information, many of whom are distinguished scholars and writers.

Among those who have been regular contributors are the following: Prof. A. H. Sayce, D. D., LL. D., Oxford, England; Joseph Offord, Henry Proctor, A. L. Lewis, London, England; Lieut.-Col. Mackinlay, British Army; R. H. Matthews, Australia; Prof. R. F. Harper and Prof. Frederick Starr, University of Chicago. Dr. C. H. S. Davis, former editor of *Biblia*, will continue his valuable notes. Contributions on American Archæology will be furnished by Prof. W. E. Gunnison, President Normal University, Las Vegas, New Mexico; Prof. Kinniman, Benton Harbor, Mich.; Wm. C. Mills, Columbus, Ohio; Warren Upham, Minnesota Historical Society; and others. Correspondence in reference to discoveries may be expected from missionaries in foreign lands.

The magazine will continue to be illustrated with original material.

The address of the Editor-in-Chief is 438 East Fifty-seventh Street, University Quarter, Chicago, Ill.

THE ANTEDILUVIAN AGE.

The list of antediluvians in Genesis seems to be based on the idea of a twofold line, the one in the line of Cain succession through Ham, the other the line of Seth through Shem. Seth was the ancestor of Israel and of Moses and the Messiah. Ham's chief residence was in Phoenecia. The earliest divinities seemed to have had their homes in the mountains, but the later divinities dwelt in the temples. Ishtar was the presiding deity of Erich and had a celebrated temple, Eanna. There were four centers

or quarters of the city Shurpula. The country, rich in trees of every spices, sent them to Shurpula. The ships were laden with all sorts of trees. From the mountain of Borsippa cedars and other trees were brought to Telloh. The list of divinities was as follows: Ana, the sky god. Bel was the lord of the mountains, where the seat of the gods was placed as well as the habitations of the dead. Bel was father of the gods. Belit was the mistress of the mountain, the wife of Ellillu, or the mother of the gods. Ea was the god of the earth. Sin, the moon god, was the eldest son of Ellilu. The list arranges the divinities in three generations. In the first came the four great gods, including a goddess. Next to these are placed the sons and the daughters. The god which had a temple at Eridu was called the Divine Father. Nin-Girsu was a solar god. The sun ruled in the clouds, like Apollo, the huntsman; the avenger and the Saviour. Bou was termed the mother, mistress of abundance, resembling Demeter. Later, in the days of Tiglatte-Pileser, a sun divinity was worshiped at Nippur who came to be regarded as a sort of "Chaldean Herakles." He was a "god of light," "the revealer" and "the hero." He was identified as one of the primeval gods. The sun god rises from the divine days, and was identified with one of the primeval gods of Accadia, and became the son of the "home of the firmament." The elementary spirits of the old Accadian fathers passed into the Semitic belief, but were resolved into symbolical representatives of the primordial elements of the world.

THE MYSTIC SYMBOLS OF THE PLANETS.

Cabalistic astrology conceived the universe as consisting of ten concentric spheres. First, the sphere of the zodiac, or Saturn, Jupiter, Mars, the Sun, Venus, Mercury, the Moon, the Mundane Sphere. The spheres of the seven planets were of the greatest importance to mankind. There are magic squares composed of three columns of three each, making nine squares in all. The planetary square of the Hebrews had seven squares each way. It is a remarkable fact that there are medals which have the same symbol resembling a star, made up of triangles, both as to rays and body, the rays consisting of eight triangles and the body of four triangles around a central square. The same method of making a star of triangles was common in America before the discovery, and the wonder is how it came to be. Simply contact, or did this form of star originate on the continents separately? This figure is found everywhere, the cat's cradle. The five-pointed star is Cabalistic in

the Orient, but it is uncertain whether it was used as a symbol on this continent. The circle with the cross and the Nile key were common symbols in Egypt, but are not found in America. The giving of life was symbolized by the Nile key. Water is symbolized by the wavy line, as the stars by interlacing lines, the sun by a circle, the moon by a crescent, the earth by a square or a darkened circle.

There are hieroglyphics in America, but they differ from those in Egypt in the following respects: In the first place, the symbol of the bird, of the eye, the half-closed hand, the ibis, the owl, the tent, the flag, the mummy, are common in Egypt and not found in America.

THE HAGUE CONFERENCE.

During the proceedings of The Hague conference a student of Chinese history discovered in the archives of that venerable empire the record of a similar conference held in China more than 2,500 years before Christ. The circumstances surrounding the two assemblies were similar. The intention of the ancient conference was to abolish war and secure peace among the various tribes and provinces that constitute the great Chinese Empire, which, then as now, spoke different languages and were separated by local prejudices and resentments. Time has softened the animosities to a certain degree, just as it has obliterated boundary lines, although racial rivalries still perplex and endanger the Manchu dynasty at Peking. And even to-day it is necessary for the tranquility of the empire to divide the authority and the honors between the Manchus, the Mongols, the Tartars, the Cantonese, the Chinese and other races as equally as possible.

Forty-four centuries ago a conference was called at one of the central cities of China and delegates came from all directions attended by splendid retinues of wise men and warriors. They were so suspicious that they refused to enter the city and encamped outside the walls. After the delegates had assembled and each, as was the case at The Hague, had proclaimed the most profound assurances of his peaceful desires and intentions, it was accidentally discovered that one of the mandarins wore armor and carried an arsenal ready for action under his gorgeous robes. This provoked the indignation and reproaches of all the rest until it was disclosed that every one of them was armed and armored in the same manner.

This was about the situation at The Hague, and that is the principal reason why the conference did not accomplish most practical results.

PAPER OF THE ST. JOSEPH UNIVERSITY OF
BEYROUTH.

The St. Joseph University of Beyrouth, of whose work for the spread of education in the Turkish empire some account was given last year in the *AMERICAN ANTIQUARIAN*, has now published the first volume of their professor's scientific work on "*Melanges de la Faculte Orientale*," containing several very important essays upon antiquity and history. Among those especially deserving notice is the paper by M. l'Abbe Louis Jalabert upon "Greek and Latin Inscriptions in Syria." In his collection there are about sixty previously unedited, most of which came from the temples at Deir-el-Qala. Several of the texts refer to medical men. A new text from Gebal (Byblos) proves the existence of a *Boule* there in Greek times, as at the neighboring town of Arados.

One of the longest inscriptions is a versified epitaph of a certain Tannelos from the Hauran. The poetry, however, is of the usual epigraphic variety, hundreds of which specimens may be found in the later Greek Anthology.

Pere Jalabert gives a series of texts relating to the god of healing, Asclepios, several of which connect him with shrines once dedicated to the Phoenician deity, Eshmoun. The mixture of the cult of these gods and their identification with each other finally is daily becoming more evident.

The most valuable part of the learned Abbe's essay is the amplification of his monograph at the Paris Academy upon the triad of deities at Heliopolis, in Syria; Jupiter, Venus and Mercury, in which he shows that the last of these gods was added to the other two at a somewhat late period, which accounts for so few monuments representing the three, or their triune emblems, having been preserved.

A most valuable essay of the series is that of Pere Mallon, entitled "*Une Ecole de Savants Egyptiens au Moyen Age*," whose Coptic grammar is well known. His subject here is the valuable series of Arabic and Coptic grammars which were published in the Thirteenth century, necessitated by the almost total disappearance of the Coptic language. It is most curious that whilst neither Greek nor Latin supplemented the native Egyptian tongue, yet though in the Seventh century Coptic was the language of Egypt, by the Twelfth century it had changed to Arabic. Also, by the Tenth century Arabic had become the language of the great Egyptian writers of that date—Severus Aounein and Euty chius and others—used Arabic as their

medium. However, for service within the churches, reading the Liturgy and the study of the Coptic fathers, the ecclesiastic still required to know the Coptic, and, therefore, contemporary with the zenith of Arabic Christian literature, under such authors as Abou Saleh, Ibn-al' Assal and Ibn Khatib, between the Eleventh and Fourteenth centuries were produced the Arabic-Coptic lexicons and grammars which Pere Malet describes. The writers of these philological treatises entitled the grammatical portion a "Preface," and the vocabulary they named by a word of which "Scala" is the best rendering. The latter, however, was more than a mere dictionary, several of the books containing lists of the towns and bishoprics of Christian Egypt.

Some of these works were of such assistance to Champollion, he using for specimens in the Paris library. Another very important one is preserved in the medical college at Montpellier, and another in Cairo in the library of the Coptic Patriarch, where it is catalogued among the philological books. This manuscript, as with others to be mentioned, is therefore accessible to American tourists in Egypt.

Among the thousands of Arabian papyrus talismans is one relating to what will happen "if a man sees the wrath of his father," but this was not necessarily an apparition during sleep.

The subject of ghosts of deceased persons, as illustrated by Cuneiform, is treated of in the *Revue Semitique* for January, 1906. The prohibition of these manipulations by the Hebrew Prophets is now proved to be *must a priori*, and confirms the view that the Old Testament writings bear internal evidence of the dates at which they are stated to have been composed.



RELICS IN THE NATIONAL MUSEUM.

A visit to the United States National Museum has revealed some rare specimens.

In one case there are forty-three bird-shaped objects; seventy-two chunky stones; eighty-three stone gorgets, or what might be called wristlets. Eleven large plates engraved with sun, serpent, and hand symbols. These are most of them from the southern states. The pipes varied according to locality. One hundred stone pipes in tube shape from California; other pipes from Kentucky, Illinois, Missouri, Arkansas, Florida, Delaware, Pennsylvania, West Virginia, Tennessee, North Carolina, Texas and Ohio. Some of these are bird-shaped. All of them are imitative of some animal, and are nicely polished. The most common specimens were the pestles, many of these from New York, but they are quite widely distributed from Maine to California.

The large axes were somewhat numerous, some of them from Michigan and Wisconsin, and some from Pennsylvania and New Jersey. There were one hundred and fifty-three axes from Michigan, but of different sizes.

There were a few chipped effigies, resembling animals, among them the one with claws, such as the beetle and the crawfish are known to have. The diminutive relics are somewhat numerous. The spoon-shaped relics which have elicited so much attention are found here. The stone pendants are quite numerous; pestles and mortars from different states, New York and Kentucky. Carved animal figures from Mexico, one representing a wolf lying down; another a toad; another a coiled dragon with claws. The ancient pottery from the Island of Marajo, collected by E. M. Brigham. A large vessel about three feet high and about three feet in diameter from the West Indies. Obsidian relics; one case full of an assortment of jade and jadette. One case full of copper spears; another case full of engraved stones. Alaska is well represented; also Mexico and Central America, by specimens of jade. The Mississippi tablet is represented by a cast; the original is at Columbus, Ohio. It was taken from a mound near Lafayette Bayou. Nearly all of these relics have been described by Prof. Mason, Dr. Wilson, and others, so that they are familiar to archeologists. A large number of relics from foreign countries are in the Museum. They are from Ireland, England, Naples, Etruria, Egypt, Samoliland, East Africa, Madras, Cambodia, Japan, and Corea. There were some specimens which seem to have been very widely distributed. The stone collars from the West Indies have been bed and are very curious.

The textile fabrics were interesting. It was not difficult to recognize the difference between the specimens gathered in this country and those gathered in foreign lands, but it was more difficult to trace the grades of progress which are supposed to be exhibited in prehistoric relics. It may be said that very large collections of textile fabrics may be found in Pennsylvania and in the museum of Central Park, New York. This museum is arranged in an interesting manner. The most attractive relics, and those which show the most advanced stages of progress, are to be found in the lower story, the first to be reached. The ruder are to be found in the upper stories. This meets a popular demand, but does not quite represent the order of progress, or the stage of development.



POTTERY PORTRAITS

The progress of the human race may, however, be traced as clearly in the archeological relics as in the books which have been written, and in a more satisfactory way.

The pre-historic progress is seen perhaps as clearly in the museums of America, and especially in those which have been able to gather large collections from the two continents. The Archeologists of Boston, New York, Philadelphia and Washington have the advantage over those who are dwelling in the interior, but great progress has been made, and the various collections in all parts of the continent are becoming very interesting and valuable as sources of instruction.

NEBRASKA LOESS

ROBERT F. GILDER

While carrying geological research in the Valley of the Missouri River in Douglas county, Nebraska, during the summer of 1901, it was my fortune to discover what is now known as the Nebraska Loess Man. This discovery has contributed to anthropological knowledge very materially. The wide valley of the Missouri river has been the scene of the remains of primitive peoples, but the only one that began a systematic research three years ago has not yet been seen there. Of the Loess Man, geologists and anthropologists write in declaring that he is a racial development as much above the celestine as the latter lies above the Pithecanthropus. It is the latter that the Loess Man is a direct descendant of.

When the discovery was made I was attempting to prove that the mound was evidence of the occupancy of numerous different groups of man over the neighborhood. My belief was that the mounds were made by Mandan Indians. I was standing on the crest of a hill two hundred feet high, and was looking for the remains of Mandans. I had just finished a trench and had found two crania and skeletons of a primitive type which had been buried intrusively

at the center of the mound had been found. In finding the more modern remains at the center of the mound I ran a trench from east to west through the hill and passed this by one from north to south, securing eight fragments of crania and numerous bones. The fourth day's work brought to light skulls numbered 1 and 2—those of the Mandans. In all, I secured twelve crania—two modern Indians, two Mandans and the sadly battered and fragmentary parts of eight of the more primitive type, the latter being scattered through the earth to the depth of from four and one-half feet and one-half feet in a space eight feet square. The fragments were disassociated, but they have been found to be portions of eight primitive type and have been articulated with little

The facts of the discovery were brought to the attention of Henry Fairfield Osborn, curator and vice president of the American Museum of Natural History, New York city, by my friend and Watson Gilder, editor of the Century maga-

zine. Dr. Osborn came at once to Omaha, making a trip of three thousand miles for the purpose of comparison of the material, also making drawings of the skulls and accompanying skeletal parts. Dr. Osborn's visit was made at a period of the work when but five crania had been secured. His deductions were published in an article in the January number of the *Century* magazine.

Acting upon the suggestion of Dr. Osborn, I asked Prof. Erwin Hinckley Barbour, state geologist and curator of the University of Nebraska Museum, to assist me in the further work at Long's hill, where the skeletons were found, the result being that he assumed charge of all further operations. Dr. Barbour's first day's work resulted in the determination that the primitive remains were deposited when the hill was formed, and that the other bones in the hill had been buried here.

Putnam's *Monthly* for January contained articles on the Nebraska Loess Man by Dr. Barbour, by Dr. Henry B. Ward, professor of Zoology at the University of Nebraska and dean of its medical department, and myself. These articles were written before completion of the work of last year.

In a monograph on the subject of "Evidence of Loess Man in Nebraska," published in the Nebraska Geological Survey, Vol. II (2), Part 6, Dr. Barbour says:

"Unconsciously or otherwise, an investigator is often influenced to see that which seems confirmatory rather than that which is contradictory to his conceptions and beliefs. But in conducting the search for evidence of human remains in the pleistocene the writer has striven against this psychological tendency and has aimed to be severely critical and exact. After continued investigation, he stands ready to give notice of the occurrence of human remains in the loess, and unhesitatingly and unconditionally announces his belief in the discovery of Nebraska Loess Man.

"A road leads from the base to the summit of Long's hill by a rather steep grade, and incident to the wear of travel and guttering by rain the roadbed has been lowered rapidly and runs in a sort of canyon with inclosing walls ten to twelve feet high—constituting a section from base to top. It is a hill of erosion and no discoverable land slip has complicated its simple geology. The summit of the hill, as measured by a surveying aneroid, is 200 feet above the river level and about 150 feet above the valley out of which it rises. The hill is conical and its apex would naturally be chosen by the mound builder as a sightly spot for burial. Further than this, there is no discoverable relation be-

tion. Suffice it to say that the skulls are of the Neanderthal type, with thick, protruding brows, low forehead, devoid of frontal eminences, large parietal eminences, narrow temples, thick skull walls and small brain capacity. They are higher in the human scale than the Neanderthal Man, but lower than the Mound Builder. They resemble the Man of Spy. * * * *

"Owing to the many factors to be reckoned with, the question of age can be discussed intelligently only after continued study. The chief point is that human remains have been found in the loess. As the writer unhesitatingly announces, this, if a fact, as believed, carries man in America back to glacial times. Whether this is the very oldest or newest loess seems a secondary consideration."

Omaha, Neb.

MAGNIFICENT JEWELRY OF ANCIENT GREECE, NOW IN NEW YORK.

Jewels that were worn twenty-four hundred years ago are indeed worth more than passing study! And some of these have just come to New York. They have been purchased for the Metropolitan Museum of Art from the Rogers Fund and are now to be seen in the magnificent gold room of the museum. They are among the choicest in that collection of gems, for the workmanship is as fine as any by modern hands, and no one knows how many thousand dollars would be needed to buy these splendid specimens from the Museum. In fact, they are beyond price, for they could not be duplicated, and any society belle would be safe in wearing these, as no one could or would match them.

Other Greek jewels have been found here and there; but none in any museum in the world, not even in Greece, are any finer, if as fine, as these now in New York. All were found in one grave, but for certain reasons it is not stated when or where they were found. The laws of Greece are very strict about the exportation of antiques, and it would not do to say when or where these were found, as the Greek government might apply for the return of the jewels. And they are too valuable to surrender. This collection was buried with some dame of high rank of ancient Athens, probably at her special request, because her jewels were most precious and she did not like to think of any other woman wearing them after she was dead and buried.

The jewels are well preserved and show that the ancient Greeks cared little for precious stones, but preferred instead artistic forms of pure gold. These jewels include a diadem, a neck-

leavēs were originally beautifully enameled, but this has long since worn off. Still finer than the flowers and so small that a strong glass is needed to study them are the foreparts of winged griffins. These are excellent examples of the Greek devotion to art for art's sake, for the griffins add so little to the general effect that they seem hardly worth all the trouble. These little animals are modeled by hand, not stamped or cast. The two clasps are exceedingly artistic, and the whole is remarkably well preserved. The necklace is only twelve and five-eighths inches long, so it could not have been worn loosely, but must have been worn like a collar, close to the neck.

The earrings are as remarkable as the necklace for design and execution. They are three inches long, and consist of three parts. At the top is a disc decorated with an elaborate filigree rosette; from this hangs a crescent, and from the crescent hang three rows of pendants like those of the necklace, with the double rosettes and winged griffins where they are attached. These are notable for extreme and unusual detail, the pistils and stamens being represented exactly after nature. As a whole, this collection of jewels is equaled in few museums and surpassed by none, even in Greece itself. If a society belle of our day could only purchase a necklace and earrings like these she would proudly show them as of greater artistic value than any gorgeous diamonds worn by others of her set, and her jewels would be quite as costly, for these command high prices on account of their antiquity as well as their intrinsic value.

THIRTY YEARS OF ARCHÆOLOGY.

It was in connection with the centennial at Philadelphia in 1876 that a great impetus was given to the science of Archæology and Anthropology in America.

At that time there was no journal on this continent devoted to the subject, but in the year 1879 *THE AMERICAN ANTIQUARIAN AND ORIENTAL JOURNAL* was established, and the history of the journal has kept pace with the progress of Anthropology ever since.

The thirtieth volume will commence with the year 1908, and the effort will be to make it the most valuable of all.

The following gentlemen are expected to contribute to its pages during the coming year: Dr. Chas. H. S. Davis, former editor of *Biblia* and now associate editor, Meriden, Conn.; Professors H. L. Willett and Robert Harper, of the Sēmitic Department of the University of Chicago; Professor Frederick D. Starr, celebrated for his explorations in Central America and in

Africa; Dr. A. H. Sayce, the celebrated professor at Oxford, England; Mr. R. H. Matthews, of Australia; Mr. Stanisland Wake, formerly of London, now connected with the Archæological Department of the Field Columbian Museum; Mr. Joseph Offord and Mr. Henry Proctor, of London, England.

The scope of the magazine will be very broad, including a comparison between the Prehistoric Archæology of America with that of Europe, Asia and Africa. Especial attention will be given to the subject of Biblical and classical Archæology, and articles will be published showing the harmony of Science and Religion. Arrangements have been made by which information will be furnished in reference to all new discoveries whether in this country or the lands of the far East, and especially Bible Lands.

Our exchange list has greatly increased during the last few years, so that we are prepared to give the latest information in reference to all new discoveries whether in this country, in Europe, in the Bible Lands, or elsewhere.

We solicit the co-operation of all who are interested in the subject of Archæology, and are ready to furnish specimen copies to those interested in the subject. Address

STEPHEN D. PEET, *Editor*,

438 Fifty-seventh Street, Chicago.

ANCIENT BOWLS.

In the museums of London and Paris may be seen a number of bronze and silver-gilt bowls, chased and embossed with delicate and intricate decorations. One of the most famous was found at Palestrina, not far from Rome, and is preserved in the Etruscan museum of the Vatican. The center figure is an Egyptian scene, as manifest by the face and hair. A frieze of horses in motion is ranged around the next circle, with the vacant spaces filled in with birds. In the upper part of the picture, starting from a tiny fortress, a king, apparently an Assyrian, goes forth in his chariot to the hunt, driven by an Egyptian charioteer. The king dismounts, and takes aim with a bow at a stag standing on a mound; the stag is slain and falls. Next, in the shade of a palm-tree, the Egyptian is feeding the horses, while the king proceeds to hang up and divide the stag, part for his feast, and part for sacrifice to the gods. We see the king seated before an altar under the winged disc of the sun-god. In front of the king a hideous ape looks out from a cave in a hillock, watching to slay the pious king unawares. The next scene shows the ape standing upright with a stone in his hand, but the goddess appears from heaven, and catches up king and chariot in her protecting arms. The king returns to earth again,

tramples his enemy under foot, and returns in triumph to the palace whence he went forth.

ANCIENT PHOENICIAN BOWL FROM CURIUM.

Another bowl said to have been found at Curium, on the south coast of Cyprus, during the excavations made there by General Cesnola, has in the center medallion a scene more obviously Assyrian than any shown by the Palestrian bowl. A winged deity, half god half monster, contends with a lion. The spaces around are filled by two protecting hawk-shaped genii. The interpretation of this design as a whole is by no means clear. The next circle shows some curious scenes—animal contests, a lion trampling a hunter, men come to his rescue, one with a bow, another thrusts a spear into the lion's mouth, etc. Notice the scene in the right-hand upper corner of the outside frieze of the bowl. A king, bearing on his head a symbolic crown, manifestly Egyptian, is slaying his foes; he grasps them by the hair, he kills them literally at a blow; beside him stands a hawk-headed sun-deity, Ra, with the solar disc on his head. At intervals along the bowl are formal designs like trees with monsters planted heraldically on either side. A glance at the Assyrian relief shows how oriental they are. These curious bowls suggest several problems: With respect to the preceding one, how came the artist to combine in such strange confusion a king from Assyria, a charioteer from Egypt, and an ape from Africa? Why was the cup found in Italy? Why do its designs reappear on pottery that is Hellenic? And lastly, how came the Curium bowl so far from the land which created the art it represents?

BOOK REVIEWS.

A LITERARY HISTORY OF THE ARABS. *By Reynold A. Nicholson, M. A., Lecturer in Persian in the University of Cambridge.*
Published 1907: Chas. Scribner's Sons, New York.

The Arabs were Semites and belong to the same stock as the Babylonians, Hebrews, Phœnicians. They may be divided into two races according to their situation, the Northern and the Southern, for a trackless desert separates them. The Southern spoke the Himyritic language. The Labian inscriptions in this region date back to 8,500 years. The Queen of Sheba was evidently an Arab princess, or in other words a Labian. The Himyrites belong to the same stock. There are inscriptions which date back to 800 B. C. These were discovered by the celebrated Niebuhr. Some of them were deciphered by Rodger. Halvahr cop-

ied 700 inscriptions in 870. Glaser discovered others. They have been described by Max Muller.

There are castles in Yemen which rise from solitary heights and are very ancient. The literature of the earliest period may be classified into poems and legends. Labian caravans with costly merchandise passed from the Red Sea to the Mediterranean, reminding us of the Queen of Sheba, who came with her jewels and astonished Solomon with all his glory. The year of the Hegira, 622 A. D., marks an epoch in Arab history. Before this time there were war songs, hymns to idols, and the metre varied according to purpose and spirit. It is claimed that even in this remote region poetry and the arts of civilized life had already dawned before the time of Mohammed. There was no written code. No religious sanction but traditional sentiment, custom and tribal government prevailed before the time of Mohammed. A form of knight errantry, the devotion of men and the divinity of women marked the period. It is probable that there was far more purity in the homes of the Arabs before the days of Mohammed. This author states that the heathen Arab was fully equal to the Mohammedan Arab, for virtue was hereditary. Professional musicians prevailed; bands of troubadours passed from one region to another. The oldest poems date from the fifth century. There were oratorical displays and athletic sports, but there were also tribal feuds. The Arabs were virtually Pagans long after the days of Christ. Mohammedanism, notwithstanding its oppressions and lusts, was perhaps better than the Paganism which prevailed before. The prophet pretended to have received revelations which were preserved on palm leaves. These were collected and handed down. The Koran was very different from these. It was supposed to be a revelation. It was written in rhyme but seems to us to be mere doggerel. The following is an illustration:

“ Say God is One,
 God who liveth on,
 Without Father, without Son,
 And Night to them there is none.”

There was nothing spiritual in Mahomet's revelation. His paradise was a pleasure garden, his hell full of convulsions of nature. Mohammed set his revelation off against the Bible and began to oppose the Jews who were dwellers in the desert. Medinah became the Jerusalem, the Koran their Bible, but the two systems were in great contrast. We have nothing but praise for this book. It is very instructive, and after one gets into the subject he will be loth to put the book down until finished.

The dawn of the Golden Age of Arabian poetry coincides with

the first decade of the sixth century after Christ, and the Arabian Homer or Chaucer must have condescended to prose. The composer of odes began by mentioning the deserted dwelling places and the relics and traces of habitation. The germs of Arabic prose may be traced back to an earlier period, about the middle of the third century. Two Arabian dynasties sprang up in Syria. The Pre-Islamic culture attained its highest development about that time. The townsmen formed the most influential element of the population. The rival dynasty on the Euphrates ruled the country around Damascus and Palmyra. Under the quickening impulse of Hellenic culture the aspects of civilization appeared, though the history of the Bedouins is mainly a record of wars, or rather guerillas. More than any man who ever lived, Mohammed shapes the destinies of his people. Though they left him far behind, they looked back to him for guidance and authority at each step. The author of this book says: "I feel convinced that he was neither a shameless impostor nor a neurotic degenerate, but a sincere religious enthusiast, as truly inspired as any prophet of the Old Testament. Pre-Islamic poetry was the natural expression of nomad life. The inevitable reaction in favor of new poetry was hastened by various circumstances. There was no organized book trade. Poets were usually dependent for their livelihood on the bounty of the caliphs. The old Bedouins praised a man only for that which was in him, and drew their images from nature. The influx of Persian and Hellenistic culture transformed thought and style."

LIGHT ON THE OLD TESTAMENT FROM BABEL. *By Albert T. Clay, Ph. D.* Second edition. Philadelphia: The Sunday School Times Co.: 1907.

This is a very interesting book and one that throws much light on the Old Testament History. The great antiquity of man is referred to in the second chapter, the Babylonian creation story in the third, the deluge story in the fourth, the Tower of Babel in the fifth, Babylonia in the days of Abraham in the seventh, the Code of Hammurabi in the eighth, the Amarna letters in the eleventh, the temple records and Babylonian inscriptions in others.

The illustrations are numerous and valuable, for they bring before the eye the stage of art which prevailed as well as the form of writing and the style of building. Hammurabi had his capital at Babylon. Dr. Theophilus Pinches offers a translation of fragments which some hold may refer to the King Chederlaomer, or Kudur Lkagumal. It appears that the bronze age had been reached at this time, for bronze canephoroi have been found which prove this. Babylonia in the days of Abraham was certainly much more

advanced than in the days of Noah, but if one reads the Bible between the lines he will conclude that the metal age had been reached before the time of the flood, for the building of the ark shows this. A very rapid progress must have been made between the days of Noah and the times of Abraham.

A portrait of Thothmes III is given in this book, which shows great skill in sculpture, in fact as much skill as prevails even at the present time. There were temple records 2,000 years before Christ. The cylinders and stele of Nabonidus and Asshurhanipal show both an advanced stage of writing and of sculpture. The obscurity which has so long rested on these early periods has been dispelled, and we find now most remarkable confirmations of the Old Testament History. The name Jahweh, which is the same as the Jehovah of the Psalms, is often met with in the cuneiform literature. In 1890 Dr. Peters discovered a large collection of thoroughly baked tablets, the ruins of an ancient palace were explored, and temple records were found dating 2,000 years before Christ. The Biblical Merodach-Baladan lived at a later date, the time of Hezekiah, and the sculpture that belonged to his age shows an advancement beyond the time of Abraham. The Hebrew cherubim, which may be identified with the Assyrian Bull Collossi, showed that much skill existed in the time of Sargon, 3800 B. C. The contrast between the days of Ashurbanipal, 628 B. C., and the days of Hammurabi is very marked, as can be seen from examination of the cuts aside from the inscriptions. In fact art and literature followed parallel lines as closely in the so-called Bible lands as they did later on in the classic lands of Greece and Rome.

The bird's-eye view presented by the Bible is very correct, but the details which have been brought out by recent explorations about ancient Athens and the ruins reveal the glory which has departed and which confirm the Scripture record in a most remarkable way.

GREECE AND THE AEGEAN ISLANDS. *By Philip Sanford Marden.*

Boston and New York: MDCCCVII.

This book is splendidly illustrated, and gives by its illustrations an idea of the scenery and the architecture of Greece and the Aegean Islands, though ruins prevail upon every side. The frontispiece represents the Acropolis, with the propylæ. The Temple of Nike is also one of the ancient buildings. The Vale of Delphi is shown by a double engraving. The Agora Mycenæ is also represented. An outpost of Arcady gives a view of a bridge which is a wonder, same as the entrance of the Stadium at Olympia.

The grotto of Apollo at Delos carries us back to a very early date. A sculptured tryeme on a rock at Lindon gives us an excellent view of the style of vessels which were common. The scenery departed, but leads us to realize something the style of architecture and of art which prevailed. Greek mythology was embodied in the art and in the architecture. This perhaps would account for the contrast between the ancient and the modern architecture. The book will be sought for on account of its engravings. Other books will be found as instructive with reference to history, but this brings the art and architecture before the eye.

ANCIENT HEBREW LITERATURE. By *Rev. Bruce Taylor*. Vol 1, 2.

This series of books commences with Genesis and goes on through the Old Testament. The introduction is by Rev. E. Bruce Taylor. They contain a brief summary of the different books of the Bible written in a familiar style.

The series really amounts to a new translation of the Old Testament, and contains nothing particularly new, not even commentary. The books are grouped according to chronology, rather than topics: The dates given are 1300 B. C. for Moses, and end with 160 B. C., the end of the prophets. The series may be a substitute for the revised version of the Old Testament, but there is nothing new either in substance or style.

THE GREAT PLAINS, A ROMANCE OF WESTERN EXPLORATION, WARFARE, AND SETTLEMENT. By *Randall Parrish*.

Mr. Parrish has shown in previous publications his knowledge of the regions beyond the Alleghenies. The present effort lies in the category of his "Historic Illinois." It is history in a lighter vein; history adapted to general reading. It makes no pretence to a source basis; it is not free from minor inaccuracies; it has little attraction for the close student; it bars footnote references; and it collects the authorities in a brief "note of acknowledgment" following the Introduction. This list of authorities includes for the most part neither official document nor original narrative, but secondary descriptions like those of Hough, Chittenden, Inman, Bowles, Richardson, and Lummis. Mingled with these, however, will be found occasional excerpts from more serious writers—from Casténada's Journal, from H. H. Bancroft, and from Parkman.

The volume is best described as a collection of border stories and traditions, with running commentaries on contemporary conditions from the Spanish exploration to about 1870. The choice of material is commendable, the weaving skillful, and the interest

well sustained. There is an excellent characterization of the stages of Western development.

The material chosen by Mr. Parrish falls naturally into three groups. In the first group appear Coronado and his Spanish fellow-explorers, Lewis and Clark, the fur-traders, and the Santa Fe trailers. The second division embraces the stage coach, the pony express, and the border warfare following the Civil War down to 1870. Under the third head come the struggle for Kansas, the cattle kings, the Pacific railroads, mushroom towns, outlaws, and scouts. The volume has some spirited and interesting illustrations, presumably reproductions, for the most part, from some older work.

BOOKS RECEIVED

- EVERY MAN'S LIBRARY. Edited by *Earnest Rhys*.
- ANCIENT HEBREW LITERATURE, being the Old Testament and Apocrypha. Arranged by *Rev. R. Bruce Taylor*. Four Volumes.
- RELIGIONS. ANCIENT AND MODERN. The religion of Ancient Scandinavia. By *W. A. Gragie, M. A.* 70 pages.
- JOURNAL OF THE TRANSACTIONS OF THE VICTORIA INSTITUTE OR PHILOSOPHICAL SOCIETY OF GREAT BRITAIN. Edited by the Secretary.
- A LITERARY HISTORY OF THE ARABS. By *Reynold A. Nicholson, M. A.* Published by Chas. Scribner's Sons. 500 pages.
- ANNUAL REPORT OF THE BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTION for year ending June 30, 1906. Government Printing Office.
- LIFE IN THE HOMERIC AGE. By *Thomas Day Seymour*. New York: The Macmillan Co. London: Macmillan & Co., Ltd.
- JOHNS HOPKINS UNIVERSITY STUDIES IN HISTORICAL AND POLITICAL SCIENCE. Edited by *H. B. Adams, 1882-1901*. J. M. Vincent, J. H. Hollander, W. W. Willoughby, Editors.
- MARYLAND DURING THE ENGLISH CIVIL WARS. Part 2. By *Bernard C. Steiner*, Ph. D. Associate in History, Johns Hopkins University, Baltimore: Johns Hopkins Press. Published monthly, April, May, 1907.
- THE SATAKA; or Stories of the Buddha's Former Births. Translated from the pali by various hands under the editorship of Professor E. B. Cowell. Vol. VI. Translated by *E. B. Cowell, M. A.*, formerly professor of Sanskrit in the University of Cambridge, and *W. H. D. Rouse, M. A.*, Litt. D., Univer-

sity teacher of Sanskrit and Headmaster of Perse Grammar School. Cambridge, at the University Press. 1907.

UNIVERSITY OF CALIFORNIA PUBLICATIONS: AMERICAN ARCHEOLOGY AND ETHNOLOGY. Contribution to the physical anthropology of California, based on collections in the Department of Anthropology of the University of California and in the U. S. National Museum. By Ales Hrdlicka. Berkeley. The University Press. June, 1906.

THE WASHO LANGUAGE OF EAST CENTRAL CALIFORNIA AND NEVADA. By *A. L. Kroeber*. University Press, Berkeley, September, 1907.

THE JOURNAL DE LA SOCIETE DES AMERICANISTES. De Paris. Nouvelle Serie, Tome IV, numero 1. Au Siege de la Societe, Rue de Buffon 61. 1907.

VORTEX PHILOSOPHY; or The Geometry of Science, Diagrammatically Illustrated. By *C. S. Wake*. Chicago. Published by the author. 1907.

EGYPTIAN EXPLORATION FUND: ARCHEOLOGICAL REPORT, 1905-1906. Comprising the work of the Egyptian Exploration Fund and the Progress of Egyptology during the Years 1905-1906. Edited by *F. D. Griffith*, M. A. With illustrations. London.

ANALES DELL MUSEO NACIONAL DE MEXICO, SEGUNDA EPOCA. Tomo IV. Number 7. Mexico. Imprenta del Museo Nacional, 1907.

THE FORMATION OF THE NEW TESTAMENT. By *George Hooper Ferris, A. M.* Philadelphia. Griffith & Rowland Press, 1630 Chestnut Street.

FATHER PIERRE FRANCOIS PINET, S. J., and His Mission of the Guardian Angel of Chicago. A. D. 1696-1699. By *Frank R. Grover*, vice-president of the Evanston Hist. Soc. A paper read before a joint meeting of the Chicago Historical Society and the Evanston Historical Society in the Chicago Historical Society Bldg. Nov. 27, 1906.

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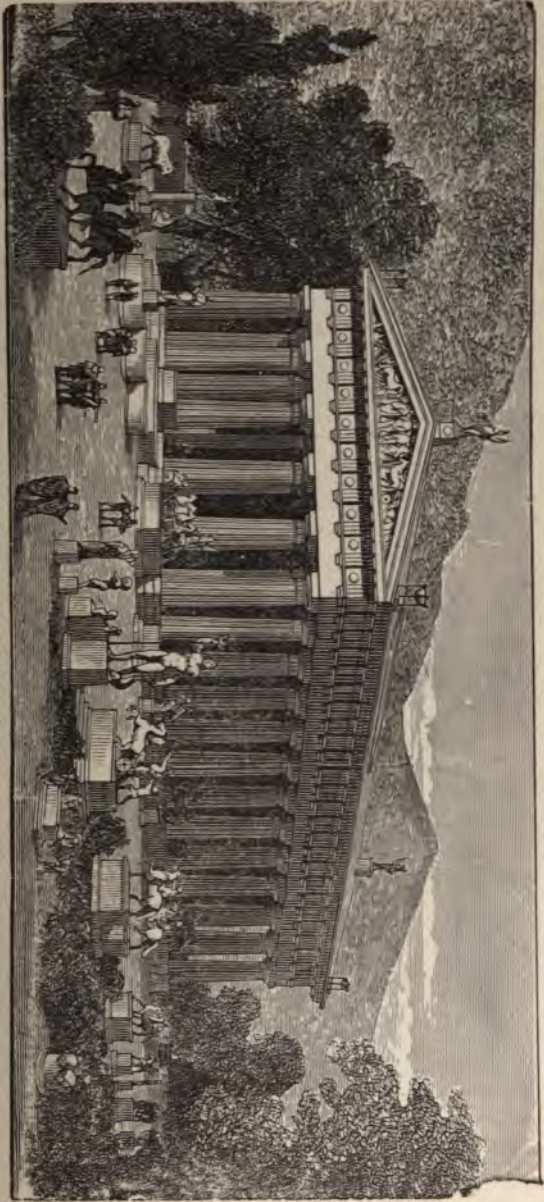
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GREEK ARCHITECTURE.



KUINS OF ROMAN ARCHITECTURE.

THE
American Antiquarian

VOL. XXX

JANUARY AND FEBRUARY, 1908.

No. 1

SOME PUZZLES OF ROMAN ARCHAEOLOGY.

BY J. O. KINNAMAN, A. M.

The Roman Forum and the Palatine Hill! What a volume of history in those words! No other equal area has had such a profound influence upon the history of the world. The Acropolis at Athens was a great and mighty factor in the evolution of the human race, yet it was as zero compared with the Forum and the forces that emanated therefrom.

In this valley between the Palatine and Quirinal were wrought the seeds of the Twentieth Century Civilization. Here the destinies of nations were decided, here was the center of the power that gave the world law, order and organization. This historical interest is not confined to the Forum alone, but every spot, every square inch within the walls of Servius is redolent with contributions toward world-good. We do not know all the places, we cannot locate all the things that played a part in this drama of civilization, for the topography of the city has its unsolved problems.

It is our present purpose to discuss some of these questions. We do not pretend to answer them, but mayhap we can offer helpful suggestions.

We will begin with the Palatine. This is the hill upon which the original Rome was built, be the founder whom he may. Here we find the oldest remains, dating from the Kingly Period. At the present it is covered with the remains of the palaces of the Cæsars, with the exception of a space 525 feet long and 318 feet wide at the west corner, where are found the relics of the Kingly Period sacredly preserved by the Emperors.

In the study of the Palatine there are several things that must be kept in mind:

1. The Palatine was originally almost square, each side measuring approximately 1,350 feet. It is now more nearly circular in form, measuring 1,240 feet in circumference; it is 154 feet

above the sea level and 96 feet above the present level of the city of Rome.

2. The Palatine was selected by Augustus as the site of royal residence, and on it was erected the first palace, the *Domus Augustana*.

3. Tiberius added a wing to the house in which he was born, the *Domus Germanica*, thus producing the second palace, the *Domus Tiberiana*. This palace he connected with that of Augustus by an underground passageway which still exists.

4. Caligula extended the palace of Tiberius toward the Forum, thus covering the entire northwestern portion of the hill.

5. Nero occupied the northeastern part with his Golden House. After the suppression of the Golden House, Domitian converted the grounds into the gardens of Adonis.

The Flavian Emperors gave the first unity to the different palaces. They also built the first separate state apartments (*Aedes Publicae*). The house of Augustus was rebuilt together with the so-called Stadium. Hadrian and the Antonines merely kept existing buildings in repair. Hadrian, by the way, did add the hexedra to the Stadium.

Septimius Severus added to this great mass of masonry a mighty range of buildings facing the Cælian. Later Severus Alexander and Heliogabalus added still more buildings. This in brief is the main outline of the topography of the Palatine.

Now we are ready to study some of the puzzles that confront the archæologist in this region. We speak of the Stadium just as if we knew exactly what it is. The name Stadium has been given to the edifice between the house of Augustus and the Baths of Septimius Severus. By some authorities it has been called the Stadium because of its shape and dimensions. It is 160 meters long by 47 meters wide. The true length of a stadium is 177.40 meters. Two fountains occupy the place of the goals. Another theory that holds its position pretty well is that this space was not a Stadium, but a Xystus or garden belonging to the house of Augustus. Its building is usually attributed to Domitian when rebuilding the *Domus Augustana*. But its original foundation must date from the time of Augustus himself. Undoubtedly in the time of the founder of the Empire it was merely a landscape of flower beds enclosed by a wall. There are no traces of seats, steps or porticos that would go to make a Stadium. It is further probable that Hadrian built the portico composed of two stories. Septimius Severus added the finishing touches in erecting the hexedra.

Theodoric was the last to rebuild the structure. Whatever it may have been before, Theodoric changed its purpose, at least.

The so-called arena was changed by him into a basin shaped like a bathtub, but it was not water tight, and therefore could not have been used for that purpose. It seems that this last reconstruction must have been used for a small amphitheater, for the basin was built upon about three feet of rubbish. This last demonstrates the fact that the building must have been in a very ruinous condition when it was rebuilt for the last time; this must have been caused, in part at least, by the same earthquake that wrought havoc with the Coliseum.

Now can it be stated what this building really was, and by whom its original foundation was laid? It is more than probable from its position that it was originally a flower garden laid out by Augustus, and was part of the pleasure garden of his palace. What it may have become later is a matter of mere conjecture. Xystus or Stadium, whichever it may be, a solution for its mystery, could one be found, certainly would throw a great deal of light upon the life of the Palatine. Our present knowledge engenders merely a dispute over technicalities that defy proper and clear-cut demonstration.

When Vespasian was elected Emperor in 69 A. D., his first thought was that of reducing the imperial residence to its old limits of the Palatine. Therefore, in pursuance of this plan, he began to demolish the Golden House of Nero and build the Flavian amphitheatre. Yet, with all his zeal to appease public clamor, and at the same time to make himself popular, he could not refrain from building himself a new palace. This palace stood between the houses of Tiberius and Caligula on one side and that of Augustus on the other.

Domitian has been called a Midas. Everything he touched turned into gold. He was not content to build a mighty palace alone, but in accordance with his taste everything must be in proportion. Therefore it is necessary that this *Aedes Publicæ*, as Nerva called the palace, must have grounds that would help to display to advantage the great mass of masonry.

So Domitian laid out a garden of great luxury and, in accordance with oriental style, called it *Horti Adonææ*. The idea was borrowed from the Assyrians, who were accustomed to dedicate all such gardens to Adonis, the promoter of plant life. The question now presents itself for solution: Where was located the *Horti Adonææ*? The question is more easily asked than answered. When Domitian cleared away the remains of the Golden House on the northeast corner of the Palatine, it is more than probable that he converted the space thus acquired into the above named gardens. This is the only space that fits the marble plan of the city, a fragment of which we possess,

of the Palatine, the ruins of these grounds. Its modern name is the Palatine Hill, but the name of an area has some relation to the name of the hill. In the Acts of the Council of Nicaea, Constantine is said to have been martyred in a garden on the Palatine Hill. The tale is not trustworthy as a historical fact, but the name is more or less genuine. The name of the hill is derived from the name of a mag. Count Palatinus, who in the 10th century had marked out the principal part of the hill. He marks everything which he has marked out with a spot which he calls an unguentum. In the 12th century later dedicated a chapel in the spot which he had marked out as the spot where Constantine had been martyred. This chapel was dedicated to the Holy Spirit. Now we know that the name of the hill is the appellation of what is now the Palatine Hill, from the fall of the empire to the end of the 10th century. There is no primary evidence and several secondary pieces of evidence which date with some degree of certainty to the 10th century. One of the most beautiful gardens of the Palatine Hill will take more primary evidence to fully establish its location. Any visit to the Eternal City cannot afford to neglect this part of the Palatine.

One of the most important problems remains for our consideration here is the Septizonium from the Palatine. Few remains of the Septizonium are better or more widely known than the Septizonium. The structure of Septimius Severus is well known to the architects and linguists are still discussing the meaning of the name "Septizonium". Septizonium was the name applied to that part of the palace facing south. From the name we can naturally infer that there were seven rows of columns (*Septem zonos*). These rows formed balconies. On the symbolical they probably represent the seven planets or bands of astral spheres, which had of building was just coming in at the time of Severus.

Jordan and others contend that there were not seven rows of balconies, but only three at most. The purpose for which it was built was to mask the structures behind it. If this be true, three rows would not fulfill this intent; it would not even mask the sub-structures. Drawings exist, 1560, which were sketched when the palace was in a ruinous condition; these drawings show three rows of balconies. The question is not so much as to whether there were three or seven rows as whether there were six or seven rows of porticoes and columns.

The existing ruins of the palace of Severus are 165 feet high. The Septizonium was built as a facade to this palace and as screen to the other buildings behind. If this be true, the screen

must have been very high, for the palace originally was much higher than the extant remains. If we were to balance probabilities in the light of known facts, it would seem to me that the weight of evidence must be toward the conjecture of more than seven rows rather than less that number.

Let us now move our view-point and betake ourselves to the Forum. While the area of the Forum is small, yet it has many unsolved problems.

When Romulus was fighting the Sabines, victory perched upon the banner of his enemies; in despair he prayed to Jupiter to stay the onslaught of the Sabines, vowing a beautiful temple to "the father of gods and of men." Romulus never fulfilled his part of the contract though Jupiter did. The temple was built by M. Atilius Regulus in 286 B. C. Now the question is: Where was this temple located and is there any extant remains? Classical writers place the temple of Jupiter Stator near the Mugonian gate, at the highest point of the Nova Via nearest the Summa Sacra Via. It was also included within the fourth region. These indications concur in placing the temple on the site of the Turris Chartularia. A famous bas-relief places the temple side by side with the Arch of Titus.

Usually a mass of concrete on the Palatine at the entrance of the palace of Domitian is pointed out as the cella of the temple. But this mass has nothing in common with the foundation of a cella. It is the foundation of one of towers built by the Frangipani. The blocks of peperino of which the Chartularia is built are probably from the cella of the temple. So, taking primary evidence into account, we may with certainty locate the temple beside the Arch of Titus with its entrance facing north. We may also reasonably conclude that the Turris Chartularia marks the site of the temple of Jupiter Stator. The query may arise: If the Chartularia marks the site, was the Arch of Titus built, as it were, upon the steps of the temple? No. Originally the Arch stood a considerable distance further north than its present location. Late in its history the Arch of Titus was moved and made a part of the fortifications of the Frangipani. When the Arch was moved the course of the Sacra Via was also changed. Keeping these things in mind, there remains no difficulty in making the Chartularia mark the temple of Jupiter Stator.

Between the column of Phocas and the street of Janus we come upon one of the most interesting relics of the Forum. These are the plutei or screens of white marble with bas-reliefs on either side. Each screen stands upon a comparatively modern base of travertine. These monuments were found in September, 1872. They have been of great value in unraveling the topog-

raphy of the Forum. Though some objects are represented in conventional form, yet they may readily be identified. On one side we have the Emperor seated upon a *seggestum* addressing a female figure, which Professor Renaud suggests is Charity bringing to the Emperor's notice the needs of Italy. One of the bas-reliefs represents the burning of the tax rolls. This act of generosity was performed by Trajan, so the Emperor must be Trajan.

The reliefs locate the Rostra Julia, the Arch of Augustus, the Temple of Castor and Pollux, the Basilica Julia, the Via Viscus, the Temple of Saturn, the Rostra Vetera and the Temple Vespasian, thus giving us in the main the topography of the Forum.

Now the question arises: What was the purpose of the *plutei*? In regard to this there are several theories advanced. Nichols suggests that they formed an avenue along which processions moved to an altar. Middleton advances the theory that they formed a gangway through which voters passed. Professor Planter, following Thidenat, gives them a place on the Rostra Vetera.

Whatever their original purpose, which no amount of technical discussion can settle at present, it seems certain that the *plutei* do not stand in their original position. They were probably erected in their present position by Diocletian after the fire of Carinus. Could it be that they are the frieze of some temple, all traces of which are now lost? We do know that three buildings stood near the column of Phocas and the present site of the *plutei*. The suggestions offered by Nichols, Middleton and Thidenat seem merely guesses.

On the west end of the Forum we have the most venerable of monuments, the Rostra Vetera, the platform from which, for centuries, the warfare of words was carried on between Democracy and Aristocracy. The platform was built between 449 and 438 B. C. At the former date the Volcanal is mentioned as the platform from which orators addressed the people, the latter date marks the first mention of the new tribune. The Rostra was consecrated by the Augurs when it was built. A building or work of any kind once thus consecrated could not be moved. If it fell into ruins and had to be repaired or restored, it must be on the same spot that the former structure occupied. So from a religious standpoint (religion ruled with an iron hand), it was impossible in any manner to remove it from its original site. But Cæsar could build a new Rostra. He took advantage of the opportunity and built the Rostra Julia at the opposite end of the Forum. Cæsar may have enlarged the Rostra Vetera and repaired the damages caused the revolution of the Clodians, but nothing more. We feel assured that the relative position of

monuments that remain *in situ* have never been changed in spite of the argument to the contrary.

The question has often been discussed: Where stood the equestrian statue of Domitian? In 1873 official announcement was made that this monument was found. But the archæologists were too careless in their observations and thus made a mistake. They identified a rough piece of masonry without foundation, resting directly upon the travertine pavement of Diocletian with this monument of the Golden Age. This piece of rough and careless work probably belongs to the Caballus Constantini which is mentioned in documents of the sixth and seventh centuries. It must be remembered that the monument of Domitian could not have survived the "memoriæ damnatio" and therefore was probably demolished on the very day of his death.

If this be true, any attempt to locate this monument from existing remains will be in vain.

There are many problems yet to be solved more interesting in many respects than the ones mentioned, but they are more complicated and technical than it is wise to discuss in this article. To illustrate a little further: The Pantheon—what is it? Who built it and what mechanical means were employed in its construction? How account for the portico? Again, have we a correct idea of the XIV regions of the city as mapped by Augustus? What is the correct location of the Lupercal, the Tarpeian Rock and the Gardens of Mæcenas? How was Rome buried, when did the Forum cease to be the meeting-place of the *populi Romani*?

We could go on multiplying these ad infinitum. All the problems that now confront us must be solved before it is possible to know all about Roman civilization and its influence upon our own civilization.

A work of serious erudition, in an historical field not yet completely covered, has been begun by Camille Jullian, professor at the College de France. The first two volumes of his "Histoire de la Gaule" are only the beginning. They deal with the Gallic invasion and Greek colonization, and with the independent Gaul. Four other volumes are to follow: The Roman conquest and first Germanic invasions; government by Rome; Gallo-Roman civilization; and the Lower Empire. In the first volume there is a full treatment of two interesting questions—the Greek foundation of Marseilles and Hannibal's crossing of the Alps.

THE ARCHAEOLOGY OF LANGUAGE.

BY CHAS. W. SUPER.

By the term which stands at the head of this article we mean the study and investigation of the laws that govern the expression of the thoughts and feelings of men by spoken or written words. The term "archæology" is usually applied to a systematic examination of all those materials of whatever name or kind that convey to us the data for comprehending civilizations more or less extinct. An archeology of art, for instance, deals with painting and plastic, with architecture, with the modes and materials for writing, and with the domestic handicrafts. Human groups, therefore, that have not advanced beyond the fabrication and construction of those articles that are intended to serve merely an immediate use can have no interest nor furnish any materials for the archæologist. Such peoples as the Patagonians, but especially the Fuegians and Eskimo, the Kaffirs and Hottentots provide for him virtually nothing. They have no history and do not themselves show any interest in their own past; although they have probably been as long on the face of the earth as the Mesopotamians, the Egyptians and the Greeks of ancient times. Moreover, these rude tribes still exist while the Oriental peoples have long since passed away and left to us only the imperishable remains of their handiwork. But the archeology of language has this peculiarity and possesses this advantage that all the human groups on the face of the earth not only have an existence rooted in the far distant past, but they still use the materials that were employed by their remotest ancestors. The speech of the rudest tribes as well as that of the most advanced nations has, indeed, undergone important modifications in the course of time, but no radical changes. From a study of the language of the Innuits or the Papuans now in use we are able to form a fairly correct conception of what it must have been in the beginning, using the term "beginning" in a somewhat restricted sense. If we stand on the banks of the Missouri at St. Louis, or of the Ohio at Cincinnati, and observe the volume of water rolling by, we may form a tolerably just idea of the extent of country drained by these streams. It is true we may be mistaken. The Nile is probably no larger at Cairo than at Assuan or even higher up. But the fact that the river of Egypt is an exception in this regard does not invalidate the principle of reasoning by analogy in matters of this kind.

In the use of analogical reasoning for the study of human speech we are on comparatively safe ground, because we have no justification to believe that the human vocal or-

gans were ever different from what they are now; or that the laws of phonetics still operative have undergone a radical transformation. Whether rightly or wrongly, philologists believe that they can deduce the original form of a word by the application of phonetic laws which may be formulated by an examination of a considerable number of examples that exhibit the same phenomena. For example, if we find in Sanskrit a root *pad*, in Zend *padh*, in Greek *pod*, in Latin *ped*, in Lithuanian *pad*, all having some relation to the foot, we may take it for granted that these roots were merged in one whence these words grew forth as branches. If then further we find in the old Norse *fjotur*, in Gothic *fotus*, in Old High German *fezar* and *fuoz*, with the same meaning, there is a strong presumption that these words also belong to the same group, or are descended from the same radical, notwithstanding some differences in their form. If then still further we find in French *pied*, in Spanish *piede*, in Italian *pie*, we have almost a demonstration that this entire series of words is related. If then further we are able to trace a large number of words in this way by observing a regular phonetic law we have evidence stronger than mere probability that all these words sprang from one common source and belonged to some language that was the parent of them all. Besides this, if in the oldest form accessible to our researches we find in a number of words the vowel *a* that recurs in other languages in a less sonorous and weakened form we may take it for granted that this particular word in the primitive language of this stock contained this vowel.

It cannot be said that a normal human being will learn to speak whether taught or not. This only takes place when he hears others speak; he must have some incitement. Deaf persons are, I believe, always mute. I knew two deaf-mute brothers who were good mechanics and more intelligent than some of their brothers and sisters who are said to be "all right." People spoke to them just as they were in the habit of doing to other persons, always, of course, looking them in the face, and had no difficulty in making themselves understood. It seemed hard to realize that they could not talk if they wanted to, or that they were not unhappy in their silence. On the other hand, normal children will invent a language if two or more are together, unless they get one from older persons. Although the study of languages on scientific principles is only about a century old the general subject has sporadically received some attention from remote times. Without taking into account what was done by the Chinese and Hindus it can be said that an answer was sought to the question: "What was the primitive language?" Herodotus

relates that Psammeticus, king of Egypt, was desirous of knowing who were the most primitive people; and not being able to find out devised the following plan: He ordered two children of the common people to be taken from their parents and brought up where they would not hear a word spoken, their attendants having strict orders to remain mute in their presence. After a time the children came running to their keepers with outstretched arms crying *bekos*. Having done this on two or three occasions the king set himself to work to ascertain in what language *bekos* was found and with what signification. He learned eventually that it means "bread" in the Phrygian tongue. Hence he concluded that the Phrygians were more ancient than his own countrymen. Plato, in the *Cratylus*, discusses the question whether words are natural or conventional; in other words, whether there is any reason why an object shall have one name rather than another. He does not inform us what his conclusions are. Aristotle, on the other hand, is clearly of the opinion that the signification of words is purely a matter of convention.

Lucretius, following some Greek predecessor, probably Epicurus, is convinced that nature compels vocal utterance and necessity invented names for things almost in the same way that children use gestures to indicate their wants. He thinks it silly to suppose that one person gave names to things, for if he had done so he would, in the very nature of the case, not have been understood by anybody. He can see nothing remarkable in this, since even the lower animals express feelings and emotions by vocal sounds. He explains at great length how language was gradually developed by association, going into detail as if he had been present and taken part in the proceedings. He is probably as nearly correct as the average newspaper reporter when he sends in an abstract of a scientific lecture. According to Diodorus, men originally roamed about singly; but in order to protect themselves against the attacks of wild beasts, they united into groups. Later, after they had begun to take notice of surrounding objects, they designated some by inarticulate, and later by articulate sounds. Finally they learned to express all their thought by means of words. According to Vitruvius fear drove word. It exhibits a phenomenon common to all languages that have not passed through a period of literary development in its lack of abstract nouns. For example, there are a number of men into groups; but it was the fear of fire produced by the accidental rubbing of branches. According to Lucretius man got his first fire from some object that had been struck by lightning. Subsequently, however, one of the primitive men approaching some burning object and becoming aware of its agreeable effects tried

to communicate his sensations to his fellows by gestures. In this way primitive groups arose. Various objects came to be designated by the same sound, and these sounds eventually developed into articulate speech. The method adopted by Psammeticus for discovering the primitive language was tried by other monarchs. Frederick II, Emperor of Germany, caused two babies to be isolated, but they soon died, it was believed, from a longing for the cradle song. A similar attempt is ascribed to one of the Great Moguls of India, which, however, also remained without results. Robert Henry, in his History of Great Britain, relates, on the testimony of Robert Lindsay (Pitscottie), an experiment made by James IV of Scotland which seems to have been suggested by that of the Egyptian king. As his words are not clear I give the quotation as it stands: "Whether to discover the primitive language of the human race, or to ascertain the first formation of speech, he enclosed two children with a dumb attendant on an uninhabited island of the Forth; and it was believed that the children on arriving at maturity communicated their ideas in pure Hebrew, the language of Paradise."

The three later attempts, each apparently made independently of the others, and of that made in the seventh century, B. C., prove that the belief arose spontaneously in different parts of the world and at widely different times that by means of experiments on very young children it would be possible to discover what was the primitive speech of the human race. Eunomius, bishop of Cyzicus, maintained that God had given names to things which were afterwards revealed to men. Gregory of Nyssa in opposition held that God had merely endowed man with the capacity of speech, but permitted him to invent the individual words according to his needs. Then, growing facetious, he remarks that it would be childish to suppose that God could sit down like a schoolmaster and amuse himself by giving names. He elaborates his general thought at considerable length and with a good deal of acumen. Dante believed that Adam was created with a language, but after the confusion of tongues this was forgotten. Then

"That he speaks

Is nature's prompting: whether thus or thus,
She leaves to you, as ye do most affect it."

The quotation is Adam's answer to a question of the poet regarding this point. Saint Augustine is followed almost verbatim by Saint Thomas Aquinas, whose teaching to the mediæval church summed up in the words: "*Significare conceptus suos est homini naturale, determinare autem est ad placitum.*"

These various opinions are interesting as representing the

views of thoughtful men before the rise of modern science. Within recent times the number of theories has become so great that they may be counted by the score. None of them, however, seems destined to obtain general acceptance. Here is a subject in the investigation of which fifteen hundred years show no advance. It is said that the French Academy of Sciences has a standing resolution to consider no book dealing with the origin of language.

Why does man speak? is a question that has often been asked within the last century, and perhaps as often answered. The general problem is an old one, although it is somewhat differently posited. The reply now generally given is threefold: Because his upright posture made possible for him the use and development of his vocal organs in a different way from other vertebrates; because, in addition, he was endowed with reason, and because, the possession of the proper organs being granted, speech and reason were developed together or *pari passu*. The late Professor Max Muller was the most redoubtable champion of the doctrine expressed in the formula: No language without thought; no thought without language. There is a sense in which this theory is indisputably true. If we include under language all signs and symbols that are intended to convey information, or are used in discursive reasoning, it will hold good. A rude drawing of several soldiers in uniform can be used to tell the same story as if I write: This is an army, or if I put down x plus y , to mean that two unknown quantities are to be added together. It is clearly established that elephants and dogs, to say nothing of less highly organized animals, carry out strains of reasoning in a way that cannot be wholly explained by instinct. Besides, it has been shown that men who have risen a good deal above the lowest stratum upon which the race is known to exist, manifest a conservatism that places them in some respects but little above brutes, in spite of the fact that they speak. When they have become accustomed to seeing their elders do a certain thing in a certain way and have begun to follow this routine, it is almost impossible to get them out of it. It is the observation of this fact that has led some of the foremost of the world's thinkers to deny the immortality of the soul to the great majority of the human race. Can a being have an immortal soul whose stock of ideas and words is completed with the age of mental maturity; who is as impervious to a new idea as a monkey; who seems to have even less intellect than a Newfoundland dog?

Albeit, there is a wide difference between the most intelligent sub-animal and a human being, apart from language. A brute

does perhaps sometimes learn from another brute, but no brute ever taught another of set purpose. The intelligence of the elephant and dog must be developed by man. Among men the individual counts for a great deal. There is usually one man who is wiser or more astute than others and who rises above the common level. It may not be much, but it is something. It is this exceptional ability which in the higher ranks of society is called genius. Genius creates or devises something that had no existence before. This exceptional power gives rise to important modifications of speech just as it creates new institutions. We cannot conceive of a community accomplishing anything of general utility without one or more leaders. History and tradition recognizes this fact by the prominence it gives to such names as Abraham, Moses, Lycurgus, and many others. The culture status of the Australians is usually placed lowest in the scale of progress; yet they have developed a system of writing, or means of intercommunication without the aid of writing, strictly so-called. "They were accustomed to send information, and even describe events, by incising peculiarly formed notches, lines and figures of wood, called 'message sticks.' These would be sent by runners for hundreds of miles, and could be read by the recipient through conventional meanings assigned to the characters." (Brinton.) We need not be surprised that an Australian had intelligence enough to invent such a system of inter-communication and not enough to work out a system of syllabic writing, seeing that this was done but once in the whole history of the human race.

The origin of language has probably been more written about than the origin of man. In fact the latter problem is of comparatively recent date. In earlier times it was no problem at all, since the answer given by myth or revelation was accepted as final. We still have the special creation theory which continues to be accepted by most persons. I have somewhere seen the belief attributed to the late Dr. Brinton that the first man was what we should call a "freak." Some pair of the lower animals by chance produced a being higher than either of the parents. This is special creation by accident. According to the current evolution theory he slowly and painfully, though unconsciously worked his way up from the brute creation, just as all animal life with its infinite complexity was developed from an original cell. When we attempt to answer this question by the ordinary processes of reasoning we realize the utter impotence of the human understanding. We know nothing of new creations; we only know change of form. When, however, we look about us we see on every hand something we are wont to call

matter. It is moved by a force which we may designate as material or as spiritual. But who will tell us whence came this force with its infinite ramifications? Have matter and force always existed? We can only answer in the affirmative, in spite of the fact that such an answer is contrary not only to all our experience, but is absurd, since according to the laws of our minds nothing can come from that which previously had no existence. This law is expressed in the familiar formula: "Ex nihilo nihil fit." It holds good within the entire range of observation and experiment. If then this is true of the smallest grain of sand and the simplest cell, how much more would it seem to be true of the illimitable cosmos that extends on every hand far beyond the bounds of the most vivid imagination? But we are wont to say: With God all things are possible. Whence then came God, accepting the dictum as well taken? Here then is the dilemma between the horns of which we must choose. If the matter is the result of a primal fiat uttered by an omnipotent Being, how came that Being into existence? The answer that he is self-created is also an absurdity according to the laws of our mind. Not only are we unable to conceive of dead matter coming into life or even into existence out of nothing, but it is even more impossible, if the expression be permissible, to conceive of a being endowed with infinite power and intelligence having such an origin.

While it may not be altogether beyond our ability to conceive of matter as being without a beginning, as it is about us on every hand and cognizable by the senses; Deity, on the other hand, is cognizable by the intellect alone; He is a deduction from the orderly arrangement of the macrocosm and the microcosm. We are therefore compelled to choose between the two hypotheses of which we have before spoken.

The primary psychic traits that are common to all human beings probably are: The Social Instincts, Language, Religion, and the Arts of Life. We may define religion in various ways. To make it sufficiently comprehensive it is best to speak of it as the recognition of the Unknown as controlling the affairs of men. Wherever man has become self-conscious his mind postulates a living Creator who is Himself uncreated; a first Great Cause.

The mere fact that persons are born with perfect organs is not proof that they will learn to speak. Nevertheless the fact that two or more normal children, when placed together, will form a language of their own may be accepted as irrefragable evidence that the faculty of speech is a primary one. It is spontaneous under all favorable conditions. It may not be inaptly compared to the electric fluid. We may place together any num-

ber of cells; we nevertheless do not get a current until we unite them. The electric fluid is spontaneously generated under the proper conditions, but the electric current is not produced in this way. To what extent speech is spontaneous may, to some extent, be learned from the history of grammar. A Welsh friend of mine who is a person of considerable intelligence and conversant with English grammar tells me that he can speak his native tongue readily, but cannot write it. Thoughts come into his mind in groups, not as separate words. Language was in use long before grammatical rules were deduced from it. All the grammars of the uncivilized tongues have been constructed by missionaries who first learned the language. Not one of the contributors to the Old Testament knew one part of speech from another. Hebrew grammar dates only from about the tenth century. A similar statement may be made of the Greek.

Dionysius, a Thracian who lived in the first century, B. C., was the pioneer in this field. This was centuries after the Greek language had passed the acme of its glory. The early Greeks studied rhetoric, that is speech in action, but they concerned themselves very little about the morphology of the individual words. The Homeric Poems were to some extent put into their present form nearly a thousand years before the Christian era and are the work of a number of different composers. Except here and there they are what we should call grammatically constructed; but it was done unconsciously. Children whose parents use a language correctly acquire it correctly by imitation without knowing why or how. The late Herbert Spencer thus gives his own experience: "Down to the present hour I remain ignorant of those authoritative directions for writing English which grammars contain. I cannot repeat a single rule of syntax as given in books, and were it not that the context has shown me the interpretation of the word when I have met with it in reading, I should not know what syntax means. Neither directly nor indirectly have I received any of the discipline which is supposed to be an indispensable means of insuring correctness of expression." Yet everybody knows that few writers of English express themselves with more force or greater clearness than Mr. Spencer. He is, however, an exception, and it would be unwise to adopt his method of acquiring a language for general use. But his example is instructive in showing what unusually gifted individuals can accomplish, and how talent and genius work. The great artists in every domain could tell a similar tale. They do not follow laws laid down by others; they are a law to themselves. Genius is a sort of transfigured instinct. Its marvelous and mysterious operation is nowhere more distinctly visible than in speech.

A few lead; the numberless host follows. Our accepted grammatical terminology is often sadly at fault and is wholly unsuited to many languages. But as it is the only one in existence and therefore the only one to which we are accustomed, we use it as best we may. It is not even suited to all inflected languages.

The Basque language is one of the most singular, and to any one but a native, one of the most difficult languages spoken on the face of the earth. There is some justification for the saying that the devil spent seven years trying to learn it, then gave up in despair. The forms now in use seem in a great measure to be remnants of much fuller ones that have in the course of time undergone all sorts of destructive processes, until in many instances only a single letter remains of what was once an entire word. It exhibits a phenomenon common to all languages that have not passed through a period of literary development in its different vocables to designate various plants and animals, but none for animal and plant in the abstract. As there are no abstract nouns. For example, there are a number of stract entities in nature this fact is almost proof positive that language is based on names given to objects that were visible or tangible or both. In some respects the verb is simple; in others it is very complex. Its complexity is caused by the manner of its use. It has only three modes: Imperative, Indicative, and Optative, and two tenses, Present and Imperfect, but an almost infinite number of conjugations. Each of these has four forms according as the speaker addresses an equal, an inferior, a superior, or a woman. In its tenses it agrees with the Semitic tongues; which have likewise a different form for the verb when addressing a man or a woman, and but two tenses. A personal pronoun common to all three genders is a peculiarity of the Germanic tongues. English *they*, German *sie*, Swedish *de* is masculine, feminine and neuter. There is no equivalent to this in Greek or Latin or in the languages derived from the latter. "They," if expressed, must be one of the three genders. In the Romance tongue there is, however, no neuter. The Basque language does not indicate sex; or as the grammars express it, knows no gender. As we have seen, many languages lay a great deal of stress on this feature. The Latin, in passing into the Romance tongues, lost the neuter, but retained the other two genders. When the Norman-French with its two genders came into conflict with the Anglo-Saxon with three, the product was, in the main, a genderless tongue. In their primitive stages the Aryan languages used all three genders in an utterly meaningless fashion. So little correspondence is there between them that knowing the gender of a word in one, rarely helps to recognize it in another. Why this con-

fusion in the primitive mind? We can see that it might personify all objects; but why some and not others? In Greek and Latin "sun" is masculine; in German it is feminine. The Greek has a neuter word for "eye" and another that is masculine. In German there is one word for "woman" that is feminine, and two that are neuter. In Latin and Greek the ending is to a limited extent a guide to the gender of the object it indicates, but it is by no means infallible. In German there are several words that have one gender in one dialect and a different gender in another. In the Slavic tongues the gender is as erratic as in Greek, Latin and German, the endings being about as safe a guide as in the two former. Although in English we have dropped all distinctions of gender even in our possessive pronouns, we still retain them to some extent in the personal pronoun. We can say "my father," "my mother," "my stick," whereas the Roman had to use a different word for each noun, "pater meus," "mater mea," "baculum meum." In the plural there are again three different forms to correspond with the English "my." In the matter of the personal pronoun the Finns and Turks have gone further than we have, for while we employ *they* for all three genders, we still say he, she it, in the singular to correspond with the gender of the object to which the object refers. Conversely, in Finnish *han* means he, she, or it, as does also the Turkish *o*. If we can dispense with the distinction of gender in speaking of an object in the plural there is no logical reason why we should not do likewise in the singular. If then *han* is the third personal pronoun in the singular, its plural might as well be formed regularly as if it were a noun. So we find accordingly a plural *he*, probably abbreviated from an earlier *hane*, just as the plural of *o* is *onler*. This procedure is almost as if we said *hes, shes, its*, instead of *they*. This is just what happens in the Algonquin also and is one of the marks of affinity between these widely separated languages. It may be added in this connection that the Inuit has the same characteristic, so that the third personal pronoun answers indifferently for *him, her* and *it*. It also has but one declension for nouns, pronouns as well as for possessive and participle forms. It will be interesting and instructive to show, in this connection, how the Turkish pronoun is declined. Let us take *bash*, "the head," and the third personal pronoun. We get:

<i>Nom.</i>	bash	o (<i>he, she, it</i>)
<i>Gen.</i>	bashing	aning
<i>Loc.</i>	bashda, <i>at the, etc.</i>	anda
<i>Acc.</i>	bashi	ani
<i>Voc.</i>	ey bash	
<i>Abl.</i>	bashdan	andan
<i>Instrum.</i>	bashla	aningla

The variations are probably due to the laws of euphony in regard to which every language follows its own course. Although the Turkish plural is uniformly constructed, it sometimes takes the form *-lar* and at others *-ler*.

In view of the wide and radical divergences, the fundamental differences among languages, and in view of the further fact that they fall into about three general groups, it is very improbable that they are all descended from one primeval source. Several books have been written in defense of this position: but none of them has received even a qualified acceptance among competent judges. While then a majority of competent anthropologists hold to the monogenetic theory of the origin of the human race, only a handful profess a belief in the monogenetic origin of speech. Even in historic times peoples have given up their native languages entirely and substituted another. Both Hayti and Peru are examples. The modern Greeks have such an infiltration of Slavic blood that their national identity has been in a measure destroyed. Ethnologically the Bulgarians are closely akin to the Finns, but they have completely forgotten their original speech and adopted that of the Slavs whom they conquered about a thousand years ago. It may easily have happened that in the long prehistoric ages a similar substitution of languages took place frequently. At any rate, not much stress can be laid on the speech of a people in determining their ethnic affinity.

It is probable that if a language could be found anywhere on the face of the earth that had been permitted to go the even tenor of its way from generation to generation it would vary very little from its original form. The fact, however, is that from time immemorial there has gone on among men conflict upon conflict to such an extent that one is strongly inclined to believe that man's natural state is one of war rather than of peace. When two peoples or two groups come together in whatever spirit it may be they try to understand each other. One result is that the language of both is more or less changed. R. N. Cust finds that the original language spoken by the great Bantu family of South Africa has been split up into one hundred and sixty-eight dialects. The Algonquin stock is said to be represented by thirty-five dialects that are spread equally wide. We know what happened to the Latin in comparatively recent times. The fact that out of the same original were developed languages differing so widely from each other as the Portuguese, the Italian, and the Roumanian can be accounted for only on the supposition that each one is the result of the contact of the speech of the Romans with a different language spoken by the natives of these provinces.

We see much the same results growing out of the conflict of the Anglo-Saxon with the Norman French. This conflict not only produced the comparatively wide divergence existing between the English and lowland Scotch, but likewise the various dialects spoken in the different English counties, where the older language already exhibited marked differences as the effect of the earlier Teutonic conquest of the island. We can easily imagine what the result would be if two persons, one having an imperfect knowledge of English, the other of German, were to be placed together by themselves and be compelled to get along the best they could.

In 1886 Horatio Hale, a son of the well known authoress, Sara Josepha Hale, and himself a distinguished anthropologist, delivered an address before the Anthropological Section of the American Association for the Advancement of Science, on the Origin of Language, and the Antiquity of Speaking Man, that throws a good deal of light on the former problem. Among other evidence adduced he cites the case of two boys born in a suburb of Boston in 1860 who were constantly together and who not only invented a language of their own, but for a long time refused to learn any other. "They had a language of their own, and no pains could induce them to speak anything else." It was finally concluded to send them to school, they now being six or seven years of age. "For a week," as the lady teacher described to whom they were sent, "they were perfectly mute; not a sound could be heard from them, but they sat with their eyes intently fixed upon the children, seeming to be watching their every motion—and no doubt listening to every sound. At the end of that time they were induced to utter some words, and gradually and naturally they began, for the first time, to learn their native English." A certain Dr. Hun, of Albany, N. Y., thus relates a similar case. "The subject of this observation is a girl four and a half years, sprightly, intelligent, and in good health. The mother observed when she was two years old, that she was backward in speaking, and only used the words 'papa' and 'mama.' After that she began to use words of her own invention, and though she understood readily what was said, never employed the words used by others. Gradually she enlarged her vocabulary until it has reached the extent described below. She has a brother eighteen months younger than herself who has learned her language, so that they talk freely together. He, however, seems to have adopted it only because he has more intercourse with her than with others; and in some instances he will use a proper word with his mother, and his sister's word with her. She however persists in using only her own words, though her parents, who are un-

easy about her peculiarity of speech, make great effort to induce her to use proper words." Some of the words, we are told farther on, had a wide range of meaning, "gummigar," for instance, signifying "all the substantials of the table, such as bread, meat, vegetables and the like; the same word was also used to designate the cook."

About thirty years ago I had an opportunity to observe the first efforts of a child in learning to speak. He was in his thirteenth month, bright, healthy and vivacious, but not precocious. He chattered incessantly and seemed to find great satisfaction in the exercise of his vocal organs. Sometimes he would pick up a bit of newspaper and pretend to read aloud from it, although one could not distinguish any separate words. He was then summering at a farm house and took intense delight in the domestic animals, all of which he designated by the comprehensive name "chign," or "chikn," probably a first attempt to say "chicken," a creature with which he was most familiar. From this and many similar examples it is safe to infer that children make certain terms answer for a large number of objects that seem to them to belong to a general class; and from this as a starting point, gradually learn to differentiate and particularize. This same child showed in many ways that his intellect developed faster than his power of expression. So much was this the case that his aunt frequently remarked that he understood everything said to him.

Another case from the address of Mr. Hale. It refers to two boys resident in Toronto. "Their ages were about five or six, one being somewhat more than a year older than the other. The younger, however, was slightly the taller of the two. They were fine, intelligent boys, and were always together both at home and in the school. Although there were in the family five boys and a girl these children were left much to themselves, and had a language of their own in which they always conversed. The other children in the school used to listen to them as they chattered together, and laugh heartily at the strange speech of which they could not understand a word. The boys spoke English with difficulty, and very imperfectly, like persons struggling to express their ideas in a foreign language. In speaking it they had to eke out their words with many gestures and signs to make themselves understood; but in talking together in their own language, they used no gestures, and spoke very fluently." From these and other observations the author concludes that "it becomes evident that, to insure the creation of speech which shall be the parent of a new linguistic stock, all that is needed is that two or more young children should be placed by themselves in a condition where they will be entirely, or in a large degree, free from the presence

and influence of their elders. They must, of course, continue long enough in this condition to grow up, to form a household, and to have descendants to whom they can communicate their new speech. We have only to inquire under what circumstances an occurrence of this nature can be expected to take place." It is hardly too much to say that these facts, and others of a similar nature that are brought to light from time to time, come as near solving the problem of the origin of speech as it will ever be possible to get. The different children here instanced are clearly cases of atavism of a particular kind such as are now and then seen in the domain of biology. Both in the lower animals and in man organs still exist in a rudimentary state that have ceased to serve any purpose, while others sporadically appear that are explicable only on the supposition that they are a recrudescence of the primitive type. It is not too much to say that the most refined man has something of the beast in him. A highly developed moral sense and a strong will keep it under perfect control.

Athens, Ohio.

THE INDIANS OF PARAGUAY.

The Indians of South America resemble those of North America, but there are differences enough to raise many questions as to the origin of the two races or classes of people. An article in the *Journal of the Anthropological Institute*, Dec. 10, 1901, by Seymour H. C. Hawley, gives a number of plates which show the general features, forms and modes of dress of the people. The country is extremely flat, and several rivers flow from the Andes Mountains and into the Paraguay River. From the plates we may conclude that the people were in a state of savagery, but perhaps in a somewhat advanced condition, inasmuch as the women wear long skirts and the men have blankets which they fastened about the waist, leaving the shoulders bare.

Their habitations were very rude, but were constructed out of upright poles or timbers, with gabled roofs. In this respect they were unlike the tepees or wigwams of the North American Indians. They make pottery by hand. They use the bow and arrow, but have hoes which resemble modern ones. They have two kinds of spears, the blunt-headed or iron-headed, and the tipped or wooden-headed resembling a harpoon.

Their clay pipes are of primitive form. Their clay water jars are globular in shape with no ornament, but projecting knobs at the side with preparations through which cords are passed and used for carrying the jars of water.

The tobacco pipes are carved in the shape of the human head,

with an opening at the top for the tobacco. They have clay vessels which are pointed on the outside. Their musical instruments are of various kinds—wind instruments with reed mouth-pieces, wooden whistles, fiddles and bows, both of these with only one string.

The headdress of the Lingua Indians is very graceful and supposed to be quite an ornament to the head. Generally there hang from it scalplocks, tassels, and embroidered towels. The natives are well clothed, wearing blankets made of wool and dyed. A beadwork bracelet shows much interest and skill on the part of the natives. The pipes are generally made of wood.

Their religious beliefs are peculiar. They persuade themselves that they see the shades of dead people or ghosts. When a person dies his spirit is supposed to hunt his old home, and as a result the survivalists tear down the house and build a new one. Their story of the creation is that from a hole in the ground a witch doctor commanded that a man and a woman should come forth, and they came.

The people have a peculiar way of fishing. They make a fence or dam in the river with the trunks of trees and turn the water into a channel, into which the fish are passed and caught.

There is a pygmy tribe living in forests to the west which is shy and easily frightened. They practice magic and witchcraft, witch doctors being common among them. They have a peculiar way of visiting. They wind their way toward the village along a narrow path, while the friends in the village prepare to welcome them. The chief goes forward, and the leading women go out and relieve the men of their bows and arrows and place them in the open longhouse where strangers sit. The so-called chief resembles the father of the family; he is expected to provide for his followers and work for their welfare. They are unmusical, but have droning chants and use a flute made of bamboo or horn. The bow and arrow are the principal weapons.

The game of hockey is common among them, a sort of battle-dore and shuttlecock played by the children, and dancing is the chief amusement. The women have a dance of their own, where they seem to protect a young girl from the evil spirits. Their standard of morality is higher than with most tribes.

A new part of J. A. Alnquist's "Sveriges Bibliografiska Litteratur" has appeared, issued in the *Handlinger* of the Royal Library of Stockholm, and also separately (Norstedt); it covers the history of public libraries in Sweden proper.

THE TREE OF LIFE.

BY HENRY PROCTOR, F. R. S. L., M. R. A. S.

Among all the nations of antiquity there are traditions of the Tree of Life. Among the Accadians it was called the "Tin-tir" or Life Tree. One of the earliest names of Babylon was "Tin-tir-ki," or Life Tree place. The tree of Life is represented as guarded by griffins, cherubs, or by eagle-headed deities. It was apparently called "Sakh" (Holy), which in Assyrian is "Asher"—the "Asherah" of the Amorites, sometimes translated "Groves" in the Bible. "The conventional form of tree so often found on the Assyrian tablets was that of a vine growing on a trellis. The vine was called in Akkadian "Iztin," or Wood of Life. The jeweled Tree of Life is found among the Chinese, Hindus, and many other nations. The Chaldæan Hercules ("Irgalla," Akkadian for the Sun) failed to gather the fruit of this tree, which was guarded by a serpent.

All these traditions point back to the garden of Eden, which, in the Septuagint and Vulgate versions, means: "Tree of Lives" (*Ets-khayyim*) and the "Tree of Knowledge of Good and Evil," or, as it might be translated by hendiadys, "the knowledge of pleasant evil."

While we may believe the story of the literal Adam, we see a far deeper esoteric meaning when we take the Garden as representing the body of flesh, into which the male-female Psyche descended, and from which the female or mother portion—the Eve or "living mother" was afterwards separated.

We learn from Genesis iv. 1, that the Tree of Knowledge symbolized carnal knowledge, for by the Fall they first discovered their nakedness, and it would seem that by continuing in the blindness engendered by carnal knowledge the way to the Tree of Life was barred.

Christ promises to the overcomer that "to him will I give to eat of the Tree of Life which is in the Garden of Eden of God" (Rev. ii. 7). To continue under the law of generation is to eat of the Tree of Knowledge; to escape from the seduction of the serpent and to come under the law of regeneration is to eat of the Tree of Life.

If the power of life is poured out in generation or wasted in lustful passions, it is evident that the body must suffer; must

be on the road to destruction. Even our scientific men begin to teach this fact very positively. In a great work on "Evolution in Sex," it is said that: "The temporary exhausting effect of even moderate intercourse is well known, as well as the increased liability to all kinds of disease, while the individual energies are lowered."

But higher than any other considerations do we place the teachings of the Master on this point in Matt. xix. 10-12: "All men cannot receive this saying but they to whom it is given. He that is able to receive it, let him receive it."

"It is good for a man," says the greatest of the Apostles, "not to touch a woman." It is only those who are thus "eunuchs for the kingdom of heaven's sake" who can possibly realize what it means to "Follow the Lamb whithersoever he goeth." "These are they who are not defiled with women; for they are virgins"—purchased from among men; first-fruits unto God and the Lamb (Rev. xiv. 4).

In the "age to come" the "nations of the saved" on the earth will have access to the tree of life, by eating of the fruit of which they will be enabled to "live forever" (Gen. iii. 22), as Adam would have done if he had continued to eat of it. But during the present age it is only to the overcomer that the promise is made that he should "eat of the Tree of Life" (Rev. ii. 7).

The Septuagint makes it very clear, in Isaiah lxx. 22, that a continuance of life in the body is insured by eating of the Tree of Life, for it reads thus: "They shall not build and another inhabit; they shall not plant and others eat; for as the days of the Tree of Life shall the days of my people be." "The period of youth shall be an hundred years." Only the sinners shall be cut off at an hundred years old.

So that it is clear that disease and death are the direct result of the fall into carnal generation, but those who follow the lamb "whithersoever he goeth" are "virgins" "not defiled with women," "eunuchs for the kingdom of heaven's sake."

We are taught in the Sermon on the Mount (Matt. v. 8) that carnal lust is equivalent to the act of adultery. This being so, it shows that without perfect purity of thought it is impossible to keep the law of Christ, which holds us responsible for our desires. What force this gives to the injunction:

"Guard well thy thoughts;

Thy thoughts are heard in heaven,"

And how it illustrates the fact that "as a man thinketh in his heart so is he."

Everyone who is willing may have mastery over the body if he will give attention to diet, as the Apostle Paul says: "Every

man that so striveth for the mastery is temperate in all things," so "I keep under my body and bring it into subjection." By following this course we are kept free from evil desires during our waking consciousness, and we find by experience that by retaining all the powers of life a much less quantity of food will serve all the needs of the body. So that instead of eating of the Tree of Knowledge, we are eating of a Tree of Life—forsaking a way which has from the beginning always led eventually to the death of the body, by preserving all the life in the body.

There is every indication in the Bible that sins against the body were the curse which ruined the Antediluvian World (Gen. vi. 2-8). But on the other hand Noah was said to be "perfect in his generations" (*tamim be-doroth-av*).

It is evident from I. Cor. vii. *ff.*, that the Apostle Paul advised Christians to abstain from marriage: "I say to the unmarried and the widows that it is good for them to remain even as I." Only to those who could not gain the mastery and take control of the body he advises marriage (vv. 8, 9).

He no doubt practiced what he taught, and Philippians iii. 10-16 seems to indicate that he longed with intense longing for the immortality of the body. "That I may know Him and the fellowship of His suffering, becoming conformed to His death, if by any means I might attain to the "*exanastasis*"* or the out-resurrection—that is, from among the rest of the dead. This cannot mean the first resurrection, in which all the "blessed and holy" take part, of Rev. xx. 5; but must denote a special or extra resurrection; as he says also in II. Cor. v. 2: "Not that we would be unclothed, but that we would be clothed upon with our habitation which is from heaven. Not that we wish to die, but to be clothed upon now with our spiritual bodies, so that what is mortal may be swallowed up of life."

Of course the mere abstinence from carnal intercourse, and even the perfect conservation of all the life forces, is not sufficient to secure eternal life in the body, although the duration of life may be greatly extended by this means. But at present immortality such as the Apostle Paul longed for can only be secured by the highest spiritual attainment and perfection, for he himself declares that he had not then attained it. "Not as though I had already attained, or were already perfect, but I press on toward the goal unto the prize of the high calling of God in Christ Jesus." "They which run in a race, run all, but one receiveth the prize. So run that ye may obtain."

**Exanastasis ek ton nekron*. The only occurrence of this word "*exanastasis*" in the N. T.

SOME NATIVE LANGUAGES OF WESTERN AUSTRALIA.

BY R. H. MATHEWS.

PART I.

Like the aboriginal languages of all the Australian States the speech of the natives of Western Australia has been very much neglected. In 1842 Mr. Charles Simmons, Protector of the Aborigines, prepared an elementary grammar of the language spoken in the neighborhood of Perth, the capital of Western Australia. This language was practically the same as far south as King George's Sound. It also extended north from Perth about 150 miles or further. The grammar referred to was published in the *Western Australian Almanac* for 1842, which is quite out of print, and can be found now only in a few large libraries.

It is very much to be regretted that no author since 1842 has attempted the preparation of a grammar of any of the languages of Western Australia. With the view of placing the structure of the native tongue before the people of that State in the hope of inducing some of them to do further useful work in this wide field, I have rearranged Mr. Simmons' grammar, with additions which will make it more valuable.

ARTICLES.

The place of the English article is supplied by the various forms of the demonstratives representing "this" and "that." The English adverb "here," in its several native forms, is frequently treated as a demonstrative.

NOUNS.

Nouns have number, gender, and case.

NUMBER.—There are three numbers, the singular, dual and plural. *Yago*, a woman; *yago-gurdar*, a pair of women; *yagoman*, several women. The suffix *man* is a contraction of *manda*, all. Words ending in a consonant are said to take *arra* or *garra*, meaning "again" or "others;" as, *gulang*, a child; *gulangarra*, several children.

GENDER.—Different words are used to distinguish the sex of the human subject, as, *yago*, a woman; *mamarap*, a man; *gulang*, a child of either sex. For animals, words meaning "male" and "female" are employed as postfixes to the animal's name.

CASE.—The cases are indicated by inflexions. The principal cases are the nominative, causative, genitive, instrumental, dative, and ablative. The *Nominative* merely names the subject at rest; as, *durda*, a dog; *yangor*, a kangaroo.

Causative.—This represents the subject in action, and is connected with a transitive verb, as, *yago-al budyor bianaga*, a woman the ground dug.

Instrumental.—This case takes the same affix as the *Causative*. *Ngadjo boat-al perthak bardaga*, I in-a-boat Perth-to went. *Durda gun-al bumaga*, a dog the gun-by was killed, or a dog was killed by the gun.

Genitive.—The genitive takes the suffix *ak*, as, *yago-ak wunna*, a woman's yamstick; *mamarap-ak giddyi*, a man's spear; *kumal-ak garrab*, an opossum's hole or nest.

There are inflexions denoting the dative and ablative cases, but the examples to hand are not sufficiently definite.

ADJECTIVES.

Adjectives follow the qualified nouns and are similarly declined. Comparison is generally effected by a reduplication, and the superlative is formed by the addition of the intensive particle *dyil*: *gwabba*, good; *gwabba-gwabba*, very good; *gwabba-dyil*, best.

PRONOUNS.

Pronouns are inflected for number and case, but are without gender. There are two distinctive forms of the first person of the dual and plural, depending upon whether the individual addressed is included or excluded. Again, there is a set of nominative pronouns for use with transitive verbs, and another set for use with intransitive verbs. These sets, however, are confined to the singular number of the first and second person; in the dual and plural the pronouns are the same for intransitive as for transitive verbs.

Singular	{	I	<i>Ngadjo</i>	<i>Nganya</i>
		Thou	<i>Nyundo</i>	<i>Nyinni</i>
		He	<i>Bal</i>	<i>Bal</i>

Ngadjo and *nyundo* have their terminations changed to *jul* in the future tense: *Ngadjul yonga*, I shall give. *Nyundjul watta*, Thou shalt go away.

I have omitted the pronouns of the dual and plural because the information yet to hand is not sufficiently definite for publication.

There are forms of the pronoun signifying "with me," "for me," "towards me," and other modifications to meet different shades of meaning. The pronouns of the third person frequently

take the place of demonstratives in all the numbers, a circumstance which accounts for the great diversity of the third personal pronouns, which have little or no etymological connection with the others. There are possessive forms of the pronouns in all the persons and numbers.

DEMONSTRATIVES.—The demonstratives in this language, by the combination of simple root words, can be made to indicate position, distance, number, etc. That, *nyagga*; this, *niddya*; that (is it), *alli*; belonging to that, *alluk*; this way, *wunno*; here, *yual*; just there, *alganya nyerung*; here, *inyene*; there, *inyanyellung*; that very one, *nyagabal*.

INTERROGATIVES.—Who, *nganni*? Who (did it), *ngando*? Who (will do it), *ngandyul*? Whose, *ngannong*? What (did it), *yanman*? What for, *yannung*? Where, *winjee* or *winjal*? Is it so, *kanna*? Which way, *injal ngwarros*? Why, *na-it-jak*.

VERBS.

Verbs have the singular, dual and plural numbers.

There is a form for each tense of the verb, as *bumawin*, beats; *bumaga*, did beat; *bumadjul*, will beat. Any person and number can be expressed by using the proper pronoun from the table given in an earlier page. The following is a short conjugation of the verb *buma*, to beat or kill. An example in the first person of each tense in the indicative mood will be sufficient:

<i>Present.</i>	<i>Ngadyo bumawin</i> , I beat now, or am beating.
	{ <i>Ngadjo bumaga</i> , I did beat.
<i>Past.</i>	{ <i>Ngadjo gori bumaga</i> , I beat just now.
	{ <i>Ngadjo karamb bumaga</i> , I beat a short time ago.
	{ <i>Ngadjul bumadjul</i> , I shall beat.
<i>Future.</i>	{ <i>Ngadjul burda bumadjul</i> , I shall beat presently.
	{ <i>Ngadjul mila bumadjul</i> , I shall beat by and by.

There are conditional, reflexive, and reciprocal moods, similar to those shown in my grammar of the Wiraidyuri language.*

ADVERBS.

The following are a few of the most commonly used adverbs of time: Now or today, *yai-i*; tomorrow, *binang*; yesterday, *mar-rok*; day before yesterday, *maira-jain*; immediately, *ilak* or *gwai-titch*; formerly, *karamb*; soon, *burda*; lately, *gori*; long ago, *gorah*.

Of place: Here, *inyone*, *yual* and *nyal*; there, *yellinya*; there, farther, *boko*; yonder, *bokoja*; where, *winyi*; before or first, *gor-*

**Journ. Anthropol. Inst.*, xxxiv, pp. 284—.

ijat; behind, *ngolanga*; last, *yuttok*; near or close, *bardak*; that way, *wunno*; here (in this place), *nidjak*.

Of quantity: How many, *ngamman*; more, *ngatti ngatti*; enough, *belak*; so many, *winnir*.

Of affirmation and negation: Yes, *kwa* or *kai-a*; no, *yuada*; never, *yuatjil*; not, *bart* or *bru*; nothing, *arda*.

Perhaps, *gabbain*; then, *garro*; indeed, *bundojil*; always, *do-wir*; between, *kardagor*; together, *danjo*; apart or separate, *wal-lak-wallak*; below, *ngardagan*; above, *yiragan*.

PREPOSITIONS.

These are always placed after the noun or pronoun. Without, *bru*; with, *gambarn*; among, *manda*; within or in, *bura*; on or upon, *ngadja*; after, *ngolang*.

CONJUNCTIONS AND INTERJECTIONS.

And or also, *gudyir* or *wen*; if, *minning*; or, *ka*; alas! *nyon*.

NUMERALS.

One, *gain*; two, *gudyal*; five, *marjinbangga* (meaning a hand); ten, *belli-belli marjinbangga* (the hand on either side, or both hands).

SURVIVAL OF OLD SEMITIC CUSTOMS.

BY MRS. GHOSU EL HOWIE.

A few years ago whooping cough was epidemic in Shweir (Mount Lebanon) and neighboring villages, and I remember being not a little surprised at being asked to contribute a trifle toward girdling the church. Naturally I wanted to know what was meant by "girdling the church," and I soon learned that certain good souls were going around collecting skeins of thread (or their equivalent, a few cents) in order to knot them together and thus form a girdle, which they fastened to the outside walls of the church in the belief that the patron saint, Our Lady, St. Theckla, St. Peter, or St. George, would take their devotees under their special protection and ward off the disease from the community. I asked the women why they did such things, since there was no authority for it in the Bible, nor in the teaching of their church. They replied: "Our fathers have told us it is an old custom. We don't know how it originated, but as we hear so we do."

Then I asked how the thing worked, and they said: "We leave the thread bound round the church all night. If in the morning it is light, dry and stiff, that shows that God is going to tighten His hold and deal severely with us, but if the thread is slack, loose or falls to the ground, then God will deal lightly

with us." This extraordinary consulting of the oracles reminds me forcibly of the action of Gideon in testing God by means of the fleece. *Judges vi. 37-41.*

Surely this custom is an interesting illustration of the old Semitic principle of solidarity between gods and their worshippers. Each skein represents an individual or family, and by uniting them in a circle the whole community thus encircled the local divinity and sought protection by putting itself in contact with the shrine.

Few people, however, nowadays see anything more in the custom than a mere charm. The making of things sacred by bringing them into contact with holy places is still a living factor in their belief. This ancient principle was put to practical use by Hirdarus, the grandson of Alyattes, who in the year 562 B. C., when Croesus was besieging the city of Ephesus, ordered it to be united by cords to the temple of Diana, which was seven stadia distant. Croesus, seeing that the city and its inhabitants were thus protected, had respect unto the stratagem and granted the citizens their liberty.

I made a photograph of Mae Butros (St. Peter's), showing the skeins twisted together above the door and window. The fact that none of the churches were completely girdled shows that the original idea is being lost, although there are some who will tell you that according to old tradition it should be completed. When the skeins have served their purpose they are taken down and sold by the priest for the benefit of Our Lady or St. Thekla, as the case may be, and the people use them for knitting stockings or wicks for their lamps, or keep them as charms. But the utilitarian is rapidly supplanting the sentimental or religious idea in the minds of the people, and I heard that the priest had been asked to take down the thread "before it got rotten" from exposure to the sun and unfit for use.

Shweir, Mt. Lebanon, Syria.

Kristian Settevall's "Svensk Historisk Bibliografi, 1875-1900" (Stockholm: Norstedt), is a valuable contribution to bibliographical literature. Not less than 4,636 books and articles are here enumerated, dealing with Swedish history in its broadest aspects, including such contributory sciences as numismatics, heraldry, church history, history of education, law and literature, topography and biography; territories that at one time or another belonged to the Swedish realm are also included as far as those periods are concerned. The book has a full author index, but unfortunately there is no index of topics.

ORIENTAL DEPARTMENT.

EDITED BY
DR. CHAS. H. S. DAVIS.

As the result of the work of the German Archæological Institute in Jerusalem, which is under the direction of Prof. Gustav Dalman of the University of Leipzig, there have been issued two small volumes: "Volksleben im Lande der Bibel," by M. Lohr, and "Palastinische Kulturbilder," the joint product of R. Eckhardt, F. Zickermann, and F. Fenner. These writers worked independently of the dragoman and guide. Lohr describes the life and doings of the modern inhabitants of Palestine. The other three take the reader through the country, describing the life of the people, and giving attention to the historical sites and the field for archæological research.

An expedition, sent out by the Russian Imperial Geographical Society under the leadership of Prof. P. Koslow, will investigate the national characteristics and languages of Central Asia.

The Vienna Akademie der Wissenschaften has granted 25,000 kroner to Dr. Rudolph Poech for an expedition to the Kalahari desert in South Africa, to study the Bushmen, who are dying out, and to make phonographic records of their language, and especially of their songs, similar to those made by him in New Guinea.

Prof. Charles Clermont-Ganneau, of the College de France, has recently published a lengthy description of the striking results of recent excavations in the island Elephantine. They prove the existence of a Jewish temple of Jehovah in that place under the twenty-seventh dynasty (from Persia), with remains from the reigns of Xerxes, Artaxerxes, Darius Nothus, and the second Artaxerxes. They furnish names already known from the Bible, and one mentioned by Josephus. Says Prof. Ganneau: "Who knows? Our picks may yet discover, laid away in some secret 'geniza,' a copy of the sacred book which was used in the ceremonies of worship—a Bible anterior by five centuries to Jesus Christ."

and merchants of the ancient world traded in many countries distant from the Syrian shores.

Many erudite writers have attempted to identify Sofala, on the east coast of Africa, with Ophir, while yet others have located it in India. One of the most learned essays written on the subject is from the pen of Prof. Hommel, who argued that the ancient land of gold was Arabia Felix.

A hundred specimens of the silver Tetradrachm of Alexander the Great, part of a find of 500 pieces, made recently in Lower Egypt, have been brought to New York. They were found in an earthen jar hidden in the side of an ancient well, where they had lain undisturbed over 2,200 years. These pieces are very thick, and the silver is of great purity. They correspond in weight to the half-dollar. The obverse bears the head of Hercules in a lion's skin. The reverse shows Zeus seated in a chair, and all bear the name of Alexander in Greek. Many interesting monograms and mint marks were found in this lot, and some of the pieces bore the Greek word for the mint marks, designating the towns or cities where they were struck, such as the forepart of a ram, a bow, a warrior, a plow, a helmet, and so on. The coins are all struck in very high relief, so high that the modern bank teller would have trouble in stacking more than three or four pieces without their tumbling over. They were found at Luxor.

For the first time since its foundation in 1893 the Egypt Exploration Fund is permitting a year to go by without sending out an expedition. The treasurer's report, read at the recent annual meeting, indicated that if any new enterprise should be undertaken at present considerable encroachment upon the capital of the fund would be necessary.

As a special feature of the annual meeting Dr. Bernard P. Greenfell gave an account of the important papyri discovered by himself and Dr. Hunt during their recent research at Oxyrhynchus, where they previously found the Logia of Christ. The new finds include an ode by Pindar celebrating the simple life, and 800 lines of the work of an unknown Greek writer who, Dr. Greenfell believes, was a fourth century historian. The magnum opus of the findings, however, is 300 lines of a lost tragedy by Euripides called "Hyppipolis."

Discoveries of considerable importance to students of ancient Hebraic history are communicated to the German Palestine Society by Prof. Ernest Sellin; the period concerned lying between 2,300 and 4,300 years B. C. Excavations conducted by Prof.

Sellin near Eriha (Jericho) seem to confirm the theory first mooted by Flavius Josephus that the site of the original city of Jericho destroyed by Joshua at the sound of the trumpets is to be found a mile beyond the Mountain of Elisha, spoken of in II *Kings*, xi. 19-22. After the clearing away of a huge mound of debris, the remains of an ancient stronghold were laid bare, measuring some 1,200 feet long by 600 wide, surrounded by a wall of burnt clay, ten feet high. These, Prof. Sellin declares, are the best preserved relics of those remote times ever found in Palestine. In the seventeen apartments or chambers of this fortress interesting household objects were found, such as cooking ovens and stone knives. The most important finds are a hitherto unknown kind of ceramics, consisting of jars and lamps, many of exquisite workmanship and ornamented with images of animals, which remind experts of the best examples of Babylonian art. Among other objects brought to light are plates, mortars, grindstones and weights. Of special interest, according to Prof. Sellin, is a stone image eight inches high and a jar, unfortunately damaged, bearing ancient Hebraic characters, which are held to furnish proof that the Canaanites were well acquainted with these peculiar inscriptions at an earlier period than previous researches indicated.

An important archæological expedition is going to the oasis of Siwa on the western frontier of Egypt in the course of this winter. It will be under French auspices, and the leader of the undertaking will be the Viscomte de Mathuisieult, whose investigations into the hinterland of Triopolis a few years ago aroused considerable interest. This oasis, the site of the world-famous oracle of Jupiter Ammon, is expected to yield important results.

The new and first really substantial fragments of Menander, which have excited great interest from the description of Professor Croiset, have been published in plates from the original papyrus at the price of 25 francs. (Paris: Lefebvre.)

H. Poignon, French consul, begins at the Imprimerie Nationale the important publication of the Semitic Inscriptions of Syria, Mesopotamia, and the Regions of Mossul. The first part, a quarto volume, contains 42 inset plates. The second part will appear in 1908. The price of the two is 60 francs.

At the last general meeting of the Egypt Exploration Society, reports were read of the work during last year's campaign. Deir-el-Bahari, which is one of the most interesting sites in the area

of ancient Thebes; has now been completely cleared. In the temple of the Queen the most important discoveries have been the great altar—the first known in Egypt at that time—and the “birth-terrace,” the inscription of which gave the legend of the divine nativity of the Queen, and the description of her education and coronation as associate to her father. In the lower part was found the unique representation of the transportation of the two obelisks erected at Karnak, one of which is still *in situ*. Inside this temple were found also the ebony panel of a shrine and its door. The discovery of the funerary temple of Mentuhetep II is one of the most important discoveries made lately in Egypt. It is in a ruined state, but is the most ancient temple which we possess at Thebes, revealing, as it does, the art of the Eleventh Dynasty. M. Naville, in the course of his address, strongly recommended taking up another large and important work which might last several years, rather than change the site of excavations every year. He thought a worthy undertaking would be the clearing of Abydos, which already had been conceded to the Egypt Exploration Fund. Though several explorers already had worked there, a great deal still remained to be done. It was a field of research which extended from the first dynasties to the Ptolemaic times. Another important work of the year was the complete clearance of the remaining mounds which contained Greek papyri at Oxvrhynchus. These nearly all belonged to the fifth and sixth centuries A. D. In one mound were a number of literary fragments, belonging to a library largely composed of Greek lyric poets. A Gospel fragment gave an account of a conversation on the nature of purity between Christ and a Pharisee, which was supposed to take place in the temple at Jerusalem. It is probably to be regarded as an elaboration of *Matthew* xv. 1-20, composed between 150 and 200 A. D. The most important of the new classical texts consisted of the fragments of the lost “Hypsipyle” of Euripides. Another long papyrus contained a commentary on Thucydides, Book II, apparently written in the first century, but the authorship has not yet been determined.

The new volume (Part V) of the Oxvrhynchus Papyri contains only literary texts, including a fragment of an uncanonical gospel, the new Pæans of Pindar, and the portions of a new Greek historical work, which Drs. Grenfell and Hunt are now disposed to identify with the “Hellenica” of Theopompus. A cheap edition of the Gospel fragment by itself, uniform with the “Sayings of Jesus,” will be published simultaneously by Henry Frowde. The account of the conversation between Jesus and a Pharisee on the nature of purity.

None of the recent archæological discoveries in Egypt is more interesting than the recent one reported by Prof. Clermont Ganneau, who tells how the German scientific mission, working on the Island of Elephanta in the Nile, has dug up some papyrus which, translated, turn out to be an authentic page to be added to the Scriptural book of Nehemiah. The document is long and interesting, but its inestimable value lies in the fact that it calls up historical figures familiar in the Bible, such as Johanan, high priest of Jerusalem, and Sanballat, the governor of Samaria. This papyrus, which has been deciphered by Prof. Sachau of Berlin, is a petition addressed by the Jewish inhabitants of the island of Elephanta, speaking through the priest Jeduyah and his colleagues, to the Lord Bagohi, the Persian governor of Samaria, in the seventeenth year of the reign of King Darius.

This goes to prove that the Jews were at Elephanta long before the destruction of Jerusalem, since the Darius mentioned has been identified as Darius II, whose seventeenth year would be 407 B. C. The Temple of Jerusalem was destroyed about 380 years before this time, and it is pointed out that this is not a very long time for a large and wealthy building to be built, to be destroyed, and for a petition for its rebuilding, as this document requests. The temple, therefore, must have been standing certainly during the period of the Babylonian captivity, and very possibly before the time of Nebuchadnezzar. Apropos of Biblical history, the papyrus seems to throw light on *Isaiah* xix. 19, the text of which runs as follows: "In that day shall there be an altar to the Lord in the midst of the land of Egypt and a pillar at the border thereof to the Lord." The papyrus would appear to show that the temple and pillar referred to were at Elephantine and not at Syene, as has hitherto, for the most part, been considered more probable.

The inestimable value of these new discoveries lies in their corroboration of the Biblical story, and, besides the names of Jehohanan and Sanballat mentioned in the Old Testament, the governor Bagohi is to be found in the historian Josephus in the Greek form Bagoas. Prof. Clermont-Ganneau, who gives the above details, has especial reason to be congratulated on this discovery, although not actually made by himself, since it places beyond all doubt the correctness of the belief that the temple of Jehovah was on the island of Elephanta—the belief which he was almost alone for a long time in holding. He is now in the majority, who located it at Syene, on the opposite bank of the Nile. At present he is in charge of a French mission mentioned by the Academy, by the Ministry, and by the Rothschild, which is excavating on the island.

the German explorer, and the keenest rivalry naturally exists between the two groups, who are working literally shoulder to shoulder within a few yards of each other, each, however, with a radius exactly defined and marked out by wire fences.

The second edition of the "Hebraische Archæologie," by Dr. I. Benzinger, which, since its original publication in 1894, has been a great authority in its field, is to all intents and purposes a new work. While the former edition was largely under the spell of Wellhausen, the present work, on the basis of the best of modern "Panbabylonism," systematically arranges the wealth of data, old and new, to explain the antiquities of the Hebrews in their relation to the whole civilization of Western Asia, particularly of Babylonia. Benzinger is particularly qualified for this work, having for years been engaged in archæological investigations in Bible lands with headquarters in Jerusalem. A feature of this work is the 253 illustrations and the plan of Jerusalem. The work is published by Mohr of Tübingen, and the price is 10 marks.

In accordance with its announced plans to provide for the development of the Egyptian collection, the New York Metropolitan Museum of Art has placed on exhibition the first consignment of Egyptian works of art. It has also announced that the museum ultimately will receive from its expedition to the Pyramids of Lisht the great red granite altar of King Amenemhat I, and a number of other discoveries. From the Egypt Exploration Fund has been received also an important consignment of objects found in the excavation of the Eleventh Dynasty temple at Deir-el-Bahari, on the west bank at Thebes. The work was carried on by Prof. Edouard Naville. There is also some material sent over by Prof. Flinders Petrie from Gizeh, which is just south of the pyramid belt, and some from Rifeh, near Assiut.

Professor Francis Brown of the Union Theological Seminary has become a member of the general committee of the Palestine Exploration Fund, which has now ten American members. Dr. Brown will be in charge the coming year of the American School at Jerusalem, and this, it is thought, will promote the co-operation of England and America in the work of verifying and illustrating the Bible.

L. Bygden's "Svenski-Anonym-och Pseudonym-Lekicon," published at the expense of Svenska Litteratursällskapet in Upsala, reached the letter O. It is a mine of information, not merely Swedish literature, but for other literatures as well.

BABYLONIAN ASTRONOMY.

Dr. Kurt Lavis of the University of Chicago has an interesting article in a late number of *Popular Astronomy* on the Babylonian Calendar. Our knowledge, Dr. Lavis says, of Babylonian Astronomy, and Babylonian mode of calendar keeping, has until recently been extremely limited and inadequate. Beyond the fact that the Babylonians watched the stars and planets with great care, and that they were familiar with the *Saros Cycle*, our average textbooks on astronomy had very little to add. But it is not known to very many that during the last twenty years great strides have been made in this province of learning, and that modern authors who write on General Astronomy will do well not to dismiss this interesting chapter with a few words, as heretofore. The student who wants to inform himself adequately along these lines will find a wealth of information contained in the eighteen volumes of *Assyriologische Leitschrift*, to which many authors on Assyriology and Calendography have contributed. He will do well to peruse with attention the articles written by Epping and Strassmayer, to whom, in the first place, is due the credit for a new understanding of the astronomy of those very remote ages. Furthermore, he is invited to read the conclusions which Edward Mahler has been able to arrive at, starting as he did from the foundations established on the one side by Epping, and on the other side by the world famous school of Chronology of Von Oppolzer.

The Calendar of the Babylonians was not clearly understood by scientists till Edward Mahler, the assistant of the geodetic survey of Austria, unriddled its mysterious construction, and revealed a system of great symmetry and comparative simplicity. It will suffice here to say that two kinds of year were used, a common year of 354 days, and a year of intercalation, which had a length of 383 or 384 days, divided into 13 months. Since it happens that the year of the tablet is a common year, we need but consider its beginning and record the length of the individual month. The beginning falls on the 21st of April, the average length of the month being 29.5 days. In the average length of the month we recognize the synodic month, which, as shown by Mahler, was known to the Babylonians with unusual accuracy. Since the month had to contain an integer number of days, the Babylonians alternated with months of 29 and 30 days, so that the length of the year was equal to 12 synodic revolutions of the moon. We are used to the universal custom of beginning the day at midnight, but this was not the usage of the Babylonians. They began the day at 6 p. m., and this custom likewise prevailed among the Hebrews. The reason for this peculiar

mode is evidently to be found in the fact that the Babylonians originally obtained the beginning from the light of the new moon, which becomes visible in the evening. After their system of accurate observation had furnished them a very precise determination of the length of the synodic month, it proved not to be necessary to have reference at the beginning of each month to the observations of the first light of the moon.

EGYPTIANS' VIEW OF DEATH.

The question is often asked why is it that the Egyptian tombs have yielded so large a number of model figures, single or in groups? The answer is an interesting one, especially to those who are visiting Egypt this season. There was no race of people who kept death so constantly before them as the Egyptians. It was before them all through their lives. The pious Egyptian built his tomb during his lifetime, he superintended its construction or its cutting out of the rock with all or even more attention than he paid to the erection of his earthly dwelling. He painted its walls with the happiest scenes in his life, or the most important events in his official career. His coffin was certainly, in the case of rich men, made before his death, and scribes often wrote themselves the copy of the Book of the Dead, which was to act as their guidebook in the next world. The tomb was furnished with models of various kinds—figures of servants, groups of men in various domestic occupations, brewing beer, baking bread, storing corn in the granaries, or slaying oxen for the feast. Models of ships and boats were placed in the tombs.

Of all of these there are fine examples exhibited in the Egyptian room of the British Museum. What was the secret of this great preparation? It lay in one belief that dominated everything in Egypt. That of magic. There is an old saying in the Talmud that ten parts of the magic were assigned to Egypt. To the Egyptian death presented no terrors, because of the belief that not only he, but all about him, would live in a land of eternity and everlastingness. No doubt of this can be admitted, in the face of the evidence from the tombs. The prehistoric inhabitants, as shown by the tombs in the British Museum, buried food-vessels or jars, and weapons with the dead. This implied a belief that he would require nourishment and protection in the next world. The ground work of this custom lay in the belief that every figure of an object, animate or inanimate, possessed a life or soul or double similar to the object itself; copies of the Book of the Dead, or other religious works buried with the dead or painted on the side of his coffin or the walls of his tomb pos-

sessed a vitality which enabled them to repeat themselves, to instruct the deceased, and enable him to pass further through the under world. Were this not the case, what would be the use of burying them in dark tombs closed forever, or at least until opened by the tomb robber or explorer? This belief in magic figures is best illustrated by a class which is the most numerous, and of which there are thousands in the museums and private collections of the world. These are small stone, wood and faience figures of human beings, sometimes in the Osirian form—that is, of the deceased as identified with Osiris. These figures in the best period, from the eighteenth to the twenty-sixth dynasty, are clad generally in robes of common life, and carry a hoe, mattock, and basket over the shoulder like a field laborer. This costume exactly explains their position. They represent servants.

According to the Egyptian teaching, the deceased was compelled in the next world to labor as on earth in the fields of the great Osirian estate of the Fields of Peace. His work was that of the ordinary fellaheen—to hoe and sow the fields, to fill the canals with water, and to carry the sand of the West to the East—that is, Dr. Bridges suggests, to top dress the fields. No doubt in ancient times the custom was to slay at the tomb of the deceased certain servants, who would go with their master in the spirit to the next world, and there relieve him of these menial duties. Later the more humane custom was to make small figures of these workmen, the more according to the deceased's rank, and place them in the tomb, so that these doubles might perform the work. These little figures are inscribed with the Sixth Chapter of the Book of the Dead. Here we find that their name was Ushabtiu, or Answerers, a name of which the origin is explained. In the chapter the master tells them to watch the work, and when he is called to answer: "Behold! I am him whom ye call." He then says: "Watch ye at every moment, every hour. All work there, to plow the fields, to fill the canals with water, and carry sand from the West to the East." Again (answer), "Here am I when ye call." In these little figures we have the real solution of the custom of depositing these figures in the tombs and of painting domestic scenes on the walls. The laborers deposited in the granaries the "red and white" grain from "the Fields of Peace." The bakers baked "the bread that goeth not stale," the brewers made "the beer that goeth not sour." The butchers killed the oxen, the double of the funeral offerings. In the model boats he sailed on the Celestial Nile, or along the rivers and canals of his estate. So that really these figures enabled him to live a life as on earth. These figures,

by the unlearned, have been called Teraphs, or by many Egyptian toys, but a little research has proved them to be objects of much religious and scientific interest.—*W. St. C. Boscawen in The London Globe.*

THE PREHISTORIC HORSE AND ELEPHANT.

Advices received at the American Museum of Natural History indicate that the expedition of Professor Henry Osborn to the desert of Fayoum, Egypt, in search of the extinct ancestors of elephants, rhinoceroses and horses has been successful and that the party will return next month with tons of valuable material.

The most remarkable of the monsters unearthed by Professor Osborn is the arsinotherium, named in honor of the Queen. This animal had a huge pair of horns projecting forward above the nostrils and a smaller pair of horns lying farther back. Its nearest allies, strange to say, are the extinct animals discovered in Wyoming and named the dinoceras, or amblypoda, in sands having the same geological age as those of Fayoum. Although as large as the arsinotherium, and some of them endowed with three pairs of horns, none of them had a front pair of horns as large and as singular as those of the beast of Fayoum.

These specimens, so widely separated geographically, are considered as representatives of a great group of mammals which sprung from common ancestors. The huge horns of the arsinotherium, set in a skull three feet long, with powerful jaws two feet long, having a complete series of most remarkable teeth, emphasize the present scientific view, that horns of animals were primarily not so much for defence as to enable the males to fight for supremacy in their own herds and to lord it over the females.

Another extinct wonder which Professor Osborn will bring here from Egypt is the meritherium, somewhat smaller than the last, which is undoubtedly an elephant, yet with little resemblance to one, as it was apparently trunkless and had only small, tooth-like tusks. That it was an elephant at all is shown by the teeth, undoubtedly mastodonlike. This animal is regarded as closely related to the ancestors of all elephants, if not the actual ancestor. From this piglike megatherium surely sprang the huge latter day elephant. The world was younger when the megatherium was evolved and animals were small. The ancestors of the huge dinosaurs were then little lizards; the ancestors of the horse were no bigger than lambs, and the ancestors of rhinoceroses were not much larger than pigs.

Professor Lull of Yale declares the first horses came to America two million years ago.

How North America was like a great stock farm, in which the horse was developed from a five-toed animal, eleven inches in height, to practically its present proportions, is graphically told in the March number of the American Journal of Science, which is soon to appear. The article was written by Professor Richard S. Lull, primarily as a guide to the paleontological collections in the Peabody Museum at Yale University, but is of great popular interest, as it contains a complete account of the evolution of the horse family.

Professor Lull says that nearly two million years have elapsed since the first diminutive horse appeared in North America. The animal was of both Asiatic and European origin, and must have come to the western hemisphere by traveling over land now covered by Behring Strait.

"First of the undoubted horselike animals appearing in the rocks of North America is a little creature not more than eleven inches high, known to science as *Eohippus*," he says. "This interesting animal had already made a long stride in the direction of the modern horse, as the number of toes were reduced to four in front and three behind."

Professor Lull then describes how the toes were gradually converted into the hoofs. Even in the living horses there are occasionally seen traces of the five toes in the forefeet.

DRUID CIRCLES ARE ASTRONOMICAL.

A fascinating mystery surrounds the Druids. Glimpses are given in the works of Latin authors of strange Hyperboreans living "beyond the sources of the north wind," ruled by priests who worked with incantations by means of mistletoe cut with a golden knife and offered human sacrifices on lonely stone altars under the stars.

Beyond this the researches of antiquarians and students of folk lore show that the tradition of these same Druids still survives in remoter parts of Great Britain, as local superstitions and festivals, sacred wells, and more than all, in peculiar rows and circles of roughly shaped stones. Such blocks are often of gigantic size, while it is not uncommon for a pair of stones each the size of a man to be capped with another as large, neatly mortised in place across the uprights.

The great circle at Stonehenge is one hundred feet across. One of the avenues at Dartmoor is more than one thousand feet

in length. Such monuments of a vanished faith occur all over the British Isles from Cornwall to the Orkneys.

Oddly enough, it happens that the most important of recent contributions to the knowledge of these mysterious priests and their temples has been made not by an archæologist but by an astronomer—Sir Norman Lockyer. For twenty years and more Lockyer has been studying ancient temples and other buildings, in Egypt and Greece as well as nearer home, endeavoring to make out their precise use as astronomical observatories.

It has long been known that ancient priests have generally been astronomers as well. It has been known also in a general way that most ancient temples have been placed to look toward the rising or setting point of some particular heavenly body. In fact, early peoples are prone to "worship the host of heaven," and many early religious cults are based on the adoration of some particular star.

It is, however, a new thing for a modern astronomer, aided by the resources of modern science, to put himself in the place of one of these old astronomer-priests and by refined methods of measurement make out exactly what the ancient worthy was looking at, and just when he did it.

Lockyer reasoned that the old astronomer-priests would be sure to mix up their religion with their science, and having built a temple for the worship of some heavenly body, would in addition make the deity useful as an almanac. Star gods can be utilized to tell the time by night. From the morning adoration of the sun god it is but a step to fixing the calendar by the successive points on the horizon where the divinity appears.

Lockyer's studies go back to that obscure source of religion and science, the land of Egypt. As a matter of religion the Egyptians worshipped the sun. As a matter of science they were especially interested in determining the summer solstice, because at that time began the annual rise of the Nile. In fact, the Egyptians were the only early people who had any particular interest in determining the longest day in the year.

But the early astronomers had no telescopes with spider web sight lines and micrometer eye-pieces. All they could do was to fix some sort of stone monument in line with the point of the horizon where the sun shone on a particular day.

Many Egyptian temples built between 2200 and 1500 B. C. have their long axes so placed that on the longest day of the year the light of the rising sun comes through a long line of narrow doorways and illumines a dark chamber at the further end. Thus the Egyptians knew when it was midsummer. Wherever, there-

fore, one discovers temples or other monuments oriented with regard to the rising sun on June 21st there one may suspect the influence of the Egyptian sun-worship.

Now it has long been known that the horseshoe line of blocks at Stonehenge looks toward this point of the horizon, and that other parts of the structure and one especially prominent sight line have also this direction. Lockyer made a careful determination of the position of this sunrise point at various past epochs, as it has changed slightly in the course of years.

Correcting his observations for the height of the horizon where the ancient sight line pointed, allowing for the refraction of the air and the apparent distortion of the sun's disc near the horizon, he computed that Stonehenge was built to face the precise spot where the sun rose on June 21 about 1680 B. C. The Druids, then, from about the year 1700 B. C. appear to have been priests of a religion which originated in Egypt some thousand, or more years before, and spread along the coast as the early seamen made their way from cape to cape until it reached Greece on the one side and England on the other.

Stonehenge is therefore a monument to the religion of the pyramids. This same religion of the pyramids, moreover, has given us our own legal year, whose cardinal points are the solstices and the equinoxes.

GOLD LINED TOMB OF QUEEN TEIE OF EGYPT.

Theodore M. Davis, who discovered the tomb of the parents of the Egyptian Queen Teie, has just made another sensational discovery of the tomb and mummy of Teie herself at Thebes.

The London *Times*, in a long article describing the tomb, says it is a plain square sepulcher cut out of rock. It is approached by a descent of twenty steps and adjoins the tomb of Rameses IX. It was covered with about twenty feet of debris. Unfortunately the tomb lay in the bed of a water course, and the percolation of water has severely damaged such perishable objects as wood and the mummy itself. Apart from this, however, the tomb is in the same condition as when it was left by the priests amid the throes of a religious revolution which had spent its force before Moses was born. The tomb bears witness to the blind rage of the victorious priesthood at Thebes and the intensity of their hatred toward the heretic king, whose mother and inspirer was Teie.

After describing the work of desecration, the *Times* adds that nevertheless the queen's jewelry and the sheets of solid gold with which the sepulcher was literally filled were left untouched.

... fragments of ... but a huge ... had been ...

... and en- ... as well as ... It is ... while ... The ... to the south ... with gold ...

The ... had been converted into ... The ... was ... The ... covered with a frame ... and green glass. The ... scales, but down ... that the ...

The ... was ... in sheets of gold. The water ... many years had been draining ... and it fell ... in the presence of several Egypt- ... There were bracelets on the arms and a ... of gold ... with pre- ... the head was still encircled by an ... the imperial crown of the ...

ARCHAEOLOGICAL WORK IN WYOMING.

Harlan I. Smith recently returned from a superficial archae-
ological ... of the southern half of the state of Wy-
oming. The ... near the center of a vast neglected field
for archaeological research to which Mr. Smith called attention
in his contribution to the *Boas Anniversary Volume* of 1907.

The neglected area extends from the arctic region on the
north to the Mandan remains of Dakota and the well known
archaeological remains of the Mississippi Valley on the east; to
the Cliff Dwellings on the South and the rich archeological
sites of the Santa Catalina Islands, the Sacramento Valley of
California and the plateau culture of Washington, and British
Columbia on the west.

The region is so vast and the problems are so numerous, that
no one institution, much less any individual, might hope to more

than begin the work. The Museum has done this through Mr. Smith's preliminary trip. He endeavored to interest not only the local educational institutions, but all the great museums in the country to co-operate in the work.

Among the problems to be solved, the following may be mentioned: When did man first appear in the region? Judging from the results of exploration in other places, it may take many years of the combined efforts of all who are interested before extensive evidence on this point is discovered. What was the culture of these first inhabitants? Was there more than one culture in the area, either at various places or during different periods? How was the culture affected by the introduction of the horse? No doubt the coming of the horse to a people whose only beast of burden was the dog, caused a great advance in their culture, as it would enable them to travel further in search of food, to possess and transport more property and to become somewhat more independent of the scant water supply.

The larger part of the territory was inhabited by Indians belonging to the Athabascan, Algonkin, Siouan and Shoshonean groups. An examination of the archeological remains will throw light upon the early history of these people and their migrations.

The central portion of the area was the home of the American bison, upon which the Indians, when first met by the whites, depended not only for their food, but for the material for their clothing, moccasins, covers for their tepees and ferry boats or rafts, backgrounds, upon which to paint their calendars, and other things of a like character. The horns and bones furnished them with material for various articles and implements, among which may be mentioned spoons, bowls, skin scrapers, etc.

After all the vaunted superiority of the white race, our people to-day are holding the cattle much as the Indian held the Buffalo. For instance, the Indians held the herds on the North Platte river in order that the tribes living north of the river might be able to get the buffalo all through the year, for if left to themselves, the herds would have traveled further to the south in the winter. Our round-up and general treatment of the cattle of the plains, resembles today and always has in wildness and cruelty the buffalo hunt of the Indians.

In the eastern part of Wyoming, some extensive quarries, where the prehistoric people found quartzite and jasper, out of which to make chipped implements, have been known for some years. Mr. Smith visited these, securing specimens and photographs, and also discovered other extensive quarries, some of them covering acres, in the same general region. Beside these,

notes were taken of still other quarries known to the local ranchers. Nearly everywhere in Wyoming, but more in the eastern part, circles of stones marking the sites of ancient tipis were found. They may be counted by the hundred in the southern part of Converse County. These stones were no doubt used to hold down the skin covering of the tipi. Stones are still employed for this purpose by the Blackfeet Indians in Montana, only a short distance to the north.

Pictographs painted in red and black, and petroglyphs cut or pecked on the cliffs were noticed, especially in the vicinity of the Wind River Mountains. A number of these were photographed; some of them represent horses, proving them to have been made since the white man brought the horse to America; others represented the buffalo.

Steatite pots in the form of an egg, with the tip of the largest end cut off, and apparently of a type unknown in other parts of America, were noticed, especially in western Wyoming. True pottery was rare. Less than a dozen sites where it occurred were found to have been located, and these were all well toward the southern part of the state. They probably mark the northern limits of the pottery in this portion of the area.

In the vicinity of Hammond in the Algonkin area, caves into which the wolves had dragged bones of cattle, sheep and other animals, and in front of which is much village debris, and a large number of tipi circles, as well as some petroglyphs, probably contain many remains, and this vicinity as well as the eastern slope of the Wind River Mountains, would probably repay detailed exploration. Several months' work in the latter region would be sure to enable the explorer to secure a collection of photographs, illustrating the art of the vicinity, as executed in the form of petroglyphs.

It would seem to be the duty of the students of the Cliff Dwelling and Pueblo region to explore northward into this vast neglected area, in an attempt at finding the northern limit of that culture. The students of the archeology of the Mississippi Valley have a similar duty to perform in determining the western limits of the agricultural culture of that valley, while the students of California owe it to the world to investigate the eastern portion of California and Nevada. The eastern limits of the plateau culture of southern British Columbia and Washington should also be determined.

DR. TYLOR ON THE STONE AGE.

The track or trail left by our ancestors of the stone age has for thousands of years attracted curious minds. Hesiod had his theory of progress and of successive races, beginning with the gods, followed by heroes, and passing through the age of bronze, "when as yet black iron was not." Moschion touches on cave-dwellers, whom he regards as cannibals; and Lucretius traces religion to the belief in spirits, or "animism," bred of reflection on the phenomena of breath, dreams and shadows. The Greek geographers, and Herodotus and Aristotle, were curious about the institutions of savage and barbaric races; while, in the eighteenth century; Goguet, Fontenelle, Boulanger, des Brosses, Professor Millar of Glasgow, and others, explained the rise of mythology and the origin of rank, on the lines of modern anthropological science. The idea of evolution, for all that we know, is as early a conception of thinking men as the idea of creation; both exist among the most primitive savage races; and, in short, all that the speculators of the last and the present age can do is to bring wider study, and more precise methods, into the investigation of human development. In the middle of the nineteenth century the advance of philological science, with the theory that mythology is the result of "decay of language;" and the other theory that degeneration has more to answer for than we can admit, caused a temporary diversion from the ideas of Lucretius and Fontenelle. Fortunately these notions did not distract Mr. Tylor from the track which he was born to follow.

On re-perusing the long familiar pages of *Primitive Culture* one is constantly impressed anew by their readableness. Never sinking to the popular, Dr. Tylor never ceases to be interesting, so vast and varied are his stores of learning, so abundant his wealth of apposite and accurate illustration. Ten years was this work in the writing, and it may be said that *le temps n'y mord*; that though much has been learned in the last thirty years, no book can ever supersede *Primitive Culture*. It teaches us that, in examining the strangest institutions and beliefs, we are not condemned a *chercher raison ou il n'y en a pas*, as Dr. Johnson supposed. The most irrational-seeming customs were the product of reason like our own, working on materials imperfectly apprehended, and under stress of needs which it is our business to discover, though they have faded from the memories of the advanced savages of to-day. We must ever make allowance for the savage habit of pushing ideas to their logical conclusions, a habit which our English characteristics make us find it difficult to understand. We are also made to see that man is, and will continue to be, a religious animal. As Dean Swift acutely observed,

LITERARY NOTES.

"*The Science of Man*" has long been on our exchange list, but we have not given it as frequent notices as it deserves. The March number 1907 contains a description of the Easter Islands. The editor says: "The visit to Easter Islands gives me a general impression of the sudden collapse of all work of art on the island, owing to some great catastrophe. The number of statues left in the quarries, in all stages of preparation, imply a great activity suddenly come to an end. Tools abandoned in all directions, images in all possible positions, ready to be transported, images scattered over the island on the way to their destinations. The nations of today are more closely allied to the inhabitants of the Society Islands than to others.

"In 1860, previous to the time of the kidnapping of the natives by the Peruvians, there were said to be 3,000 inhabitants, and ten years later there were only 900, and at present there are about 150. The traditions indicate one body of immigrants from South America, another from the Galapagos, and a third from the Paumotus.

"At the crater of Rana-Roroka are the quarries, from which were cut the great images now scattered over the island. A number of stone houses, built by the people who made the images, are found, also sculptured rocks. The fitting of the cyclopean rocks into the faces of the platforms indicate excellent workmanship. One platform is 450 feet long, and contained the remains of fifteen images which have fallen. The plain in the rear is crowded with stone houses, mostly in ruins. Nearby is a large burying place."

It is a theory of some that there may have been an ancient continent which, besides supplying the people who constituted the Australian race, furnished the root words to the Australian dialects. This, however, does not seem to be confirmed by the investigations of our contributors in Australia, such as Mr. Howitt and Mr. Matthews.

The Philippine Journal of Science, Vol. I, No. 8, contains an account of the pagan tribes in Luzon by Dean C. Worcester, with sixty-seven full page plates. These show the natives following their various pursuits, some of them turning the handmill; others pounding stone; women weaving garments; specimens of art, statues, idols and vases; mining slaves at work; musicians with their tom-toms, flutes and drums; fisherman with a spear; their

peculiar weapons, their houses, and burial places. The plates are as instructive as the letter press.

In "*The Science of Man*" for March for 1907 we find an article showing the changes and progress from glacial times on, through the quaternary period up to the early historic times. The following quotation is suggestive: "The glacial age had the effect of killing off the animals, plants and man, and only those that escaped to tropical lands or regions beyond the ice lived to perpetuate their kinds, to reoccupy the land when the warmer times had melted the glaciers. Very few of the people using Eolithic implements survived, but the people using Paleolithic weapons and tools are found to have spread over the earth. As to the time that elapsed between the Pliocene times and the Tertiary, the conjecture is that it was about 2,500 years. The glacial portion of the quaternary continued about 10,000 years. This was followed by alternations of cold and heat for a period then the last glacial age caused by the greater eccentricity of the orbit came and after 10,000 years the quaternary period with about 80,000 years age, after which the Neolithic people spread over the earth.

"During the last advance of the glaciers at the end of the quaternary period, many species of animals and man were killed by the frigidity of the climate. Owing to the greater eccentricity of the earth's orbit and the 10,000 years of the equinoctial nodes, when the winter came into aphelion the climate became warmer, the elevated continent sank down to lower levels, pools became more abundant, and men had better opportunity to invent stone and horn tools, from which epoch the different races introduced the copper, bronze and iron, invented dugout canoes and stone structures. The ruling chiefs were the most powerful men. They began the practice of burial rites and then the erection of caissons, menhirs, cromlechs, and tumuli. Gradually the means of living by hunting, fishing, and gathering wild fruits were superseded by the taming of animals and crude agriculture. After that the pile dwellings were erected in Switzerland, Italy and Greece. Migrations of men and animals were shown by the shell heaps of Scandinavia by the kitchen middens."

Then the horse appeared. Over 40,000 skeletons of the horse have been found. This writer imagines the horse to have appeared first in America, and passed over the connecting land and appeared in Europe. This is a bird's-eye view as given by one as far away as Australasia, though the archaeologists and geologists of America are not quite prepared to make the same state-

ments as to the time of each appearance, nor quite as confident in their positions. The dates and length of the periods must be taken as matters of conjecture, and yet it is gratifying to know that those who dwell in the Southern zone are interested and informed about the growth of the Northern continent.

The committee on the Nomenclature of Indian Linguistic families, appointed in 1905, presented in 1906 its report, which has come to hand. Three or four suggestions are made: First, each name should be chosen on its own merit as determined by philologic correctness and historical and geographic usage, but with the ending *an* or *ian*. In the opinion of the Editor, who has heard many of the Indians belonging to different tribes, this plan, which is proposed by Major Powell, is completely destructive and not constructive. There was a peculiar pronunciation which was partly labial and partly racial and sometimes guttural, which was characteristic and was easily recognized.

The editor of this journal when a boy caught the pronunciation, and could speak words from various languages without fully understanding their meaning. An Indian of any tribe on the continent never would recognize his mother tongue in these artificial inventions of the white men. If the monuments are to be preserved the words and the languages should be also, and no artificial additions and inventions should be substituted for them.

The *Bulletin of the American Geographical Society*, December, 1907, contains articles on the desert basins of the Colorado delta, by D. T. McDougal, with maps and cuts; another on the Letchworth Park, a park of a thousand acres situated in Wyoming and Livingston counties, New York, with full page plates; also many notes on Africa, America, Australia, Asia, Europe, and the Polar Regions; besides book reviews. This journal is among the most valuable of our exchanges. We prize it highly.

In *The Nation* for January 2d there is a notice of a report of the Archæological Institute of America, by Prof. H. A. Sanders, of the University of Michigan, of manuscripts of the Bible, recently bought in Egypt by Charles L. Freer, supposed to belong to a date as early as 639 A. D. The manuscripts are in large Uncial letters, with variations showing that they were written on different dates, from the third to the sixth century. Manuscript I contains Deuteronomy, Joshua, and Numbers, and an accurate text of this portion of the Septuagint. Manuscript II contains the Psalms, and is the oldest manuscript of the Psalms in exist'

ence. Where the Vatican fails it is the very best. Manuscript III contains the four gospels, entire with many interesting variant readings. A new paragraph known to St. Jerome is in this manuscript, but not in the usual version. Manuscript IV is badly decayed and represents the Acts and Epistles, but not Revelation. This find is valuable, for it shows the antiquity of the New Testament and its genuineness as a book which has come down to us from the apostolic times. The pretensions of Bob Ingersoll to an acquaintance with the early versions of the New Testament are exposed by this find.

The manuscripts, which were certainly written out long before the art of printing, are at least as important as any assertions which may be made by those who read but do not believe the Bible as a genuine inheritance. We maintain that the antiquity of the Bible is an argument in its favor. It shows the religious thoughts which have come down to us from the prophets and the apostles. As connecting links between the apostolic age and the age of the revival of learning these manuscripts are of great value.

TWINS IN THE MYTHOLOGY OF ALL NATIONS.

It is well known that in the mythology of Greece the story of Castor and Pollux was very conspicuous and served an important part in the early history. The twin brothers Romulus and Remus were the founders of Rome. They quarreled while building the wall and Remus was slain by his brother, very much as Abel was by Cain. Henquist and Horsa, twins, served an important part in the early history of Europe. The story of the twins appears in America, especially in the Navajo mythology. Pasjelto and Hostjoghan were supernatural beings who dwelt on the mountain tops where the storms meet. They were regarded as the guardian divinities of the people. There is a story of a hero who had died, but his soul was led by these two divinities through the clouds and over the mountains into a valley where the body lay and into which the spirit entered and was led back the twin gods, one in front and one behind. This is another parallel between the early stories of the Bible and the myths of all nations.

In Babylonian mythology we have the story of Marduk and Tiamat, who were the personifications of the nature powers but represented the contest between the elements of earth and sky, storm and sunshine, light and darkness, and even good and evil. The moral character was affected by the natural, and corresponds to the contest between the twins, though there was no such pre-

natal contest as existed between Esau and Jacob, according to the Bible story. The contest between the creator and the serpent, which is recorded in the first chapter of Genesis, does not appear, though the serpent was the offspring of the land of death, or the creature of the house of death, while the creator dwelt in light, which was full of glory. The association of the beguiler and enchanter and death is borne out by an inscription in which the magician is called the man whose mouth is death, and the bite of the serpent is called the touch of death. Merodach was the god of light. He became the good one, the opponent of darkness. Tiamat was provided with a mysterious pouch whose name means "the maker of darkness," but the serpent of darkness became the evil one.

In Egypt instead of the twins we have the triad. Osiris was the father of the household, the chief divinity; Isis was his sister and wife; Horus was the child. There comes into this myth the story of redemption, for Horus was slain and his body was hidden in the tree, but it was recovered, the pieces were brought together, life was imparted to them, and he became the restorer and the god of life.

ABANDONED SHORE LINES.

The late glacial and post-glacial history of the Great Lakes has been more thoroughly and accurately pursued in recent years than ever before. Mr. James W. Goldthwaite gives a resume of the development of the extinct lakes of the Great Lake region and of the changes in them while the ice sheet was disappearing. Previous studies of the extinct lakes, Algonquin, Nipissing, and Chicago, are then reviewed and attention is called to problems concerning their history, some of which are not yet solved.

BOOK REVIEWS.

ORIGINAL NARRATIVES OF EARLY AMERICAN HISTORY. Charles Scribner's Sons, New York.

THE VOYAGES OF SAMUEL CHAMPLAIN. Edited by *W. L. Grant*, Beit Lecturer on Colonial History in the University of Oxford.

These two volumes have been newly added to the series. The first contains the voyages of Samuel de Champlain, 1604-1618. Mr. Grant's work as editor has been well done. The text is that of Slafter, and many of the notes of that admirable investigator have been taken over in part or in whole. The editor, however, has made many annotations of his own. He calls especial attention to the value of Champlain's description of New England as furnishing what Winsor has called the first "intelligent cartography of the shore line of Nova Scotia and New England;" and Mr. Grant considers that Champlain did more than any other of the early seamen to bring order out of confusion. The connection of Champlain with the history of the United States is not generally recognized today, most textbooks referring to him solely in connection with Quebec. The trials of the settlements at Plymouth and Massachusetts are known to every schoolboy, but who knows of Champlain's work along the Maine coast? "The exclusive attention paid to the English colonists has glorified Massachusetts at the expense of Maine, and one of the noblest names in the history of exploration has been passed over."

NARRATIVES OF EARLY VIRGINIA. Edited by *President L. G. Tyler* of the College of William and Mary.

President Tyler's volume contains thirteen narratives, all familiar to students of early Virginia history: Percy's "Observations;" Smith's "True Relation," "Description of Virginia," and "General History" (fourth book); De-la-Warr's "Relation;" the letters of De Molina, Father Biard, John Rolfe, and John Pory; the Proceedings of the Virginia Assembly (1619); the Virginia Planters' Plea in answer to Butler's Unmasking; and, lastly, the Relation of the Assembly in 1624 and the Discourse of the Old Company. Nothing except a facsimile is given from the Records of the Virginia Company, and nothing at all from Strachey.

ANNUAL REPORT OF THE BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTION, showing the operations, expenditures and condition of the Institution for the year ending June 30, 1906. Printed at the Government Printing Office, Washington, 1907.

The topics treated in this volume are varied, including Astronomy on Mt. Blanc, the eruption of Mt. Vesuvius in 1906, the mammoth, and the elephant primigenus, quaternary human remains in Central Europe, etc.

THE PULSE OF ASIA: A journey in Central Asia, illustrating the Geographic Basis of History. By *Elsworth Huntington*. Boston and New York: Houghton, Mifflin & Co: 1907.

This title hardly gives an idea of the contents of the book. A better title would have been "The Roof of Asia," for the Himalayas and high places really constitute the roof of the world. There is one title which is significant, "The Land of Withering Rivers;" another is the "Unexplored Salt Desert," another the "Dry Rivers and the Dry Mountains." The illustrations are numerous. They represent the lamasaries, the lakes and mountains, the people, the camels and horses, the natural arches and the sacred ruins. It is a region that in ancient times had a trade with China in one direction and India in the other.

A HISTORY OF ASTRONOMY. By *Walter W. Bryant*, B. A., F. R. A. S., F. R. Met Soc., Superintendent of the Magnetical and Meteorological Department of the Royal Observatory, Greenwich. New York: E. P. Dutton & Co.: 1907.

This book contains portraits of Copernicus, Tycho Brahe, Newton, Laplace, Herschel, and a number of views of observatories and other engravings. The history of Astronomy began with the Greeks, but soon passed over to Galileo and the modern astronomers. The Copernican theory came in like a new revelation, but solar spectroscopy has proved instructive. The velocity of stars equals twenty miles per second. The variable stars and nebulae are described. The book is instructive and easily understood, and ought certainly to reach a good sale. It is free from technicalities.

THE ELEVENTH DYNASTY TEMPLE AT DEIR EL-BAHARI. Part I. By *Edouard Naville*, Hon. D. C. L., LL. D., Ph. D., Litt. D., Hon. F. S. A.; Correspondent of the Institute of France; Foreign Member of the Hungarian Academy of Science; Fellow of King's College, London; Professor of Egyptology at the University of Geneva. With chapters by *H. R. Hall*, 1

A., and *E. R. Ayrton*. Twenty-eighth memoir of The Egypt Exploration Fund. Published by the order of the Committee at London.

Temples have served as quarries from the time of Rameses II until now. It seems strange that with all the havoc that has been made so much should be learned from them. The Egyptologists such as Edouard Naville and H. R. Hall are skillful in deciphering the hieroglyphics, and learn much from the ruins. The plates given in the book show the colonnades, which are still standing and illustrate the styles of architecture which appeared in different periods. The Dynasty tombs furnish also a great deal of information. We have war scenes and hunting scenes depicted on the monuments, as well as views of domestic life. The religious beliefs which prevailed are very important in many ways. The Hathor Shrine is one of the most interesting objects, for it shows how the sacred cow could attract attention and win admiration as well as arouse worship among the people. The engravings in this book are worthy of study, for they reveal the religious beliefs and customs of the people. The Egyptians were given to the worship of animals, especially animals with human heads or sphinxes, though at a later date they worshipped divinities who had the human forms but animal heads. Their religion was influenced by their habitual mode of life as well as by surroundings. Domestic animals were common among them. These seemed to them like household gods or guardians, but were more responsive than any idol or image. The Babylonians worshipped such animals as the lion, eagle and the bull—animals with which they were familiar, though they often gave human heads and birds' wings to the ox and the lion. Sometimes they gave the bird's head to the human form. The Egyptians kept their sacred animals in apartments by themselves and had attendants whose care it was to see that the animals were well fed and at the same time kept in seclusion with an air of mystery about them.

MEMOIRS OF THE AMERICAN ANTHROPOLOGICAL ASSOCIATION,
Vol. II, Part 2. "THE CREEK INDIANS OF TUSKEGEE TOWN."
By *Frank G. Speck*. The New Era Printing Co., Lancaster,
Pa.: 1907.

The impression formed by reading this pamphlet is that the Creek Indians have not been benefited by contact with the whites. In the first place the portraits of the leader or chief of the tribe represents him as careworn and with an expression of anxiety upon his face. The people are supposed to be civilized, but they still preserve some of their old dances and seem to have

adopted one dance from the whites, because it is called a drunken dance or crazy dance. The letter-press shows the habits of the people. The old beliefs seem to have been preserved.

The origin of clans is described. The Master of Breath observed the people or the old-time beings; some began jumping upon trees and running about like panthers; some began leaping and running like deer; some were like birds; others like bears, raccoons, beavers, minks, foxes, etc. The Master of Life said they should be what they appeared to be. The belief was that dogs spoke and were like human beings, and so the clans received their names. The town officials represented the clan groups. The chief was called the Miko, and was chosen from the Bear or Wind clan. Next to the Miko were the warriors who formed the chief's council. A judge appeared who imposed penalties and fines. The clan descent is through the mother as in other tribes in pre-historic times. The Shaman or medicine man had a ceremonial rank. The belief was that animals made diseases, and the remedies were such as would affect animals. Therefore there was a panther medicine, a deer medicine, etc. Songs are repeated in which the animals are mentioned. Birds' nests were used as medicine. The Shamen danced and mumbled their songs and stories.

Their religious beliefs affected their common beliefs. The culture hero, the Master of Breath or of Life, enjoined the harvest ceremony to insure the crops and their subsistence from the earth. Game animals are clan totems. Even the dances are named after animals. The dance songs have been taken by the phonograph. They are divided into stanzas, at the end of which the dancers imitate the cries of the animal invoked by the dance. Most of these old customs and costumes have disappeared, but the buffalo head is still used as a mask, though the buffalo dance is done away with.

THE BIRTH OF THE NATION. By *Mrs. Roger Prior*. Macmillan & Co., New York: 1907.

Mrs. Prior has given a very readable account of the settlement and early years of the English colony at Jamestown, Va. Though her treatment of the subject touches lightly or not at all upon the economic or political problems confronting the nation at its birth, the book has more than an ephemeral value. The story of Pocahontas drops its mythical cloak, and emerges again as a credible story. Next to Pocahontas, Capt. John Smith stands out, notwithstanding all his faults, more admirable than ever. And the debt that the nation owes to his courage and power is marked in comparison with the sloth, incapacity, and jealousy of his fellow colonists.

THE BLUE BOOK OF MISSIONS. By *Henry Ottis Dwight*,
 LL. D. Funk & Wagnalls Co. : New York and London: 1907.

This book is intended primarily to supply helps to realizing the marvelous success of missions among different races. It takes a broad scope, including Africa, America, Asia, Oceanica, Polynesia, Europe and Australia, and gives the statistics for the different denominations—Adventists, Baptists, Congregational, Christian, Disciples, Methodists, Presbyterian, Episcopal, United Brethren, and others; it also includes Bible Societies, Tract Societies, Moody Institute, Salvation Army, and Young Men's Christian Association. It contains a chronological table of certain events, a list of recent books for missionary libraries; also a list of training schools for missionaries.

CITIES AND SIGHTS OF SPAIN: A Handbook for Tourists. By *Mrs. Aubrey Le Blond (Mrs. Main)*, author of "True Tales of Mountain Adventure," etc. With numerous illustrations from photographs by the Author. London: George Bell and Sons, Portugal Street, Lincoln's Inn Field: 1904.

One of the oldest churches in Spain is at Barcelona. It was constructed in 914. There is an old Basque game which is still continued. There are usually four players, two on each side, resembling somewhat the basket ball, but is played by four men generally.

The Roman aqueduct near Tarragona is an interesting object. A monastery here is worthy of notice. A bust now in the Louvre represents one of the subterranean gods, which is very human in its appearance and dress. Wood carving is highly developed. One group represents the Last Supper, and another the Agony in the Garden. The opportunities for studying architecture are numerous. Gothic buildings with Romanesque characteristics, while neither Spanish nor Gothic in origin, are suggestive and are regarded as among the grandest edifices in the world. The model of the house of Pilate is an attempt to represent Pilate's house at Jerusalem. The Roman bridge at Merida is also represented by an engraving. Among the prehistoric relics are what are called torroo. They represent animals like huge pigs. The Puerta de la Gloria, Santiago, is the most elaborate piece of architecture in Spain, perhaps in all Europe. The Armory at Madrid in the palace contains many specimens of coats of mail which belonged to the Middle Ages.

GEOLOGICAL SURVEY OF LOUISIANA. By *Gilbert D. Harris, Geologist*; *W. R. Dodson, Director*. Baton Rouge: 1907.

The advantage of a geological survey seems generally to be

greater than that of an archæological survey, and therefore more money is spent upon it. Louisiana as well as Missouri and other states in the Mississippi valley are known to have many pre-historic structures, but they are not made as much of as they were a few years ago. One reason for this is that the spread of population and the increase of agriculture and the cultivation of the soil has taken away the prominence of the earth works. It is well that individuals were so thoughtful as to make a note of these prehistoric works before they were destroyed. In the absence of any appropriation by the state government for mapping the earthworks, it is well that geologists have made a note of these works, and it is hoped that others will continue to do so.

THE MONGOLS: A HISTORY. By *Jeremiah Curtin*, author of "Myths and Folk-Lore in Ireland," "Hero Tales of Ireland," etc., with a foreword by *Theodore Roosevelt*. Boston: Little, Brown & Co.: 1908.

The word Mongol has been made to include immense groups of men, embracing the Chinese, Japanese, Manchus, Coreans, Tibetans, and Tartars. In India nearly all populations are classified with Mongols, and so it is with Persia. Even in Europe the Huns, Turks, and Magyars are Mongols. The Mongols began their career near Lake Baikal, where six rivers rise in the mountain lands, flowing toward the Amoor, where the Mongols began their activity. There they moved about with their cattle. The stealing of cattle, fighting, killing and capturing of women continued for ages.

The career of the Mongols is unique, culminating in their triumph beyond the great walls of China, making the Chinese emperor a vassal to the Katin. In 1223 Jenghis-Khan passed the winter near the Indus. After murdering and slaughtering he took the road toward Tibet, his path marked by deeds of cruelty. At last Jenghis lay helpless in bed, and with death near him he said: "The precious jade has no crust, the polished dagger no dirt on it. Man born to life is not deathless. The glory of a deed is in being finished. Follow not the will of another, and thou wilt have the good will of many."

The condition of Persia in 1254 is the subject of a chapter. The commonwealth and its destruction by the Mongols is the subject of another chapter. Egypt became a refuge from the Mongols who had conquered all lands. A great battle occurred in 1280 A. D., and the Mongols were defeated. They next occupied Damascus. The Moslems were delighted at their deliverance, but they rushed to the houses of Christians and slew all that they could find. The expulsion of the Mongols from China

took place about 1320 A. D., about 170 years before the discovery of America by Columbus.

THE JOURNAL OF THE TRANSACTIONS OF THE VICTORIA INSTITUTE, OR PHILOSOPHICAL SOCIETY OF GREAT BRITAIN. Edited by the Secretary, and published by the Institute in London.

This volume contains a large number of valuable articles, one by Prof. Flinders Petrie on "Researches in Sami;" another on the San Francisco and Valparaiso earthquakes by Warren Upham; another on Primitive Religions among the People of Asia Minor, by Rev. E. G. White; another by Dr. Masterman on recent discoveries in Palestine.

THE RELIGION OF THE INDIANS OF CALIFORNIA. By *A. L. Kroeber*. University Press: Berkeley: 1907. University Publications, Vol. IV, No. 6.

This pamphlet furnishes much information upon the religious practices of the Indians. These are classified into (1) tribal observances; (2) individual practices; (3) ceremonies. The idea was deeply rooted that the deer, when killed and eaten, came to life again, and reported their treatment at the hands of the hunters. The remark is made that the simpler the stage of culture the more important the Shaman. The Shaman acquires his powers by dreams, by initiation. The Shamans assume the forms of bears in order to inflict vengeance on their enemies. Medicine men were common, and the tubular pipe was used by them. There were two classes, those who had visions of the deceased object and those who used plants and other things to cure disease. The public burning ground was owned by the tribe. There were three classes of ceremonies—the mourning, the visiting, the burning of the body with its property. Shamanistic exhibitions of magic were common. The beliefs were the same as in other tribes, in the story of creation and the Creator. The stories came from the South. The Yourks had jumping dances. Maidens had a secret society. The rattlesnake ceremony was common among other tribes. Prof. Kroeber has been diligent in finding out the location of the various tribes and their mythology.

GREECE AND THE AEGEAN ISLANDS. By *Phillip Sandford*. Boston and New York: Houghton, Mifflin & Co.

The first chapter in this book describes traveling in Greece; the fourth describes the modern city; the eighth describes Delphi; the thirteenth, over the hills to Olympia. A chapter on Rhodes and another on Corfu finish the volume. The illustrations are numerous and interesting. An outpost in Arcadia gives the ruins of castles, both modern and ancient. It contains a narrative of excursions which bring the classic land before the eye in a summary way.

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JULY AND AUGUST, 1908

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Rev. STEPHEN D. PEET, Ph. D., Editor.

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ROMAN COLUMNS



American Antiquarian

VOL. XXX

JULY AND AUGUST, 1908.

No. 4

ROMAN BRIDGES OVER THE TIBER.

BY W. A. HARPER.

AS IN the examination of most subjects connected with the early history of the Romans, so here also we are brought face to face with superstitious rites and formulæ. In fact, the very word for the Roman pagan pope, "Pontifex Maximus," is derived, according to Varro L. L. 5, 83, from *pons* and *facere*, because he was the first bridge-builder. Varro (l. c.) says:

"*Pontifices, ut Q. Scaevola Pontifex Maximus dicebat, a posse et facere ut pontifices: ego a ponte arbitrar: nam ab his sublicius (the first bridge at Rome) est factus primum.*"*

In the next place the early Romans, as other primitive peoples, regarded the building of a bridge as an act of impiety, because the river god would thus be defrauded of the victims of swimming and fording. Mr. J. G. Frazer, *Eng. Journ. of Phil. XIV*, pp. 156-7, has collected some queer survivals of this primitive idea even in modern times. He shows that in Germany when a man is drowning in a river, they say the spirit of the stream is getting his annual victim; whereas in England the spirit of Ribble was content with a life each seven years. In 1843 at the building of a new bridge at Halle, Germany, the people thought a child should have been built into it, but finally agreed to the substitution of a chicken. When the Hoogly bridge was being built at Calcutta, the natives got hold of the idea that Mother Ganges, indignant at being bridged, had at last consented to the insult on condition that each pier of the structure be founded on a layer of infant skulls. In Albania there is a prevalent tradition that human beings were sacrificed whenever a bridge was built, and recently, when a new bridge was built over the Arcen, twelve sheep were slain and their heads placed under the pillars. Traditions of human sacrifice are also current in Greece, and the people of Zacynthus would today perform them but for the law. According to Grimm all German bridges were formerly built by the devil. In Herzegovina the Moslems regard the civil engineer

*Cf. also Dion. Hal. 3, 45, and Plut. Numa 9, 2. Plutarch here cites several possible derivations, laughing at the one accepted by Varro.

with pious horror, and curse all bridges over which they pass as the devil's handiwork.

It is not strange, then, that "Father Tiber, to whom the Romans pray," should be propitiated for the insult of a bridge built over him. In early times no doubt human beings were thrown into the river from the Pons Sublicius,* but later, when the primitive hardness of the Romans had been softened by culture and civilization, on the Ides of May twenty-four rush images of the human form were thrown in annually from the same bridge by the Pontifices and the Vestals. We are told as much by Ovid *Fasti* 5, 622:

"Tum (Ides of May) quoque priscorum virgo simulacra virarum mittere roboreo scirpea ponte solet." These rush images were called Argei, as we learn from Varro *L. L.* 7, 44: "*Argei ab Argis; Argei fiunt e scorpeis, simulacra hominum XXIIII; ea quotannis de ponte sublicio a sacerdotibus publice deici solent in Tiberim.*" Festus (Muell.), p. 15, tells us the same thing: "*Argeos vocabant scirpeas effigies, quae per virgines Vestales annis singulis iaciebantur in Tiberim.*"**

*Macrobius *1, 11, 47*, ascribes the origin of this custom to Hercules and would lead us to believe that images of men were used from the beginning. He says (*l. c.*): "*Epicadus refert Herculeum occiso Geryone cum victor per Italiam armenta duxisset, ponte, qui nunc sublicius dicitur, ad tempus instructo, hominum simulacra pro numero sociorum, quos casus peregrinationis amiserat, in fluvium demisisse, ut aqua secunda in mare advecta pro corporibus defunctorum veluti patriis sedibus redderentur, et inde usum talia simulacra fingendi inter sacra mansisse.*" This is a prophecy after the event and a sheer guess to account for a strange custom, whose origin had been forgotten. In view of the fact that the hurling of human beings into streams was practiced among other peoples, it seems most reasonable to suppose that this custom arose among the Romans from that source.

**Plutarch, hearing these rush images called Argei, naturally connected them with the Greeks and so gives us an explanation all his own in his *Rom. Quaes.* 32: "The question is, 'Why do they who throw the effigies of men from a wooden bridge into the river, in the month of May, about the full moon, call these images Argives?' and the solution is, 'Was it that the barbarians who of old inhabited about that place did in this way destroy the Grecians whom they captured? Or did their so-much-admired Hercules reform their practice of killing strangers, and teach them this custom of representing their devilish practice by casting in images? The ancients have usually called all Greeks Argives.' Or else it may be that, since the

In the third place the ancients thought a light and temporary structure was less offensive to the river-god, and accordingly the first Roman bridges were made of wood, without even the use of metal for joining. At least this was the case with the Pons Sublicius, the first bridge over the Tiber, as is learned from Pliny N. H. 36, 100: "*Cyzici et buleuterium vocant aedificium amplum, sine ferreo clavo ita disposita contignatione, ut eximanatur trabes sine fulturis ac reponantur, quod item Romae in ponte sublicio religiosum est, posteaquam Coelste Horatio defendente aegre revolsus est.*"* This prohibition of the use of iron in sacred matters appears elsewhere. The Arval brothers had to offer expiatory sacrifices every time it was employed in their grove. Flint knives were used in sacrifices to a very late period. The well-known proverb, "*inter saxum et sacrum,*" gives ample testimony of the early use of stone sacrificial implements. Strabo 15, 3, 15, says that in Cappadocia victims could not be slain with a knife, but only with a stone.** Among the Jews, too, iron was under a taboo in sacred matters, for we read in *I Kings 7:7*, that no iron tool was used in building the temple, and again we read in *Exodus 20:25*, that iron was not to be used in building an altar. But by 100 B. C. the Romans had seemingly forgotten the main reason for the rules and ritual of their ancient bridge-building, and explained it by risk of attack, as in the case of Horatius Cocles. In this view there may be something. No less a scholar than Mommsen accepted it, and the Elder Pliny (l.c.) inclines that way. And yet we may be certain, relying on the taboo of iron in sacred matters, that the strategic move was secondary to the ritualistic and superstitious.

There seems to be no doubt that the art of bridge-building, like that of sewerage, was one indigenous to the Romans; for the Latin word for bridge, *pons*,† is found with a similar meaning in

Arcadians esteemed the Argives open enemies by reason of neighborhood, they that belonged to Evander, flying from Greece and taking up their abode in Italy, kept up that malignity and enmity." Dion. Hal. places the number of these images at thirty instead of twenty-four, as all others do who specify a number.—Dion Hal. 1, 38.

*Dion. Hal. 3, 45, and Plut. Numa, ch. 9, tell us also that no iron was used in the construction of the pons sublicius.

**In later times the Roman priests used bronze in their sacrifices. On this point consult Macr. 5, 19, 11f., Serv. Aen. 1, 448, and Joannes Lydus de Mensibus 1, 31:

"καὶ τοῦτο δὲ πρὸς τοῦ Νουμᾶ διατέθεται, ὥστε τοὺς ἱερεῖς χαλκαῖς ψαλλῖν, ἀλλ' οὐ σιδηραῖς ἀποκείρεσθαι."

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 ... p. 79, says:
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perhaps a series of floats which could be easily disconnected at the approach of an enemy." Richter *Top. der Stadt Rom.*, p. 756, says it must have led directly into the heart of the city, and was therefore so built that at a moment's notice it could be broken down. Pliny *N. H.* 36, 100, says it was so built that its beams could be removed and replaced with ease. Festus, p. 293, says that it had piles, and several passages quoted above show that no metal was used in its construction. This would seemingly exclude Platner's theory, and we may imagine it as a series of piles, two by two, joined by a horizontal beam dovetailed into the piles, and with boards laid over these, held in place by the projecting heads of the piles. This was a very simple sort of bridge but the very sort we should expect a primitive people, forbidden by religious scruples to use any sort of metal to hold it together, would have built. After the heroic act of Horatius Cocles described in Livy 2, 10, the idea arose that it had been thus constructed as a means of ready defense. This was the view of the Elder Pliny and of Mommsen, as we saw above. Richter and Platner also adopt it. But considering the immense amount of superstition connected with this bridge and with bridges in general among primitive peoples cited above, it would seem more reasonable to regard the religious motive as the prime cause and the military as second in importance as well as in chronology. In harmony with this view is the supreme importance of the Pontifex Maximus** in the Roman religious system, who has been justly described as a cross between a theologian and a civil engineer. With this view also the curious, otherwise unexplainable custom of throwing the twenty-four rush images of the human form into the Tiber on the Ides of May seems agreeably to harmonize.

As we said above, tradition ascribes the erection of this bridge to Ancus Marcius. But practically all topographers and archaeologists now agree that there must have been a bridge long before the time of this king. The truth may be that the bridge was restored by or under Ancus Marcius.

The location of this bridge has given rise to much discussion, and seems not to be even yet definitely settled. Jordan *Roem. Top.*, vol. I, pp. 399-407, goes into the matter in much detail. He calls attention to the fact that the breadth of the Tiber through Rome is well-nigh uniform; that the *insula Tiberina*,

**Varro *L. L.* 5, 83, shows the relation of the pontifices to bridge-building: "Nam ab his (pontificibus) sublicius est factus primum, ut restitutus saepe, quom in eo sacra et uis et cis Tiberim non mediocri ritu fiant."

Fasti 6, 477f., says: "*Pontibus et magno iuncta est celeberrima circo Arca, quae posito de bove nomen habet.*" This would place the bridge, if it refers to the *Pontes Aemilius et Sublicius*, as it most likely does, where scholars generally agree in placing it. Then, again, it is strange that Livy 35, 21, 1, in describing the inundation of the year 193 B. C., speaks of the destruction of "*duos pontes (which ran over the insula Tiberina), aedificia multa circa portam Flumentanam,*" but says nothing of the Pons Sublicius; for if it had been there, it, too, would have been destroyed and he would have been certain to mention it. The last point of importance in the chain of positive evidence is the flight of C. Gracchus from the Aventine to Trastevere. Says Val. Max. 4, 7, 2: "*Quorum Pomponius—concitatum insequentium agmen in porta Trigemina aliquamdiu acerrima pugna inhibuit.—Lactorius autem in ponte sublicio constitit et eum donec Gracchus transiret.*"* Now if Gracchus fled from the temple of Diana,** which was below the porta Trigemina, and if his friends defended him at the porta Trigemina and at the Pons Sublicius, we are forced to locate the bridge somewhere between the porta Trigemina and the porta Flumentana (for it stands to reason that they would also have made a stand there, too, had they passed through it), or where scholars have practically now agreed to place it.

This bridge early became a "sacra"—in fact from its first erection it had come under that category. Varro L. L. 5, 83, says: "*Nam ab his (pontificibus) sublicius (sc. pons) est factus primum, ut restitus saepe, quom in eo sacra et uls et cis Tiberim non mediocri ritu fiant.*" Dion. Hal. 3, 45, says:

"*ἱερὰν (γέφυραν ξυλίην, i. e., pons sublicius) εἶναι νομίζοντες.*"†

Being of a flimsy construction, it was often swept away by inundations, of which we have an account of six—Livy 35, 21, 5 (193 B. C. ?); Dio Cassius 37, 58 (160 B. C.); 50, 8 (132 B. C.); 53, 33 (121 B. C.); 55, 22 (4 A. D.); and Tac. Hist. 1, 86 (69

*Plutarch C. Gracchus 16, App. B. C. 1, 26, and Orosius 5, 12, agree with Valerius Maximus in essentials in the description of this event in Gracchus' career.

**The exact location of the templum Dianae is not accurately determined, but that the temple from which C. Gracchus and his companions fled was on the Aventine is conceded by all.

†For further evidence of the sacred regard in which this bridge was held compare Dion. Hal. 1, 38, Varro L. L. 7, 44, Ovid Fasti 5, 622, and Pliny N. H. 36, 100.

20 THE LIFE OF JOHN B. FURBER.

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after, by another bridge with the Janiculan bank. These bridges were wooden like the Pons Sublicius, and were destroyed by the inundation of the year 193 B. C., as we are told by Livy 35, 21, 1. They are referred to as "*duos pontes*" in Macrobius 3, 16, 14-17, and elsewhere. Religious scruples did not prevent the construction of these bridges in later years of more substantial and enduring material, and accordingly they were later replaced by the stone bridges, the Fabricius and the Cestius, of which in chronological order.

II. PONS MULVIUS. This bridge was not within the city, but was located about two and one-half miles north of it and conducted the great Via Flaminia across the Tiber at that point. This road was built in 220 B. C. by C. Flaminius, censor at the time, and it is likely that the bridge is contemporary with it, but the first reference we have to it is Livy 27, 51, 2, where, in speaking of the events of the year 207 B. C., he says: "*Ad Mulvium usque pontem continens agmen pervenit.*" We get the correct spelling from the Mon. Anc. 4, 19, but it is elsewhere variously spelled Molvius, Molvi, Molbi, Milvius. In the Middle Ages it was called Mole, de Mole, etc. It is now called the Ponte Molle. Statius in his *Silv.* 2, 1, 170, calls it Mulvius Agger. It is famous as the bridge over which the conspirators associated with Catiline fled in confusion, as Cicero tells us in his third oration against Catiline, 2: 5: "*Occulte ad pontem Mulvium pervenerunt, atque ibi in proximis villis ita bipartito fuerunt, ut Tiberis inter eos at pons interesset.*" Here, too, the Allobrogian ambassadors were intercepted with the fatal letters. Sallust *Cat.* 45, 1: "*His rebus ita actis, constituta nocte qua proficis—cerentur, Cicero per legatos cuncta edoctus L. Valerio Flacco et C. Pomptino praetoribus imperat, ut in ponte Mulvio per insidias Allobrogum comitatus deprehendant.*" Florus *Bellum Civile* sub Lepido 3, 23, 6, writes as follows: "*Sed iam Mulvium pontem collemque Ianiculum Lutatius Catulus Gnaeusque Pompeius, Sullanæ dominationis duces atque signiferi, alio exercitu insederant,*" from which we conclude that in time of war and especially of civil war this bridge was of great strategic value.*

Twice is a Scaurus designated as the builder—Val. Max. 8, 1: "*Censor viam Aemilianam stravit, pontem Mulvium fecit* (Aemilius Scaurus, censor in 110 B. C.)," and Am. Marc. 27, 3, 9: "*Ad Mul-*

*This bridge is also of interest because of this bit of information which we get from Cic. *Ad Att.* 13, 30, 4 (45 B. C.): "*Horum ego vix attigi paenulam; tamen remanserunt, ceciditque bello; scilicet casu sermo a Capitone de urge augenda, a ponte Mulvio Tiberim duci*

it would be some time after this step was taken before the art of spanning the arches between the pillars would be acquired.

Jordan Roem. Top., vol. I, pp. 407-414 is inclined to cast all sorts of doubt on the identification of this bridge, and on the art of stone bridge building as well. He relies on a fragment of a calendar from Allifæ (C. I. L., vol. I, p. 294), which reads as follows: "*Feriae Portuno ad pontem Aemilium, Iano ad theatrum Marcelli.*" In his comment on this, Mommsen shows that it was before 29 B. C., but Jordan says it could not be later than this. He is inclined to think that the great celebrity of the Aemilian family makes it impossible to get any nearer dating it than this. He dogmatically dismisses Plut. Numa 9:

ἡ δὲ λιθὴν πολλοῖς ὕστερον ἐξεργάσθη χρόνους ὑπ' Αἰμιλίου ταμείντος"

with the remark that a writer of Hadrian's time would naturally speak of the prime of the republic by such a phrase as this. He further identifies this bridge as the one called later Pons Probi, and explains the appearance of the double for one and the same bridge in the Curiosum and Notitia by a species of juggling unworthy a scholar of his ability.*

But scholars have generally agreed to place this bridge, the first stone one, in the year 179 B. C., relying on Plut. Numa 9 quoted above, and Livy 40, 51, 4: "*M. Fulvius* (Censor with M. Aemilius Lepidus in 179 B. C.) *plura et maioris locavit usus;*

*Jordan Roem. Top., vol. I, p. 423f, says: "Die Spuren der urspruenglichen Ornung treten unverkennbar hervor (1, 3, 6, 7 fraglich 5, 8): von den sicher widersprechenden ist der p. Mulvius hoechst wahrscheinlich urspruenglich als ausserhalb der Stadt liegend nicht mit aufgefuehrt gewesen, ist also whol sicher nachgetragen. Naehme die zweite Stelle statt des Aemilius der ganz fehlende Neronianus ein, so wuerden mit Ausnahme des Sublicius alle uebrigen in richtiger Reihenfolge stehen, denn 8 Probi fuer Ponte rotto zu halten, ist erlaubt, ja nach dem ueber den pons Theodosii et Valentiniani Gesagten, gradezu nothwendig. In diesem Sachverhaeltniss scheint mir Verwirrung des Verzeichnisses zu liegen; der an falscher Stelle eingeschobene Name Aemilius ist der aeltere des nach seinem wiederhersteller benannten pons Probi, welcher Name in die Volkssprache nie Eingang gefunden hat. Das sonst austeessige Verkommen eines Doppelnamens in dem Verzeichniss erkluert sich also wohl daher, dass in der amtlicher Liste, welche dem erste Herausgeber vorlag, der Neronianus nech stand, der Herausgeber aber ihn als nicht mehr existirend strich und ihm, um die Zahl festzuhalten, den Aemilius substituierete."

Inscribed upon it are the following inscriptions—C. I. L. 1, 1, 600, and 6, 1305 (both being the same): (a) "*L. Fabricius C. f. Cur. viar. faciundum coeravit.*" (b) "*eidemque probavit.*" (c) "*Q. Lepidus M. f. M. Lollius M. f. cos. s. c. probaverunt.*" The L. Fabricius mentioned as the builder in this inscription was *tribunus plebis* in 62 B. C., and seems to have built this bridge as a special *curator viarum*** in that year. The inscription is non-committal in regard to the date of the building, which is given us by Dio Cassius 37, 45: †

"Τότε (62 B. C.) μὲν ταῦτα ἐγένετο καὶ ἡ γέφυρα ἡ λιθίνη κατασκευάσθη ἢ ἐς τὸ νησίδιον τὸ ἐν τῷ Τιβέριδι δὲ φέρουσα Φαβρικία κληθεῖσα."

The restoration referred to in (b) of the above-quoted inscription occurred in 21 B. C., when Q. Lepidus and M. Lollius were consuls; the inscription tells us it was restored in accordance with the Senate's decree. So thorough was the restoration that no further ones of importance have since been necessary. In the Middle Ages, from the proximity of the Ghetto, it was called *pons Iudaeorum*. At present it is called *ponte dei Quattro Capi*. It is built of tufa and peperino and faced with travertine.

V. PONS CESTIUS. As the Pons Fabricius took the place of the one of the *duos pontes* which led from the Roman bank to the insula Tiberina, so the Pons Cestius took the place of the one which led from the island to the Janiculan bank. It is very likely that this substitution took place at the time of the building of the Pons Fabricius (62 B. C.), or soon thereafter; at least this is Richter's view.* It is well known that the Cestian family was very prominent at that time. Its architecture and material are similar to the Pons Fabricius. It is first mentioned in the Notitia (334 A. D.), but is now identified as the Pons Gratiani, restored under that emperor by Symmachus as *praefectus urbis* in 364-365 A. D., but not completed until 370 A. D., according

**By what authority he was appointed to this office we do not know. We read of other *curatores viarum* under the Republic, but this is the only one definitely cited as a bridge-builder, though it is easy to see how this would happen. Censors seem to have been the usual bridge-builders. Under Augustus the *Curatores viarum* became regular commissioners.

†If we did not have the bridge, the following from Porphyrio ad Hor. Sat. 2, 3, 36, would locate it for us: "Pons dicitur, qui est insulae illius, quas in medio Tiberi posita est, ideo Fabricius, quia a Fabricio factus."

*Roem. Top., p. 764.

to the Tribunician power of the following inscription—C. I. L. 6, 1,175: “*Domini Nostri Imperatores Caesares Fl. Valentianus Pius Felix Maximus Victor ac Triumph. semper Aug. Pontif. Max. Germanic. Max. Alamann. Max. Franc. Max. Gothic. Max. Trib. Pot. VII. Imp. VI. Cons. II. P. P. P. et Fl. Valens Pius Felix Max. Victor ac Triumph. semper Aug. Pontif. Maximus Germanic. Max. Alamann. Max. Franc. Max. Gothic. Max. Trib. Pot. VII. Imp. VI. Cons. II. P. P. P. et Fl. Gratianus Pius Felix Max. Victor ac Triumph. semper Aug. Pontif. Maximus Germanic. Max. Alamann. Max. Franc. Max. Gothic. Max. Trib. Pot. II. Imp. Primum P. P. P. Pontem Felicis Nominis Gratiani in usum Senatus ac Populi Rom. Constitui Dedicarique iusserunt.*”** Up till 1849 there were two marble tablets attached to this bridge bearing the above inscription, but in that year for the protection of the city a part of the bridge was torn down by order of Garibaldi, and one of these tablets was thrown into the Tiber.

VI. PONS AGRIPPÆ. In 1887 the following inscription was found—C. I. L. 6, 31, 545: “*Paullus Fabius Persicus C. Eggius Marullus L. Sergius Paullus C. Obellius Rufus L. Scribenius Libo curatores riparum et alvei Tiberius ex auctoritate Ti. Claudii Caesaris Aug. Germanici Principis (sui vel senatus) ripam cippis positis terminaverunt a Trigario ad Pontem Agrippæ.*” The Paullus Fabius Persicus mentioned in this inscription was consul in 34 A. D.; of the other curatores we know nothing. At first scholars were inclined to doubt the existence of such a bridge, especially Jordan *Roem. Top.*, vol. I, p. 422, but the finding in the year 1889 of the remains of the piers, one hundred yards above the Pons Aurelius puts the matter beyond doubt, though we know nothing else of it.

VII. PONS NERONIANUS. This bridge connected the Campus Martius with the Vatican meadows, where were the gardens of Agrippina and the circus of Nero, and was probably built between 60 and 64 A. D. It is first mentioned, however, in the “*Mirabilia Romæ*,” compiled about 1150, in a later edition of which, known as the *Anonymus Magliabecchianus*, compiled about 1410-1415, it is further described as *pons ruptus ad Sanctum Spiritum* in Sassia. It may have been destroyed in Hadrian’s time; it certainly was before Constantine’s. Its ruins have been found about one hundred yards below the Pons Aelius, by which it was rendered unnecessary, if it had not been already destroyed the time of the erection of that bridge, 134 A. D.

**Platner, *Ancient Rome*, p. 81; compare also Pol. Silvius, 545.

VIII. PONS AELIUS. On great marble slabs on both its sides was the following inscription—C. I. L. 6, 973: "*Imp. Caesar Divi Traiani Parthici filius divi Nervae nepos Trainanus Hadrianus Augustus Pontif. Maxim. Tribunic. Potest. XVIII. cos. III. P. P. Fecit.*" This tells us that Hadrian built the bridge and that he built it in the year (*Trib. Pot. XVIII. Cos. III*) 134 A. D. Even if we did not have the bridge we should have no difficulty in locating it, relying on what we are told in Spartianus Hadr. 19, 11: "*Fecit (sc. Hadrianus) et sui nominis pontem et sepulcrum iuxta Tiberim,*" and Dio Cassius 69, 23, 1:

"Ἐτάφη (sc. Hadrian) δὲ πρὸς αὐτῷ τῷ ποταμῷ, πρὸς τῇ γεφύρῃ τῆς Αἰλίου. Ἐνταῦθα γὰρ τὸ μνήμα κατασκευάσατα."

From the *Anonymus Magliabecchianus* we learn that it was also called *pons Hadriani* and then *pons Sancti Petri*. It is now known as the *ponte S. Angelo*. It joined the Campus Martius with the Mausoleum Hadriani on the Janiculan bank. As originally built, it had three main center arches, with three smaller ones on the left and two on the right, of peperino faced with travertine. With the exception of the balustrade, which belongs to a later period, Hadrian's original structure continued until 1892, but two of the three arches on the left had been covered up. The ends of the bridge had to be entirely rebuilt to accommodate them to the new embankment of the present Italian Government.

IX. PONS AURELIUS. This is the name which occurs in the Notitia. In the Mirabilia it is called *pons Antonini*, while in the *Anonymus Magliabecchianus* it is called *pons Ianicularis*. It was partially destroyed in 772 and therefore called *pontus ruptus* until 1475, when, being restored by Sixtus V., it received the appellation *ponte Siste*, which it wears today. It must also have been called *pons Valentiniani*, from a restoration. Evidence has been handed down to us in an inscription found in 1878 just below the first arch of the present *ponte Sisto*, which records the rebuilding of an arch and bridge by Valentinianus in the years 365-366—C. I. L. 6, 31, 402; 31, 412, of which 31, 402, gives the essential facts and which is therefore here quoted: "*Imp. Caesari D. N. Fl. Valenti Max. p. F. Victori ac Triumphateri semper Aug. S. P. Q. R. ob providentiam quae illi semper cum inclyto fratre communis est institui ex utilitate urbis aeternae Valentiniani Pontis atq. Perfect. Dedicandi operis honore delato iudicio princip. maximor. L. Aur. Aviano Symmacho v. c. ex praefectis urbi.*" Since Gratian was given the title Augustus on August 24, 367, and since this title is not on this or any one of the other nine inscriptions referred to above, the bridge must have been dedicated before that time, after its restoration by Valentinianus.*

tified with the Pons Aemilius, then presumably in ruins. Conclusive evidence is not in hand here, and we cannot therefore give an "*ipse dixit*" to the matter. On the whole, however, it seems better to follow Richter and to regard the Pons Theodosii (also called in the *Mirabilia pons Marmoreus* and *pons in ripa Romaea*) as the restored Pons Probi. From the letters of Symmachus cited above it appears to have been begun in 381, but not to have been completed before 387 A. D. It was the last of the bridges of the city and the farthest down the stream, crossing the Tiber under the Aventine near the Marmorata. It was partially destroyed by fire in the Eleventh Century, and completely in 1484, but the bases of the piles still exist under the water.

Jordan (l. c.) thinks the bridges called *pons Marmoreus* (Theodosii) *et pons Valentinianus* are one and the same and so falls into error, but it is a little strange that all the other bridges come in order down the stream—" *pons Milvius, pons Adrianus (Aelius), pons Neronianus, pons Antoninus (Aurelius, Valentinianus), pons Fabricius, pons Gratianus (Cestius), pons Senatorum (Aemilius, major), pons marmoreus Theodosii (Probi), et pons Valentinianus* (this bridge, the same as the *pons Antoninus vel Aurelius*, being thus mentioned twice). Yet there seems to be every reason to believe that the *Mirabilia* list is wrong, and that the inscription cited above (C. I. L. 6, 31, 402) is right, and that therefore the *pons Valentinianus* = the *pons Aurelius vel Antoninus*, and not the *pons Marmoreus Theodosii vel Probi*.

ORIGIN OF THE WHITE DEER DANCE.

*The Dance of Worship of the We-gat Indians of Humboldt Bay,
Humboldt County, California—An Aboriginal Tale.*

BY MRS. R. F. HERRICK.

THIS legend or history was first told to me in 1859 by Ki-welot-ah, the head chief of the tribe, after I had entered into brotherhood with him. At this time he was 102 years old. The oldest legend of our people does not tell where we came from, but it goes back so far we cannot count. Our tribe did not have *mow-ich* (deer), nor *mal-ick* (elk), nor *mock* (bear)—only rabbits, coon, mink, quail, ducks, geese, clams, crabs and fish for meat, and many kinds of berries and roots, nuts and grass seed. Our people were not as they are now, not so smart.

One day, so many years ago we cannot count, a young man and Co le we up qua, daughter of a chief, were out picking berries when a strange man came down from *Tomp* (sun) and told them to make a large basket of willow sprouts, and drew the dimensions on the ground. They were to go into the forest to make it, where no one would see them. They must not tell anyone what they were doing, and when they were done he would come to them again. They were very much frightened, and proceeded at once to do as they were told, working day after day until it was finished, when the same man appeared and showed them how to pitch the outside with the soft gum of the spruce and pine trees. Then he told them to gather many roots and store them inside, and at last to go inside and stay all night.

When they awoke in the morning it was raining, and continued to rain many days, and the basket floated. But one morning the basket was still, and the Indian opened the door in the side. They were still at their old home. But the trees and brush were all dead and there was no living thing in sight. But there was a coon track leading from the basket, showing it had lived on the trees. The man wanted the woman to help him build a house, but she would not. She covered her face and wailed for her dead. So the man built the house, and told her they must be as husband and wife as there were no more people on the earth, and the woman went in the house as a wife.

The first born was a son, but he could not talk the language of his sire, and when old enough to take a sister for a wife and

settled at Matole. The second son could not talk to father or brother, and he took a sister for a wife and went to the mountains. The third son could not talk with any of the others, and he went with his sister-wife to the Klamath River. After that there were many sons and daughters, but they all talked like their father. The Great Spirit did not want them to all talk alike, and so at each place the brothers married sisters and cousins until there were large villages. But they were not smart. So the strange Indian came again, and told each village that their women must go to other villages for husbands, for they were like the fish—they did not have any sense. So for two generations they must not intermarry, but send their women to other villages to get husbands. From this time the Indians improved in knowledge.

He also told the women that some time in the future they would find a Pi-Soc root with two leaves and they must tell their daughters to tell their daughters not to dig it for every generation until it was found. So every woman was looking for it. Time passed on, generation after generation, until the redwood trees that came up after the flood had grown to forest trees, and there were We-gat villages from Mock-Cu-ol-et (Bear river) to Skinah-cu-ol-et (Little river.) When at the village where the city of Eureka now stands a man died who had a wife and daughter, and when the council met to settle his affairs and send the wife and child to her nearest male relative they found she did not have any. Such a thing had never been recorded in any annals of the tribe.

After the wise men had discussed the matter they decided that Co-toc-qua (God) meant something by it, whether for good or evil they could not tell, and they decided to build her a house on the outer edge of the village and supply her with meat, and her daughter could dig the roots and herbs, gather the nuts, and pick the berries.

One day when the girl was out on the edge of the forest digging roots she saw a large double leaf Pi-Soc, and she thought it a large one. She thought of her mother's warning not to dig it, but curiosity got the better of her, and she drove her stick deep into the soil and gave it a quick pry, when out flew a live baby. In fright she started to run, but the baby clung to her string dress. When she found she could not leave it she carried it to her mother's *mo-al* (house) and, leaving it outside, went in. But the baby cried, and the mother said: "You dug the double Pi-Soc root and you have the Great Spirit's child. She went out and took the child in, and it grew apace.

When he was five years old he took his grandmother out and showed her the first elk and deer, also the first bear and Cali-

foria lions that had ever been there. He fashioned the first bow and arrows and killed the first deer, and taught the Indians how to cure the hides and prepare the sinew for use. He taught the women how to make thread from it, how to fashion string dresses instead of the fiber and grass dresses they wore, which were stiff and cumbersome. He taught them how to make cooking stones to cook the meat, and many other things until he was ten years old, when he commenced to teach the men how to make canoes and knives of bone flint and obsidian, to skin the animals they killed, also how to make glue from salmon skins and sturgeon heads, and to make stone and bone points to their arrows. He also taught them the laws to govern the tribe and to be kind to their women; to never lie or have a forked tongue; that if they obeyed the laws the Great Spirit sent him to teach them, they would be the children of Co-toc-qua, and he would never turn his face from them.

When he was fifteen years old he was loved and honored for his great wisdom and the people called him Skinah Etoch (little father). One day he saw all the village gathered on the point where the Occidental Mill now stands and looking on the water of the bay. So he went to see what was the matter. He saw a strange man standing on a small mud island uncovered at low tide, and small mud sharks swimming up and the man catching them by the tail and throwing them onto the high land. He motioned for Skin-ah Etoch to come to him. They talked for a few minutes, when a large fish like a shark swam up and threw his tail onto the island near the boy, who laid his hand on him. Then the fish pulled the boy into deep water and swam for the entrance of the bay. The Indians pursued in boats, but the fish swam so fast he was soon out of sight and the strange man had disappeared. The Indians commenced to put ashes on their heads, and all joined in the death wail, when into their midst came a snow white deer, the first ever seen. Three of the warriors shot it, when it turned and ran to the mo-al of Skin-ah Etoch and fell dead. Then the tribe thought the little father was dead and his spirit had returned in the form of a white deer. So they skinned it with the head and feet intact and tanned it. The third day they erected it on a pole and were having their first white deer dance when the fish returned with Skin-ah Etoch. He told them the white deer was like him, that white meant purity; and they could hold their white deer dance in remembrance of him and hand it down to future generations with the things he had taught them. Then he told them that Co-toc-qua was going to take him home. But they must never forget him or

the laws the Great Spirit had given them; and that he would receive them in the Great Council when the Father called them, and so the historians of the tribe whose duty it was to keep the records and pass them on each learned his part.

One morning his grandmother went out to the edge of the forest to get some sweet acorns that grew on the peninsula oaks for him. When she would go to pick up one she would hear a voice say: "Don't take the little one." She could see no one, and she became frightened and went in and told the little father. He smiled and said: "I think I am the little one; they have come for me." And going outside, two strange women appeared, one on each side of him. All the village gathered around him and he told them not to forget anything he had told them, and to obey the laws of the tribe, and Co-toc-qua would keep his face turned toward them, and told them to love and care for his earthly mother, that her days would be short. Then the women locked their arms in his, and they arose from the earth and disappeared from sight, and though Zo-wa, his mother, was well she soon died, and no one has ever seen him since, though we have looked for his return for many years.

Joe Star added this: Our people have departed from the ways of our fathers; they have learned to use the forked tongue of the wha-ga (white man), and we will soon become only a memory of the past. Our greatness will be lost unless you do as you promised us—make a book like your people do. Joe Star has joined the great majority, and is sitting in the Great Council, a just man and a friend of the whites always.

Before the Indians can have the dance they must decide what villages they will ask to participate. Then the chiefs of these villages will meet and each will tell what men are in trouble or grief. The head men will donate enough Al-e-quo-cheek (money) to give each such a present that they will rejoice, for none must go in the dance with grief in his heart. They dance and sing down the nearest river, asking the Great Spirit to make the food grow to nourish the fish, then along the shore of Sol-ol-ah (ocean), asking him to send whales ashore and make the surf fish plentiful. Thence over the prairies, asking him to make the grass grow for the elk and deer, and the seed to ripen for the birds. And lastly through their villages, asking him to keep away the bad Spirit of Sickness and teach his children wisdom.

The woman does not dance in the dance of worship, but she can sing. She cooks for them. The dance usually lasts two weeks and never stops day or night. When one is tired another takes his place. And the council fire never goes out during th

dance. The dance is solemn; no mirth is displayed, and no games indulged in, not even by the children, who watch quietly what their elders do.

THE WONDERFUL OLD RUINS OF POLONNARUA IN CEYLON.

The ruins of Polonnarua, though more modern than those at Anuradhapure, have a special interest and importance because they form a link between the ancient and modern styles at a time when the Buddhists had ceased to build in India. One of the most interesting, and one of the first to be reached after leaving the rest house, is the Dalada Mailgawa, or Palace of the Tooth, which was built to receive the most sacred relic of the tooth of Buddha when it was removed from the temple of the same name in Anuradhapura and brought to Polonnarua after the capture of Anuradhapura by the Malabars.

There is an interesting mixture of Hindu and Buddhist architecture in this, as in most of the buildings which have been excavated; due, no doubt, to the influence of the invaders and the broad eclecticism of Buddhism. The sharply defined figures and moldings have suffered little, and the well cut blocks of granite of which the structure is built fit as accurately today as when they were first placed in position. The decoration on the base of the pilasters is interesting, and the shape of the capitals is most unusual. On the south and west sides are the remains of outside chapels, one of which was protected by a stone canopy; this was no doubt desecrated by the iconoclastic Malabars, as many broken stone figures have been found in the jungle close by.

The plan of the building is Hindu, and consists of an outer quadrangle, an inner, and an innermost court. The entrance is on the north side. The shrine where the tooth was kept had a conical or octagonal roof of brick, part of which is still in position and is decorated with a frieze of curiously shaped bricks. On one side there is a stone spout which conveyed to a square receptacle, still to be seen on the outside of the temple, the water of which was poured in libations over the most holy relic.—*From "A Buried Civilization of Ceylon,"* by ROSALIE SLAUGHTER MORTON, in *Scribner's*.

ARCHAEOLOGICAL AND ETHNOLOGICAL COLLECTIONS IN WISCONSIN.

BY THE CUSTODIAN.

THE collections of the archæological and ethnological department of the museum of the State Historical Society of Wisconsin, at Madison, number at the present time in the neighborhood of 15,000 specimens, some 5,000 of which are at present on exhibition in the principal ethnology hall. They are arranged in wall- and table-cases along the center and sides of this hall. Instructively labeled and accompanied with photographs, prints, drawings, and maps, their valuable contents are made additionally attractive to the University students and to large numbers of miscellaneous visitors, who come from all parts of Wisconsin and neighboring states.

The series of archæological materials at present on exhibition in the table-cases include the following:

1. Illustrating the manufacture of chipped flint implements. The products of both the "roughing-out" shops at the quarry sites, and of the finishing shops are shown, together with the primitive implements employed in their making. Caches of flint blades and disks add to the interest of the series.

2. Illustrating the classification and uses of chipped stone implements. This series includes arrow- and spear-points, knives, scrapers, perforators, spades, hoes, ceremonials, etc.

3. Illustrating the manufacture, classes, and uses of pecked and ground stone implements. It includes axes, celts, gouges, chisels, adzes, pestles, mortars, hammers, mauls, etc.

4. Miscellaneous stone, hematite, shell, bone, lead, iron, and other implements, ornaments, and ceremonials.

5. Collection of native copper implements and ornaments, including arrow- and spear-points, knives, axes, chisels, pikes, awls, needles, fishhooks, beads, crescents, etc.

6. Three additional cases illustrate mainly the implements, utensils, weapons, and ornaments of the aboriginal inhabitants of the Four Lakes region.

7. The collection of aboriginal earthenware is especially valuable and extensive, including particularly a fine collection of ancient and modern Pueblo and cliff-dweller ware, the gift of Hon. Robert L. McCormick, and a fine series of mound pottery from the St. Francis valley in Arkansas and Missouri.

8. The smoking customs of the Indian inhabitants of this section of the country are illustrated by means of an entire case of ancient and early historic pipes.

Models of a Wisconsin mound group, and of the principal types of effigy mounds for which this state is celebrated, complete the collections of archaeological materials.

The American ethnological collections are at the present time chiefly confined to a single large wall-case, and consist mainly of articles illustrative of the tribal life of the several well-known Wisconsin tribes—the Winnebago, Chippewa, Potawatomi, Menominee, Sauk, and Foxes. Several fine birchbark canoes swing from the ceiling above the row of center-table cases. There is also a good model of the Hopi pueblo of Teguá.

On the tops of the wall cases are shown a rare and very valuable collection of oil portraits of noted Wisconsin and other Indian chiefs; also paintings of Black Hawk War battlefields, etc.

In this hall are also several screen exhibits, which are changed from time to time. Those at present on exhibition illustrate by means of carefully selected series of photographs, prints, maps, etc., "The Features of Wisconsin Archæology;" "The Making of "Fire," and "Central California Archæology." All are accompanied by full and carefully prepared descriptive matter. These screens represent a new departure in museum display methods, and particularly appeal to the student and visitor, who often has not the time nor inclination to study large series of materials. They likewise enable the presentation, in an inviting form, of subjects not otherwise readily illustrated in a limited space. Some other advantages are also apparent.

A fine collection of Moro materials from Mindanao is also temporarily installed in this hall. In an adjoining hall is a valuable collection illustrative of the interesting period of the Wisconsin fur trade. Other ethnological materials are shown in some of the other halls of the State Historical Museum.

Valuable additions to all of these collections are constantly being made, and the exhibits themselves are from time to time rearranged to meet the growing needs of students and visitors. Reading tables are now being provided, and these supplied with helpful literature. The historical collections of the institution are very extensive and valuable.

The museum occupies the entire top (fourth) floor of the beautiful and capacious new building of the Wisconsin History, and is one of the greatest educational institutions in the Northwest. It is visited by from 75,000 to 100,000 people annually.

COMPUTATION OF TIME AMONG THE TOLTECS AND AZTECS.

THE division of time in cycles was known amongst many of the old nations. We know the Sexagenary Cycle of the Chinese, the Chaldean cycle containing about 6,585½ days, the Metonic Cycle of the Greeks, besides many others. Also the Toltecs had their time divided into cycles, which computation the Aztec astronomers accepted.

Each cycle consisted of 52 years, being divided into four periods of 13 years each. Two cycles or 104 years were called Huehuetitiztli (the old one). The end of the cycle was named Tojjuhmolpia, "the union of our years."

The solar year counted 20 periods of 18 months or 360 days, and to make it complete 5 days were added to the end of the year, called the Nemontemi, "useless days."

Every period of 20 days was subdivided into four parts of 5 days each, the last day of which was kept for market day "Tianquiztli." The days of the month were arranged so that each subdivision of 5 days began and ended with the same name, as follows:

Acatl, tecpatl, calli, tochtli, acatl.
Tecpatl, calli, tochtli, acatl, tecpatl.
Calli, tochtli, acatl, tecpatl, calli.
Tochtli, acatl, tecpatl, calli, tochtli.

The above being a very primitive method for the division of a month, other names were added to it, so that the principal signs were not repeated and only stood at the beginning of each subdivision:

Acatl, ocelotl, cauhtli, cozcauhtli, ollin.
Tecpatl, quiahuitl, xochitl, cipactli, ehecatl.
Calli, cuetzpallin, cohuatl, miquitztli, mazatl.
Tochtli, atl, itzcuintli, ozomatli, malinalli.

The first year of the century was (hare) "tochtli."

The second year of the century was (reed) "acatl."

The third year of the century was (flint) "tecpatl."

The fourth year of the century was (house) "calli."

The fifth year of the century was (hare) "tochtli."

The sixth year of the century was (reed) "acatl."

And so on, till finished by 13th, "tochtli." In this way their cycle was formed by these four principal names, which signified the 4 cardinal points, the 4 elements, the 4 seasons, and the 4 stars: Acatl, the sun; Tecpatl, star; Calli, the moon; and Tochtli, earth.

Great preparations were made for the last night of each cycle, in which the thousands of spectators might be not only the spectators, but also the victims. Everything was awe-inspiring and weird in that night, which might be the last for the whole nation. The holy fire and all the lights in the Teocallis (temple) were extinguished, darkness reigned in the streets, for also the lights in the houses were blown out and the hearths remained cold and gloomy. Not a spark glimmered through the darkness, every palace and house seemed to be the abode for the dead, and the whole town was like an enormous burial place. Everything which had served in the old year or had given joy and happiness was destroyed. Also the Tepetitones, "their little housegods," and amulets in whose protecting power they had lost faith were attacked with mighty blows of the stone hammers, until they were reduced to pieces. Should a new year greet them, nothing of all they had was good enough for it, and if not nobody would remain to make use of the treasures, or dress the dead in their rich garments and light the pyre for them. The whole family united, friend went to friend to say a last word of cheer or to ask forgiveness, and all prepared for death, for who could assure them that they would see the light of another day?

Great ceremonies, all of imposing solemnity, accompanied the end of each cycle, and many festivities were arranged to greet the beginning of a new one. While during the first reigned the silence of death, the latter was celebrated with all the noise and merriment of happy youth.

The Toltecs and Aztecs believed that the world was doomed to disappear by a terrible cataclysm, but their soothsayers could not tell in which of the cycles this general destruction would occur, so each cycle might be designated by the gods to be the fatal last one, which by its expiration might bring also the dreaded storms and earthquakes which would destroy the whole world and all that lived on it.

When Quetzalcoatl, the evening star, was no longer visible in the sky, the priests in one long line left the teocalli. They wore the garments of their gods and their emblems. Their hair wafted in the soft breeze, partially hiding their my features. One of them carried the "Mama-wo" pieces of wood by whose friction the new fire

In the midst of the priests walked the victim, the peace offering to their gods for this grand night, the richest and most valiant soldier, whom they had made prisoner for this purpose. Accompanied by an immense multitude, the procession passed slowly through the lonely streets, which lay deserted in the shadow of the night,*till at last they reached their goal, a mountain near Huixachtla not far from Ixtalapan, and only two leagues from Tenochtitlan. The hour for their departure from the Teocalli had been carefully calculated, so that the solemn procession only arrived a few moments before midnight at Huexachtla.

Arriving there, the priests ascended in dire silence the top of the mountain, where the pyre for the victim was already erected. Endless seemed the minutes in those hours of waiting—all hearts were filled with terror and dismal apprehensions, for the long-feared cataclysm might bring death and destruction to all. Those of the inhabitants who had to remain in town listened with palpitating hearts, straining their eyes to be the first to hear the loud exclamations of happiness which would pierce the stillness of night, announcing that the gods had been merciful and that the life-bringing fire had greeted their eyes again and the continuance of the world for another 52 years was assured.

The poor women who expected to become mothers were locked in granaries for fear evil spirits might take possession of them, changing them into ferocious beasts who would devour their husbands. The little children were kept in constant motion and their faces covered with the big leaves of Maguey, for if they fell asleep the evil spirits might change them into little mice or toads.

Deep silence reigned in the streets. It seemed as if the angel of death was soaring over the awe-stricken town. Slowly passed the minutes till at last the dreaded last one of the expiring Cycle arrived. Nobody dared to breathe, and nothing was heard in the ghostly silence, but the loud palpitations of thousands of trembling hearts. The great Teopixque (high priest), feeling himself no longer the holy representative of the gods, looking down with despite on the cowering mortals, now perhaps for the first time felt himself the brother of all these trembling creatures. The proud warrior laid aside Chimalli and Macana, threw himself on the ground, and felt no longer the pride of his caste. Women and children crowded tremblingly together, seeking consolation in being near to each other if the fatal blow should strike.

As soon as the moment had come which assured the continuance of the world for another 52 years, the unfortunate prisoner was sacrificed, and his body burnt on a pyre erected on the highest

top of the mountain near Huexachtla, so that the fire could be seen in the far distance.

The Teopixque took the Mamahuaztli, struck them in the prisoner's breast in the opening from where his heart had been torn. By friction of the Mamahuaztli the new fire was lit and soon spread out all over the pyre. At the moment the first spark was seen, the deep silence was pierced by loud screams of joy and a tumultuous scene followed. Everybody tried to light his torch at the holy fire, then hastening home to see again the newly regained fire burning on his hearth. With glaring torches the priests took up the homeward march.

On the 20th of February ended the 18 months of the year, and on the 21st began the five days "Nemontemi." In those days no festival was celebrated, and no business or lawsuit was begun, for they were believed to be the mischief-brooding days of the year. The boy born in those days was called Nemoquichtli (the good-for-nothing boy), and the girl Nemihuatl (the good-for-nothing girl). The first 13 days after the renovation of the fire were dedicated to the whitewashing and cleaning of the buildings. New dresses were prepared, and everything replaced which had been destroyed before, so that nothing old might be taken into the new year. Nobody was allowed to drink water before noon on this first day of the new Cycle, which was always the 20th of February. At the same hour the great sacrifice began, in which hundreds and sometimes even thousands of victims were slaughtered. Shouts of rejoicing re-echoed through the air and mutual felicitations for the new year sounded from mouth to mouth. Splendid illuminations lighted the nights, visitors went from house to house, balls took place, and all kinds of public games were arranged for poor and rich. One of the most liked amongst the latter was the game of the Voladores, the flyers.

After the 13 days ended the great festivities of the Cycle, and people were enjoying another 52 years of safety promised and assured by their gods.

Compiled from old Mexican histories and adapted to English by

ILAMATEUCTLI

THE MIGRATIONS OF THE LENAPE.

BY C. STANILAND WAKE.

IN his reconstruction of the ancient history of the Algonkin Lenape of the Delaware, as given in their migration legend referred to by the Walam Olum, or *Red Score*, the late Dr. D. G. Brinton states that "at some remote period their ancestors dwelt far to the northeast, on tidewater, probably at Labrador." In confirmation of this view, he refers to a legend common to the western Algonkin tribes, the Kickapoos, Sacs, Foxes, Ottawas, and Pottawatomies, according to which their original home was located north of the St. Lawrence River, near or below where Montreal* now stands, where they dwelt as one nation. This legend may have reference, however, to a later movement than that recorded in the Walam Olum. Dr. Brinton also speaks of a "vague migration myth" of the Shawnees, which will be referred to later on.

So far as I can judge, the location of the ancestors of the Lenape in Labrador is not consistent with the statements of the Walam Olum. The great migration there mentioned began, as stated by Dr. Brinton, on tidewater. The place from which it starts is described as being near "the great Tidal Sea, the mussel-bearing Sea." Of this northern land, which previously is called "Turtle Island," giving name to the Turtle men, "the best of the Lenape," it is said: "It freezes where they abode, it snows where they abode, it storms where they abode, it is cold where they abode." This description would answer well for Labrador, and yet it is said in the legend: "At this northern place they speak favorably of wild, cool (lands) with many deer and buffaloes," which does not indicate a locality so far east as Labrador; there being nothing to show that the buffalo roamed much further east in British America than Lake Winnipeg. Moreover, Turtle Land appears to be located expressly somewhere west of the "land of the spruce pines," from whence began the eastward migration toward Snake Island, in the verse which says:

*Curiously enough, an Iroquois legend also places their original habitat in the neighborhood of Montreal.

"They all come, they tarry at the land of the spruce pines,
Those from the west come with hesitation,
Esteeming highly their old home at the Turtle land."

It is evident that the spruce pine land cannot be the same as Turtle land, which lies to the westward and therefore could not be Labrador. This is confirmed by the statement in an earlier verse which, after referring to the disquieting of the cabin fires

of the Turtle country, expressly says that "to the Snake land to the east they went forth." Apparently driven forth either by an earthquake or a volcanic eruption (as their land is said to have been "burned"), they went forth in different directions. Some of the people, under Bald Eagle and White Wolf, remained along the sea, "rich in fish and mussels," but when Head Beaver and Big Bird said: "Let us go to Snake Island,"

" Those of the north agreed,
 Those of the east agreed;
 Over the water, the frozen sea,
 They went to enjoy it.
 On the wonderful slippery water,
 On the stone-hard water all went,
 On the great Tidal Sea, the mussel-bearing Sea."

In the Shawnee tradition above mentioned reference is made to their people crossing a wide water, which they were able to do by magical art. All "the best men, the rich men, the head men" come with wives, daughters and dogs, and tarry at the land of the spruce pines." From here the people spread south and east and then, according to the legend, the Snake land was at the south, the great Spruce Pine land was toward the shore, to the east was the Fish land, and the Buffalo land toward the lakes.

The movements recorded by the *Walam Olum* are thus distinctly toward the south and east, and we must suppose them, therefore, to have been from north and west. In this case, the great Tidal Water was probably the great inland sea known as Hudson Bay, which may then have extended further south and west than at present. From the Spruce Pine land, which would be north of the great lakes, the ancestors of the Lenape went eastward to fight the Snake people, *Akowini* or *Akonapi*, who are located by Dr. Brinton north of the Ohio River, in Western Ohio and Indiana: where many important mounds and earthworks are found, among them the remarkable serpent effigy in Adams County, Ohio. To the south were the Talligewi or Cherokee, whom the invaders encountered long afterward, and we may suppose, therefore, that by Snake people was meant the Dakotah, who once lived as far east as Ohio, rather than the Iroquois, who lived much further east. It is true, nevertheless, that the word Iroquois is said to be derived from an Algonkin word meaning "real adders," as distinguished from the Dakotah, whose name also signifies "adder," but is derived from a diminished form.

Long afterward the ancestors of the Lenape continued to live together, but finally they separated at Fish River, the "lazy ones" remaining there and the others going to invade the eastern land possessed by the Tolligewi, on the Upper Ohio and its tributaries. The Indian word translated "Fish River" is Nemassipi, and Dr. Brinton remarks on this that "in the present connection it seems to refer either to the St. Lawrence, about the Thousand Islands, or else its upper stream the Detroit River, both of which were famous fishing spots." The Nemassipi is identified, however, with the Mississippi by Heckewelder, who gives an account of a Delaware tradition of migration which evidently refers to the same great movement as that recorded by the Walam Olum. That tradition makes the Iroquoian Mengwe (Lynxes) allies of the Lenape in their attack on the Talligewi. This does not agree, however, with what is known to have been the location of the Iroquois, and probably, therefore, the identification of the Namassipi with the Mississippi is not correct.

According to the Walam Olum, the Lenape encountered the Mengwe long afterward much further east, and indeed not until after they had reached tidewater again. However this may be, the constant movement of the Lenape east by south is not reconcilable with their migration having commenced in Labrador. The original Turtle land whence they wandered, if not near Hudson Bay, may have been on tidal water much further to the northwest.

FABULOUS MONSTERS.

Fabulous monsters are found in Greek mythology. Ctesias describes the griffon as a quadruped in shape like a lion but having claws like a bird. Its head was blue, its beak like an eagle's, and its eyes sparkled like fire. It could easily vanquish all other creatures but the lion and elephant. The griffon was in fact the same as a bird, the Orroc of the Samoyede Sagas. Griffons were apparently connected with the worship of Apollo, to whose car they were attached. The fossil bones found in caverns were supposed to be those of monsters as late as 1672. It was believed there were living dragons, and that the bones found in caves of Europe were bones of dragons. It is supposed also that the tortoise of Hindu mythology, which bore up the earth, and the roc of the Arabs, which Marco Polo identified with the griffon, belonged to the same period. It is owing to the same impression that the stories arose of the Gigantes and Titans who fought with the gods and whom the gods overwhelmed. The belief in giants is not confined to ordinary human beings such as are described in Scriptures, for the teeth of elephants and

whales found in England and Ireland were believed to be the bones of giants. Cuvier was the first to show that the mammoth and early rhinoceros were not identical with the elephant of the tropics. He also showed that the mammoth and Indian elephant were different, although the mammoth remains from Siberia and Western Europe belonged to the same species.

THE SHAPE OF THE EARTH.

According to the ancients the earth was conceived as a rectangular box, the bottom of the box being concave, having the valley of the Nile as its center. The pillars of support were at the points of the compass. On the north were the mountains beyond the Mediterranean, on the south the source of the Nile, and on the east and west were mountains. Circling about the mountains was a great river, but separated from land by the mountains. On this river the sun-god made his rounds in a boat, fighting day after day with the demon of darkness. The valley of the Nile was supposed to be guarded by a divinity who represented the vault of the heavens. It was Nut, the goddess of night, who had been torn from the arms of her husband, the earth god, and elevated to the sky. She remained in this attitude supported by her four limbs, which were changed to mountains. This forcible elevation was effected in the day of creation by a new god who came forth from the primeval waters.

A variation is found among the tribes of the Pacific. The Babylonians believed the earth was a circular plane, but the sky was a vault resembling an inverted boat. Outside of this was a great circular river and beyond that the barrier of the mountains.

THE PEOPLING OF THE WORLD.

BY STEPHEN D. PEET.

THERE are several methods of treating the subject of the peopling of the world. One is by examining the traces of man which have been found in the gravel beds and caves. Another is by studying the various inscriptions which have been left by man on the rocks. A third is by taking the earliest and most ancient traditions which have been preserved. A fourth is by examining the various systems of mythology wherever found. A fifth is to study the alphabets and the style of writing common among the different races. A sixth is by the study of language, and comparing the construction of the written with the unwritten and tracing them to their earliest origin. A seventh is by studying the history of all nations and tribes and ascertaining earliest beginning.

In treating of them, we shall endeavor to show their bearing upon the Bible record, especially that found in the Book of Genesis. There are those who claim that science and revelation have never agreed and never will, while others hold that one confirms the other, for God is the source of both. Some hold that the origin of man was from the monkey, and in order to understand the earliest history of man we must go to the region where monkeys abound. Such claim that the first appearance of man was in a quite different region from that which is described in Genesis. In fact they maintain that instead of going to Asia we should visit the portions of Europe where the gravel beds have yielded the bones of an extinct species of "genus homo." It is well known that in the valley of the Samme, skeletons have been found in gravel beds, and these are supposed to have been the earliest specimens of man—specimens which were deposited many thousands of years before the history of man began. The examination of the caves as well as gravel beds has shown that a creature resembling man dwelt in Europe long before historic man appeared in the valley of the Euphrates or in any of the regions held by tradition as the starting point.

I. It is to be noticed that the presence of man in Europe was made known by the human bones found in the caves and by the perforated flat plates of cockle shell which were probably used as a necklace; also by flint knives and a few instruments of horn *on the outside of the caves*. But these creatures were certainly *very different from those known to history, and cannot be placed*

on the same level with the first pair who have been regarded as the parents of the human race.

In the year 1852 an ancient cave was accidentally discovered in the Pyrenees close to the town of Auriguac. This cave was closed by a large slab of sandstone. In it were found skeletons of at least seventeen human beings which had been deposited there. It was found that this cave was a primeval sepulchre of the stone age. There was an open terrace in front of the cave, in which funeral ceremonies had been observed, for upon it a layer of ashes and fragments of wood and charred coal made a deposit six inches thick. It was a sort of rough hearth, composed of several pieces of sandstone blackened by the action of fire. The most remarkable thing was that among the ashes and in the soil was a great quantity of bones of animals and many articles of human handiwork. A hundred of these were made of stone, chiefly of flint, among them knives, arrowheads, slingstones, flint flakes, a sort of hammer consisting of a rounded stone resembling the thumb and finger stones of America. Besides these were other articles made of the horns of the roe and reindeer, such as needles, arrowheads, awls, scraping knives, and the canine teeth of a cave bear. The bones of animals were very numerous, mostly of the species which belonged to the diluvial period—the mammoth and rhinoceros, and gigantic Irish deer, horse, reindeer and aurochs.

Huxley says of these: "The late discoveries and investigations as to the primeval existence of man upon the earth have proved that man, although the youngest member of the organic creation, was already upon the earth during a period with which the few thousand years covered by human history and tradition sink almost to a single moment." Buckner says there is only a single scientific discovery which is of the same importance, and that is the discovery that the earth moves and that the sun is stationary. When the "genus homo" comes into view, elephants of various species existed in considerable numbers except in Australia. The first accomplishment of man appeared in the extermination of the elephant. This was the case in America as well as in Europe. The bisons were nimble enough to escape, but as soon as stone implements were replaced by those of metal, and especially by the use of gunpowder, the animals were overcome and finally disappeared.

The history of man before the time of the great flood is very but it is to be taken into account when we are studying et of the peopling of the world. The mists of obscurity are over the nations which first dwelt in this region. It remains uncertain whether there were emigrants who of the earth and were not destroyed by

the flood, and yet the fact that nearly all the nations go back for the beginning of their history to the time when their first great ancestor and ruler escaped from the flood, is significant. This is the case, not only with the Babylonians and Assyrians, the Indo-Europeans, the Chinese, and North American Indians, but even with the inhabitants of some of the islands. The ancient history of the world contains hints as to the early presence of man in the distant regions.

The resemblances between the axes and stone relics found in England and France and all parts of Europe, as well as in India and various parts of America, show that there was what is called the paleolithic and the neolithic age before the historic, and the evidence is that the world began to be peopled during this age. The main question which arises is whether this was before the time of the flood which is recorded in the Book of Genesis, or after it.

As a matter of fact, the study of the gravel beds and caves belongs to a different department than the study of history. For this reason we shall study the peopling of the earth from a historic rather than a prehistoric standpoint.

II. The Bible record agrees closely with that preserved by history, for the locality from which all historic races began their migration is placed in the valley of the Tigris, and the time fixed upon agrees fairly well with that which comes from a careful study of the monuments. It is true that the mists of obscurity have gathered over the nations which first dwelt in this region, and yet recent discoverers have thrown so much light upon the records which have been left that investigators as well as Bible scholars are inclined to place more confidence in the records which archæologists and explorers have discovered in this region than in any of the theories which have been advanced as to the origin of man. It is certainly remarkable that tradition confirms the story which is given in the Book of Genesis to a startling degree.

We therefore pass from the doubtful and disputed points to consider the evidences which are presented by inscribed tablets. As to the date when writing was first introduced there is uncertainty. The same may be said of the locality and nation of origin. The hieroglyphs of Egypt have generally been considered the oldest specimens of writing, but discoveries in Babylon put it back much farther, and are bringing out records older than those of Egypt. The general impression has been that the hieroglyphs of Egypt arose from the pictographs which were placed upon the rocks and afterward written upon papyrus. It is now claimed by many of the latest scholars that the alphabet, which was used in Babylonia, and which

served through so many ages and changes, was in reality earlier in its origin than even the hieroglyphs found in Egypt. These wedge-shaped characters, which were placed upon the clay tablets, are to most people as obscure as the tracks upon the rocks: yet when the key to this strange alphabet was found the history of this region proved to be more ancient than that given by the hieroglyphs, and the information gained from it carries us back farther into the past. The history of writing began in the valley of the Tigris, and the records have been preserved in better condition than they could have been if papyrus had been used, or wood, or any other material.

There were three languages in the valley of the Tigris and Euphrates at the outset of history, which corresponded with the three sons of Noah. One of these and the most important was the Indo-European language. It was so-called because it spread from this common center toward the east and toward the west, and became the language of the race which introduced civilization into the continents of Europe as well as of Asia. It is probable that the cave dwellers had passed away before the people speaking this language had reached Europe on one side and India on the other. It would seem, however, that history of the two continents, Europe and Asia, began about the time this race had reached the confines of their territory.

It is probable that the history of the Semitic race began even before that of the Indo-European or Japhetic races, and long before the Hamitic. Some maintain that history began in Egypt as early as it did in Babylonia, and it was introduced, not by the Hamitic race, but by the Semitic. This is an important fact because it shows that the Semites were the source of civilization and confirms the Scripture record as to the early use of the Hebrew language.

The classic languages belong to the Japhetic stock, but they represented to the world a civilization which appeared first in Asia, next in Europe, and to a certain extent in northern Africa, but has since spread over both continents of America, and is beginning to prevail in the islands of the sea. The Hamitic languages are not so well known as either the Japhetic or Semitic, and yet the continent of Africa had at an early date many tribes and nations which spoke this language, some of whom reached a fair degree of civilization. Africa is called the dark continent, but vast treasures have been found hidden away among the mountains and in the southern borders, and the civilization of the world seems to be spreading over the nations and tribes which so long remained hidden within its borders.

It is acknowledged that history began earlier in the valley of the Tigris than anywhere else, and although language varies according to the nationality the art of writing began in this valley sooner than anywhere else, and the records which were preserved but have recently been discovered there were the earliest of all. The discoveries which have been made in the mounds of Babylonia show that civilization had reached a high state before the days of Abraham and thus confirm the Scriptures. The Semitic, the Indo-European and the Hamitic races have left records here which show that this was the starting point of all the races known to history, though the records of the Semitic are more ancient than others. The strange thing about this valley of the Euphrates is that it should contain so many records which belong to the Semitic races, and yet that it was the starting point for all the other races. It is not claimed that all of the alphabets were written or invented in this valley, nor all the languages which now exist began to be spoken in this region, and yet, so far as history has left any record, the evidence is that all the races had their starting point in this locality. This may seem a startling fact, and one hard to believe and yet the evidence is coming to be clearer every year and the progress of discovery is proving that the Bible record is correct.

A glance at the different races which are scattered over the globe will be suggestive and startling, for it shows that history began in this valley earlier than anywhere else in the world, and the races which are becoming known had their beginning here. We need not go to the languages which are now spoken to prove this, for languages change as fast or faster than complexion and physical traits. It is claimed by the naturalists that the different colors of plants are produced by the effect of the sun upon the juices of the plant, changing the color from white to green and to the different shades which may be recognized in the leaves and fruits. The roots are generally colorless, because they are not reached by the sunlight, but the leaves, stems, branches, blossoms and fruits receive their colors from the sunlight, which is the great painter. The effect is not confined to the plants or animals, for the different races of men are influenced by the sun, and the more direct and intense its rays, the deeper become the colors of the human face and form.

We speak of the Semitic, Japhetic and Hamitic races, and ascribe to them different traits which have been inherited, but the complexion of these three races varies according to the locality in which they have dwelt. The Hamitic races are dark, because they dwelt in Africa; the Semitic races are yellow because they dwelt in Asia; the Japhetic races are light because they dwelt

how the three continents of Europe, Asia and Africa came to be marked by different races as well as languages.

The testimony of the rocks has been interpreted by naturalists, especially by Hugh Miller, throwing much light upon the subject of creation. But the languages are not stratified, nor do they always follow one another in succession of time. They are like the branches of a tree which thousands of years ago struck its roots deep into the soil and spread its branches far and wide, whose blossoms and fruits can be recognized. There are evidences that the animals and plants followed in successive ages, for the fossils reveal this; but the languages are not deposited and cannot produce strata even if they are consecutive in time. Occasionally different tribes and nations will occupy the same continent and speak different languages, but after a time these barriers are broken away, and the tribes grow into one great nation. Such is the case with the continent of America, though the continents of Europe, Africa and Asia are occupied by nations which speak different languages.

III. The mythology prevailing among the various nations of the earth is another guide to the manner in which the earth has been peopled. In some cases it may have been the effect of the scenes of nature upon the minds of men, and yet there are myths among the distant nations of the earth which remind us of the story which is given us in the sacred word. There were myths among the nations of the east which seem to confirm the story of the confusion of tongues, and the dispersion of the race. We have only to go back to the lands of the East to realize this.

It is a singular circumstance that the same myths which prevailed in the classic lands of the East refer not only to the prevalence of a great flood but to an early migration from the same region. These myths are found among the Greeks and Romans, and form the chief feature of the classical mythology. We have not only the story of the Argonautic expedition, but we have also the story of extensive migrations. The Argo is represented as the first ship to be built, and the constellation which is seen in the sky is supposed to represent this very vessel, and possibly may be referred to as a remnant of the story of the flood and the preservation of Noah in the ark. The author of the Orphic Argonauts makes them pass up the Phasis and thence to the Baltic and so on to the British Sea and back by way of the Mediterranean to their home. It is plain that this expedition took place long after the building of the Tower of Babel, and yet the fact that the Argo was the first long ship, and that Minos had a fleet of long ships with which he held the sovereignty of the seas shows that the story of the flood and the preservation of the

family of Noah is not so strange after all. The building of the Tower involved architectural skill, but the fact that the confusion of tongues occurred in connection with it shows that the different nations of the earth already had begun to speak different languages.

The date of the Argonautic expedition was not so early as the dispersion of the race, although it occurred before the Trojan war. The first setting-out of the Argo was northward to Lemnos, but Herodotus says Jason sailed toward Delphos. Erestheneſ tells us that the constellation Argo was placed in the sky by divine wisdom, for the Argo was the first ship ever built and was an oracular vessel. The Argo, like the horse of Poseidon, was called Pegasus, for it was a mythical creature. The colonies of the "Arkites" who sailed in the Ark went abroad and made various settlements. Memphis in Egypt was believed to have been built by the Argives.

The peopling of the world was in part by way of the sea and in part by migrations over the land, but the migration would have resulted in different languages even if the incident of the Tower of Babel had not occurred. The effect of migrations on language has always been as great as if the change had been accomplished by a miracle. The confusion of tongues was remedied to a degree by the gift of tongues at the miracle of the Pentecost; but this miracle is going on in a gradual way in all lands even among the islands of the sea. Thus history repeats itself.

Language is often written as well as spoken, but in every case it becomes both a means of communication and a history. There are pictures in the Bible which are so easily interpreted that a child can understand them. "The path is so plain that a way-farer, though a fool, may walk therein."

We are told in the Book of Genesis that Noah had three sons. We learn from history that three great races appeared at an early date, each one of which took its name from that of the sons. The Indo-European or Japhetic race are the descendants of the youngest of these sons, Japheth. The Semitic race, which includes the ancient Babylonians, Assyrians, Hebrews, and even the Egyptians, descended from Shem, who was the oldest of the sons. The African races are supposed to be the descendants of Ham, though the origin and history and early wanderings of the race is buried in obscurity. The migrations of the tribes which descended from these three great ancestors have extended to the most remote regions of the earth, and yet the linguists and the ethnologists have been able to identify them by their languages even when found in the most remote parts of the world. The history of their wanderings is obscure, and yet the records are found in *so many places* and ways that the linguists and ethnologists are

becoming satisfied that they will soon get the clue which ultimately will reveal the routes which were followed.

It is not a deep forest through which we are wandering and in which we are likely to lose our way, but is a plain and open path with landmarks and milestones at frequent intervals. There is then no reason why any one should be lost in studying the subject. For the *a b c*'s are suggestive of a primitive civilization, and at the same time show the spot from which the different nations separated and made their way to the remote parts of the earth.

IV. The alphabet has given us a record which is more reliable than the pictographs, but the pictographs suggest the manner in which thought was conveyed by rude and uncivilized tribes. The North American Indian will hew a place in the side of a tree and paint a picture in the place laid bare, and by the picture will indicate the point to which he is going. The use of pictographs was even more extensive than this; for the sides of the tents were often covered with figures which showed the clan and tribe to which the inmates belonged and sometimes tell the history of the people. Pictographs have always a tendency to attract attention, and have about the same effect as the Bible stories, for they are easily interpreted and always understood.

The alphabet was originally a pictograph or a series of them. By studying the alphabet we learn what was the primitive condition of mankind, and even the place from which the early migrations began. It was the place in which the camel and the ox abounded. The first letter in the alphabet "aleph," represents the head of an ox in Hebrew; alpha means ox. The letter *b*, or "beth" in Hebrew means house. The letter *g* or gimel in Hebrew means camel. So we may go through the Hebrew alphabet, and learn the primitive condition from the race from it even better than we can from any tradition that has come down to us or even from history, and shall find confirmations of the Bible stories which are certainly surprising.

The Phœnician alphabet was borrowed from the Egyptians, and the Persians adopted it and transmitted it to the Greeks. Instead of using symbols to represent sounds, nations have been content to adopt letters, which can be recognized by sight. The alphabet in reality gives to us a vehicle of transmission which is recognized by the eye instead of by the ear. The orthographic image has a definite shape which the voice alone could not convey. To the child the voice is the earliest means of receiving and communicating thought, but later in life the eye becomes the chief means of transmission, especially among the civilized na-

1200. The civilized races have always had signs by which they could communicate their thoughts to one another.

Among civilized races the unit of language is the sentence and among the uncivilized it may be the word. In the former case the spoken language is engaged in the end of the process, the stock of ideas which arise in the human mind. The consequence is that ideas are constantly colored by the conditions of the territories, so that languages had often a different origin rather than a means of communication. The progress of civilization is shown by gradually overcoming the language barrier.

It is also true that the patriarchs Shem, Ham and Japheth were able to communicate their thoughts by speech and did not use any other means. Their language has been transmitted through different channels, by way of the patriarchs of Abraham and the writing of the Hebrews. There was an interval of four or five centuries between the time when the patriarchs had a genuine historic stamp. The languages of the Semites in Mesopotamia and Syria and even in Babylonia were written in cuneiform characters, the mode which was taken at the present time to identify the starting point of the language.

It is also true that some of the distant nations of the earth have no written history, and only know that their fathers have been in such and such a place, which reminds them of their earliest history.

The Indians of the Americas and nations have a tradition that their fathers came from the north and afterward came out and lived in the mountains where they live at the present time; that their fathers were taken care of by their chiefs or priests and that they were taken care of by their chiefs or priests, even at the present time. These ceremonies, even at the present time, are a part of their history. These ceremonies are a part of their history and have been interpreted by the Indians. The student of the record concerning the Indians has a book which makes known the history of the Indians.

The Indians of the Americas, travelling so far away from their homes, should have kept a record of their history, many thousands of years ago, and should have left a record to the locality where they lived. The American continent.

The Indians of the Americas, which the nations remember their history, including the Pueblo tribes and the so-called Dwellers. They have a tradition that their home was a dark cave, but under the lead of a fabulous creature they went through the roof of the cave into another

cave which was lighter than the one they had left. A second time they were led through the roof, and came into a cave where the sun and moon could be seen, and which was much brighter than the one from which they came. A third and a fourth time they were led through the roof. But in the fourth cave they gained glimpses of a beautiful valley in which were streams of water. The valley was surrounded by four mountains, one on each side. At the top of every mountain was a tree which spread out its branches in every direction. At the bottom of each mountain was a beautiful spring from which flowed a stream which crossed the valley and joined the waters, and formed a lake in the center of the valley.

The strange part of this story is that a flood was sent out from the cave from which they came by a great, fabulous monster which was an enemy to the people who had escaped from the darkness and were dwelling in the valley and near the borders of the lake. This monster had the form of a serpent which in some way was connected with the distant ocean, and through its body the waters of a great flood came rushing in to fill the valley and to overwhelm the people who dwelt there. It was only by the power of the Great Spirit who ruled over sea and land, sky and earth that they were saved from the flood. It was by a sacrifice, however, that the enemy was overcome and they were rescued from the flood. The sacrifice consisted of two youths who were let down from the top of a cliff. The great monster was satisfied with this sacrifice, and withdrew from the valley into the distant ocean. The most striking part of the story is that the youths which were offered in sacrifice were transformed into two rocky peaks, which resembled the human form and still remained standing near the great cliff to which the people escaped and on which they built their many-storied houses in which the people have dwelt for generations. This is a fanciful and poetical view of an event which reminds us both of the book of Genesis and the Book of Revelations. The latter furnishes the analogous story of a monster heaving out a great flood to destroy the Lord's people, while the former emphasizes the necessity of sacrifice in instances too numerous to repeat.

Alphabets show significant distinctions and combinations. Alphabets were invented by different races and nations, and systems of written as well as spoken language are the chief indices by which nations have become known. This fact makes it easy to trace the historic nations back to their first home, even when changes in complexion and physical characteristics by climate and environment have obscured the source.

The differences and resemblances in the languages enable the

linguists to trace the lines of separation. Thus have been identified the lines of migration followed by the Chinese. The Chinese look back to Fohi as their great ancestor and ruler, and they make him to represent the Noah of their great nation. The Chinese language is supposed to have sprung from the ancient Accadians who formerly dwelt in the valley of the Euphrates, and their alphabet as well as their mythology and history confirms the same conclusion.

Prof. Williams in his "Middle Kingdom" describes the Chinese script as well as Chinese occultism. Writing or script has six styles—the seal, the official, normal, cursive, fancy, and the sung. The Chinese writing requires eight different kinds of dashes. Dr. Paul Carus has written a book in which he reproduces much that Williams has written, and has shown the correspondence between the writing and the elements. The elements seem to have a relationship similar to that of the family or human kind. They are: parent, child, enemy, friend, planet. Under these separate heads are embraced such elements as metal, wood, water, earth, fire, and such planets as Mercury, Mars, Jupiter, Venus, Saturn. The five elements figure prominently in the "Great Plan," and they seem to have been embodied in the topography and geography, for "the pointed crags mean fire," "the mountains mean metal," "rocks and trees mean wood," "plateaus mean earth," "lakes mean water." Water destroys fire, fire produces earth and conquers metal, metal conquers wood, wood, wood conquers earth, earth conquers water. The mystic tablet, which was supposed to have been revealed to Fohi on the back of a tortoise, represents the world which was created by Pan-ku when he chiseled the world out of the rocks. The Chinese recognize the seasons, the equinoxes, the solstices, the elements, rain, dew, snow, water, and grain; also twenty-eight constellations, though they differ from those which are common. They show a combination of animals and birds and mechanical contrivances as well as plants, and are entirely different from the constellations known to the Indo-European nations. Among the latter the signs of the zodiac are associated with different parts of the body—Aries with the head, Twins with the arms, Crab with the breast, Leo with the loins, Goat with the knees, etc. The Chinese assign animals to the human body but differently arranged, for the horse is assigned to the head, the cock to the shoulder, the hare to the arm, the goat to the breast, the snake to the hand, the dog to the legs, the tiger to the feet, the dragon to the knees, etc.

These differences show that the symbolism, constellations, alphabets and mythology were all introduced among the Chinese

after they had made their abode in China, and long after the time of Fohi their first ancestor, who represented Noah, the great navigator. Still the history and symbolism as well as mythology of the Chinese shows that they originally came from the valley of the Tigris and were an agricultural and industrial people rather than seafarers or fishermen. The Accadians are supposed by some to have been the descendants of Ham, and by others descendants of Japheth, and yet the Indo-Europeans who were known to be descendants of Japheth did not reach China until long after the Chinese empire had been established and the Chinese language and alphabet had become known.

V. Under these circumstances it may be well to turn from the history of writing to the beginning of the alphabet. It will be acknowledged that the alphabet changes, but leaves permanent marks betraying its origin. This is not saying that all alphabets were derived from the same source, but it does show that the alphabet used by most civilized nations was one by which history is known and can be traced back to an early period. It will be acknowledged that the Phœnician alphabet was the one which the majority of civilized nations have used.

The migration of the Indo-Europeans from Babylonia to the shores of the Pacific and from there to the interior of China at so late a date that they did not affect the Chinese alphabet nor even the Chinese religion, and yet the architecture of China was largely the product of the Indo-Europeans. The same is true of the Hamitic stock for the separation of tribes and races in Africa was so early that it is impossible to trace the African language to a common stock or to give a definite history of any of them. The widespread naturalism of mythology seems to have covered the early traditions, and it is difficult to trace either their myths or their languages to an original source. Paganism seems to have settled down upon the African continent so long ago it is hard to find any Bible story or to trace any of the three great languages.

The patriarchy which is described in the Book of Genesis was transformed into the system of ancestor worship. The confusion of tribal history is so great that it is a question which was the earliest among these people. The same may be said of the North American Indians, for most of the ethnologists have asserted that matriarchy prevailed among all the American tribes, and the system gave way to patriarchy in only a few cases. Another difficulty in the way of recognition of the origin of the American races is found in the languages that prevailed, for every American tribe claims that its birthplace and first home was in the very locality where the tribe was found at the time

of the discovery. The tribes of the northwest coast claim that they originally sprang from either the birds or animals which dwelt in the forest or from those which inhabited the sea. Their first ancestor has a name and a history which identifies him with some fabulous monster.

Similar fabulous origin has been ascribed to the earliest inhabitants of the historic lands. Berosus in the Chaldean myth represents the beginning of the world as consisting of darkness and water and ruled by a woman, though Bel, the great divinity, divided the darkness and cut the woman into two halves, from which he formed the heaven and the earth. He then cut off his own head, and from the drops of blood gave life to man. By the union of spirit with slime the "all" of creation was formed from which the universe was developed. The heaven was made in the form of an egg from which the sun and moon and stars and constellations sprang.

The constellation Leo affords a good illustration of the fact that the main features of classical and modern astronomical nomenclature have descended unchanged from the Sumero-Accadian period.

Wilkinson says: "There has always been a striking resemblance between the Egyptians and Asiatics as to manners, customs and religion, and some authors have considered that the valley they inhabited belonged to Asia rather than to Africa. They bear the evident stamp of an Asiatic origin. Pliny affirms that the people of the banks of the Nile were not Ethiopians but Arabs."

We cannot lay claim to the priority of the Hebrew language over all others from its perfection, as it has been spoken by the most ancient and most widely distributed nations. But we may certainly claim that the Hebrew Bible were the most important books of the east. It is confined to

Three great races—the Semitic, the Japhetic, and the Hamitic, have transmitted to their posterity languages which differ from one another, yet as time goes on they become blended and changed, so that the nations of the earth hear others speak in words which are familiar. The Indo-European races have spread over all the earth, transmitting as the chief inheritance to the world the record contained in the Sacred Word, with its narrative of creation and the beginning of human life.

We read the thoughts which our earliest ancestors had when they looked up to the sky and believed that God was their Father and they were His children. The Semites, the Japhethites and the Hamites have been long separated from one another, but in the Providence of God they have been brought together in the continent of America, where the belief in the quality of man in God's sight is the source of encouragement to the lonely and oppressed as well as of inspiration to those who are more favored. The Semitic, Japhetic and Hamitic races all have had their history—a history written in different languages and recorded on different continents, but which are beginning anew in the continent of America.

The archaic civilization which began in the Euphrates valley is continued in the distant parts of the earth. Traces of it are seen in the sky as well as upon the earth. Some think that mankind never had a common birthplace or a common home; that the diversity of races is due to the laws of descent, which began with animals rather than with human beings, but the records refute this. The languages have varied, the physical traits also have been as different as the habits of the people, and yet the evidence increases that there was in that valley what may be described as the birthplace of the human race.

The sky confirms this for the recognition of the constellations give the stamp of finality to the Euphrates valley theory. The Greeks received the names of the constellations and transmitted the stories connected with them. They are stories not of savages but of highly civilized people. The Phœnicians, who in turn had obtained them from the civilization of the valley of the Euphrates, incorporated them into the alphabet, so that the person who is familiar with the Hebrew alphabet can understand what the stage of civilization was and learn about the articles and objects as well as animals which were common at that early date. For an understanding of the Euphratean astronomy we have the valuable labors of Prof. Sayce, of Offord, of Hommel, of Jansen, of Epping, and others. The cuneiform inscriptions of *western Asia* published by the British Museum have been translated by C. W. King and others. Lockyer in "The Dawn of

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We cannot lay claim to the priority of the Hebrew language over all others from its perfection, nor even from its having been spoken by the most ancient or the most widespread people. But we may certainly claim that the thoughts expressed in the Hebrew Bible were the most elevated and advanced, and are in great contrast to those contained in what is called the pagan books of the east. It will be acknowledged that the Hebrew has been confined to a narrow and restricted territory, but the thought contained in the Bible has spread throughout the globe.

It is, however, the Indo-European language, now spreading to distant parts of the earth, which seems to be breaking the barriers down between the nations. The physical barriers remain, but civilization is surmounting them. The vessels which traverse the seas are like white-winged birds which sing the songs they once sang near the banks of the Euphrates and Tigris, and which shall be echoed in the most distant islands of the sea as well as the continents beyond the seas.

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ORIENTAL DEPARTMENT.

EDITED BY DR. CHAS. H. S. DAVIS.

THE ORIGIN OF THE BANTU.—The government of the Cape of Good Hope supplied the means that enabled Mr. J. F. Van Oordt to give three years of close study to the Bantu question, and has also published his results under the above title in a pamphlet of 97 pages. The author calls his paper merely a preliminary study, but he believes he has found clues that will help to unravel the secrets of Bantu philology and of the institutions, customs, and religious ideas of that widespread race. Briefly, his philological studies have convinced him that the Bantu languages belong to the linguistic group generally known as the Ugro-Altaiic; and he thinks he has discovered that the original home of the Bantu was the peninsula of Malacca, and that the present pagan races of that region are ethnographically and linguistically related to the existing races of Africa. The larger part of the paper is given to his comparative philological evidence. He expects to make further researches along the lines he has opened.

A recent issue of the official *Jahreshefte* contains a report of research in Ephesus by Austrian scholars under the leadership of Prof. Rudolph Heberdey. He is assisted by the archæologists, W. Wilberg and J. Klein, and the geologist, A. Grund. These excavations, east of the ruins of the library, have laid bare an eight-cornered building, erected between 54 and 59 A. D., and ornamented with beautiful relief plates. Next to this is a long hall, one end of which connects with the theater. This hall, it appears from the inscriptions, was used down to the Byzantine period. Remnants of the old and beautiful Hellenistic rotunda belonging to the time of King Lysimachus, have been exposed by removal of a superstructure dating from the period of the Roman empire. Adjoining the remains of St. Mary's church, the largest Christian structure unearthed in Ephesus, is found a smaller church planned in the same style.

Particulars as to the recent discovery of some new authentic manuscripts of the Bible are given in the Paris *Debats* by M. Gaston Migeon, who was fortunate enough last year to discover *in company with Mr. Charles Freer of Detroit, Michigan, among*

the odds and ends amassed by the Ghizeh merchants, certain manuscripts unearthed among the ruins of Akhmin, in Upper Egypt, After prolonged examination by Biblical scholars in America, it seems to be admitted, according to M. Migeon, that these manuscripts are of the fourth, fifth, and sixth centuries. The first one contains Deuteronomy and Joshua; the second contains the Psalms and is apparently more complete than the Vatican manuscript. The third contains the four Gospels, and the fourth the Acts and the Epistles. Mr. Freer's manuscripts are somewhat larger than the famous Alexandrine texts in the British Museum, but the importance of this discovery consists in the fact that a collation of the Freer manuscripts with those of the British Museum shows that many words, and even passages, wanting in the latter, are still preserved in the new texts. We may, therefore, according to M. Migeon, be on the eve of a fresh revision of the Bible.

We regret to announce the death of Prof. Gustav Oppert, of Berlin, who has recently passed away at the age of seventy-one. His first work of importance was done in the Bodleian Library, where he catalogued the collection of Hebrew manuscripts. He was then appointed sub-librarian at Windsor Castle, and in 1872 was made professor of Sanskrit at Madras. He returned to Europe in 1894, and the next year was appointed professor of the non-Aryan languages of India in the Berlin University. He has to his credit many works on the weapons, commerce, religion, and dialects of India.

Archæological work is being carried on in the island of the Nile known as Elephantine. A number of objects, some of which are of considerable value, have been found. Among these may be mentioned two large steles of diorite, covered with inscriptions of Thotmes III. A curious kind of sanctuary decorated with miniature obelisks and covering a spot which was used for burying the bodies of sacred animals, was also found. These animals proved to be rams, carefully mummified and buried in sarcophagi of granite. The wrappings of the mummies are gilded and ornamented with painted scenes of a mythological character, and bear inscriptions. The ram was among the sacred animals of Egypt, and seems to have been specially consecrated to the deity Khnoum, one of the principal deities of the islands.

The temple in the Roman Forum, the excavation of which was begun in the presence of W. D. Howells, has proved to be

a most interesting and valuable find. Of the temple there are only so far to be seen the foundations which are buried under the Arch of Titus—better known as the " Arch with Seven Branched Candlesticks "—and composed of large blocks of " lapis tiburtini," or Tibur stones, which by their size and shape confirm Commendatore Boni's opinion that he has discovered the remains of a temple erected in honor of Jupiter " Optimus Maximus " nearly four centuries before the Arch of Titus was raised. It now seems certain that this arch has not always stood on its present site, but was transported thither by the engineers of Hadrian when that emperor decided to build a new imperial Forum.

The foundations of the temple go twelve feet deep, and among them have been unearthed terra cotta lamps, amphorae of iridescent glass, and the bones of animals used in sacrifice. There have also been uncovered at various depths the remains of paved streets and other civic constructions which reveal the number of times the history of the spot has been changed through the centuries.

Word has been received from Rome that the government, after considering the international proposal to excavate Herculaneum by a system of galleries, believes that the excavation should be conducted along the practically the same lines as those at Pompeii.

The Duke of Loubat has discovered in the Greek archipelago a sort of Oriental Pompeii of great riches and extraordinary interest. These researches were originally begun by the branch school at Athens in 1874, and by 1886 over twenty buildings had been brought to the light of day. Many important inscriptions were found—dedications, lists of household goods, tradesmen's bills—dating back as far as the seventh century before Christ. In the ancient temple many valuable articles have been found and—what is more curious still—records written on stone proving that the temple was virtually a pawnshop, where money was lent at 10 per cent on all articles of fixed value. This interest was not usurious, but it should be added that at the end of five years unredeemed pledges became the property of the temple. Under the direction of the Homole the researches have been continued and the theater, the necropolis, the port of the buried city, have been completely reconstructed. The Duke de Loubat has not only given his money for this purpose, but has also given his personal supervision.

Professor D. G. Lyon, curator of the Harvard Semitic Museum, was given leave of absence from April 25 through part of the next academic year, to supervise excavations at Samaria. The site is one of the largest and one of the most important in Palestine. On the surface are the remains of buildings erected by the Israelites in the fifth century B. C. Beneath these there may be remains of Hebrew palaces and of the homes of the people; still lower, perhaps, relics of Canaanite occupation. Tombs hewn in the rock are also sure to be found. The village in its name *Sebaste* perpetuates the Greek name *Sebaste*, which was given by Herod. The only mosque in the village was formerly a church of the Crusaders.

The excavations at Oxyrhynchus are now at an end, though the publication of the vast store of Greek papyri from the site will be the work of many years to come. The Græco-Roman Branch lacks funds to continue excavations, and therefore has suspended spade work for the present season, but hopes to resume in fresh fields in the winter of 1908-09.

Vol. V of the *Oxyrhynchus Papyri*, recently issued by the Egypt Exploration Fund, contains only five documents, comprising extensive fragments of two previously unknown works of classical Greek literature, and two familiar compositions, but of much earlier date than was hitherto known. There is also an uncanonical gospel of forty-five lines, detailing an interview in the Court of the Veil at the Temple at Jerusalem between the Savior and one of the chief priests, a Pharisee. Of the classical fragments, the first presents remains of the lost Pæans of Pindar; the second consists of some twenty-one columns of a history of Greece, composed on an elaborate scale. These fragments pertain to the years 346-5 B. C. The two papyri of works previously known are of the "Symposium" of Plato, and the "Panegyric" of Isocrates. It is the largest literary papyrus found at Oxyrhynchus.

"The History of Babylonia and Assyria," contributed by Professor J. A. Helms to Helmolt's "Weltgeschichte," has been translated into English by Professor J. A. Craig, of the University of Michigan. The translation is the original faithfully and yet in idiomatic and scholarly English. The translator has supplied a number of notes, some of which are in agreement with the author. For instance, when the author mentions the slaying of Goliath by David, the translator adds the footnote: "We may, perhaps, refer to

the fact in passing, that David's claim to this honor is very doubtful. II Samuel 21:19 makes Elhanan of Bethlehem the hero, in opposition to I Samuel 17. The author of I Chronicles 20:5, noting the contradiction, changed 'of Bethlehem' to 'Lahmi, the brother of,' in the interest of harmony."

Colonel C. R. Conder in a recent number of *Blackwood's Magazine* has an interesting article on the Hittite discoveries at Pterium. He says that the Hittite writing is very important, because it appears to have been the original script from which the Greek and Phœnician alphabets were developed. It is found in use all over Asia Minor, and also in Palestine, and even (on foreign pottery) in Egypt, as early as 2,000 B. C. It appears probable that, in the end, it will be proved that the very letters we now use owe their origin, neither to the Egyptians nor to the Babylonians, but to the sturdy race of Mongols who spread from the upper Euphrates to Syria and to the west; and their influence, not only in Greece, but very probably as Etruscans in Italy, renders the study of their history of general interest, as affecting our conception of the origin of both Greek and Roman civilization. There were many other influences—Babylonian, Egyptian, Phœnician, and Persian—but the oldest, and perhaps the strongest, was that of the civilized inhabitants of Asia Minor. This view steadily gains ground among scholars, and accounts for increased interest in the subject. They await with much expectation the results of the latest discoveries of written records at Pterium; and there can be no doubt that French, German and British explorers will continue more and more to direct their studies to the innumerable mounds of Syria and Cappadocia, which still hold in them secrets of the highest interest concerning the history of ancient civilization.

Dr. Edwin Mayser of Stuttgart will soon publish the second and final volume of his monumental "Grammatik der griechischen Papyri aus der Ptolemaergeit," which includes a discussion of the Ostraca finds and the Egyptian inscriptions of the same period. The first volume, of 538 pages, which appeared some months ago, deals with etymology and forms, and the new volume will deal chiefly with syntactical problems.

E. Amelineau begins the publication of his "Prolegomenes de la Religion Egyptienne" by a volume on the mythology of Egypt. The author is lecturer on the subject at the Ecole des Hautes Etudes, and will be remembered for his excavations at Abydos.

ond Cataract of the Nile a number of carved columns and a cornice sculptured with the emblem of the ancient Egyptian monarchy. Dr. Macivers believes these newly discovered pieces of architecture represent the finest works of their class in existence, and for beauty of design and execution, he says, they rival the work on some of the most famous of the Grecian temples.

Professor Herman V. Hilprecht has issued a volume of some 350 octavo pages, containing his answer to the charges made against him by other Assyriologists three years ago. These charges consisted at first in the statement that Prof. Hilprecht had published as objects found in the Nippur "Temple Library," objects which were not found in what he himself described as the "Temple Library," but had been purchased by members of an earlier expedition. There was also the charge that Prof. Hilprecht retained property belonging to the University of Pennsylvania. The trustees appointed a committee to investigate these charges, and Prof. Hilprecht's accusers were invited to appear before it. Two hundred and seventy-two pages are devoted to the record of this inquiry, and from this the reader may form his own conclusions. After this exhaustive trial the committee promptly acquitted him of the charge of literary dishonesty, as well as of the charge of misappropriating property belonging to the University. They also acquitted him of the charge that what was found at Nippur had no just claim to be called a Temple Library, although this is a matter which we think only expert Assyriologists can pass upon.

In Part II of this book Prof. Hilprecht pays his respects to two of his chief accusers. He says: "In all of this controversy thrust upon the public and me I have had but two real antagonists. Dr. John P. Peters and Dr. Morris Jastrow, Jr., have either originated or inspired everything that has been done, said or suggested. In the industrious promulgation of the charge that I have been dishonest as a scholar and scientist and even the vulgar purloiner of property belonging to others, Dr. Peters has avowed his motives to have been anxiety for the good name of American scholarship. And yet my mind persists in seeking the real cause of the doctor's animosity in those chapters of that fateful book of my authorship which deals with the management and results of the expeditions to the Far East of which he had charge. I would be a hypocrite did I avow anything but the strongest resentment of the course Dr. Peters has seen fit to take. Nevertheless, Dr. Peters, in all his enormous activity against me, has been open and above board. It has not been so with Dr. Jastrow. He has at times fed a hidden stream that has come to

by the leader of the school, Prof. G. Dalman, and published by E. S. Mittler & Sohn, Berlin. The principal article is the study of the Church of the Holy Sepulchre, by Prof. Dalman. He endeavored to show that the tradition which makes the church the site of Christ's burial and resurrection is correct—a position at variance with that generally entertained by modern scholars. Other papers treat of Jerusalem in the times of the crusaders, and the economic condition of the desert of Judæa.

The second year's work of the expedition organized through private liberality to carry on excavations in Egypt, on behalf of the Metropolitan Museum of Art, began on November 1st, following a plan which includes both a continuation of the excavations begun a year ago at the Pyramid of Lisht, and also work on sites of other periods which increases materially the scope of the expedition. In the clearing of the pyramid of Amenemhat I, at Lisht, a force of three hundred men, beginning at the north-east corner, carried the excavation westward along the northern face until the middle of February, when the greater part of the debris and drift sand had been removed. The number of workmen was then reduced to about one hundred, and the final work of clearing in detail has since gone on.

In order to take advantage of the favorable conditions which exist now in Egypt for the investigation of the remains of the later periods—Græco-Roman and Early Christian—the expedition is now extending its work to cover this field, through a valuable concession recently granted to it by the Egyptian government, at the Oasis of Kharga. There is every reason to believe that the systematic excavation of the cemeteries and sites embraced in this new concession must eventually yield results of the fullest scientific value and that the material resulting from the work will place the Egyptian collection of the Metropolitan Museum on a sound footing in its representation of this latest phase of Egyptian civilization and art.

The expedition has also begun this year the formation of a series of records of the inscriptions, wall paintings, and relief-sculptures of Egyptian tombs. Mr. N. de G. Davies, who for ten years past has been engaged in Egypt for the Archæological Survey, has undertaken this work and is now carrying out the full-sized reproduction, in color, of the tomb of Nakht, at Thebes.

Professor Richard Norton of Boston, a son of Charles Eliot Norton, and late Director of the American School of Classical

BOOK REVIEWS.

ANCIENT JERUSALEM. By *Selah Merrill*. New York: Fleming H. Revell Co.: 1908. Quarto, pp. 419; price \$6.00.

For many years Dr. Selah Merrill has been regarded as the foremost authority in matters of Jewish archæology and antiquities. For over thirty-five years he has been engaged in the study and exploration of ancient Palestine. During the sixteen years that he was the American consul at Jerusalem, and the work that he did in connection with the Palestine Exploration Society, he had exceptional opportunities to investigate thoroughly the topography of this ancient city. Readers of the annual reports of the Palestine Exploration Fund are aware of his many discoveries, not the least of which was that of one hundred and twenty feet of the second wall of Jerusalem, outside of which Christ was crucified; and many other discoveries which have been attributed to others should in all fairness have been credited to Dr. Merrill.

Of the vast amount of literature on Jerusalem and Palestine put forth every year but little is authoritative, and a good deal of it is untrue and often absurd, and many books are written in order to carry out some preconceived theory. It is evident, however, that Dr. Merrill, in pursuing his archæological and historical investigations, has not started with a theory and endeavored to make such facts as he may gather go to confirm that theory; in fact he strongly disapproves of the method of those who begin the investigation of important subjects with a decided partisan bias toward one theory or another.

In his archæological research Dr. Merrill begins with the siege of Jerusalem by the Roman army under Titus in A. D. 70, his point of departure, and from that date he worked backward as far as it seemed possible to go. Dr. Merrill considers that Josephus has given us a connected and in the main a correct account of the events which he records, and he considers that in a work of this character no progress whatever could be made without the writings of Josephus. Every portion of the city has been thoroughly investigated over and over again, and confirmed with Josephus, Nehemiah, and with all of importance that has been written on the subject, and he has shown, beyond successful controversy, where the besieging army of Titus approached the city, where the army encamped, the plan of Titu

for capturing the city, his methods of siege, the locations of the various city walls, where the first attack was made, the topographical division of the city into three portions, and the order in which these succumbed to the attack of the besieging army.

Among the forty-one chapters of the book are interesting ones on governor and procurator, royal burial places, the sites and building of the temple, and a very illuminating one on the rocks and quarries about Jerusalem.

While Dr. Merrill has great confidence in Josephus as a historian, he has not that confidence in Nehemiah. He says: "At the first glance we think that we have found an invaluable guide to the politics, religion, internal affairs, and topography of Jerusalem for the period which it covers, a very important period—namely: the middle of the fifth century before our era. After a careful study of it with all the helps that exist—and the helps are very few because commentators and other writers cannot tell us more than is known—we find that it is a work of curious construction, that it is not by one hand, that records of various other dates have been incorporated into it which prevent it from being a continuous narrative of actual events, that it exhibits a lack of sequence and of logical arrangement—a most prominent characteristic, to be sure, of the Jewish mind, but which, nevertheless, is exceedingly troublesome—and that, in general, it is not so clear and definite as we thought. Chapters III and XII have been declared to contain the most valuable materials for settling the topography of Jerusalem to be found in Scripture. But so far from elucidating Jerusalem's topography, they form a puzzle to solve which requires more than ordinary skill.

Dr. Merrill has gone over thoroughly Nehemiah's account, and has shown wherein he was often at fault, and that although the hints imparted by Nehemiah are invaluable, and show that certain things existed, their localities and relative positions may not readily be determined.

This comprehensive work of Dr. Merrill's will no doubt be recognized as authoritative, and it will not soon be superseded. The illustrations are important and interesting, consisting of over one hundred charts, maps and photographs, and are remarkable for their excellence of execution. D.

ODES AND ENES FROM PAGODA LAND. *By William C. Griggs.*
1907: American Baptist Pub. Society.

This book covers about the same ground as many others. It *gives information* which has been furnished by missionaries. It *is, however, well illustrated, and is new.*

BY VELDT AND KOPJE. *By W. C. Scully.* London: T. Fisher Unwin: 1907.

This book is full of descriptions of hillsides once covered with forests, of the crescent moon, the limpid African night, Wizard's Rock, and persons with romantic names and adventures. It consists of short stories, each complete in itself, but all of African life.

PASSING PROTESTANTISM AND COMING CATHOLICISM. *By Rev. Newman Smyth, D. D.* New York: Charles Scribner's Sons: 1908.

The author of this book says: "The distinction between home and foreign missions is rapidly disappearing. It is international Christianity with which everywhere the church has to do." It is a happy omen that in some ways the practice of church unity is becoming prevalent. Evidence of this is to be seen along the advancing missionary line. Modernists are learning an answer for us all. The dogmas of the church are successive developments of the reflective life. Christian life is the language of each age, but to find a common meeting ground is the demand of the age. This is the coming Catholicism.

HISTORY OF ANCIENT EGYPTIANS. *By J. H. Breasted, Ph. D.* New York: Charles Scribner's Sons: 1908.

Prof. Breasted is a very industrious man, and has furnished to the world an immense amount of information in reference to Egypt, its history, its civilization, monuments and inscriptions, which are still to be seen and studied. This book, which is the fifth of a series for Bible students, describes the early religion of the old kingdom, also the change which came in the middle kingdom, in the feudal age. The empire was at its height when Amenhotep, the son of Thothmes, was born. The Tel-el-Amarna tablets have preserved to us glimpses of the kingdoms of Asia, as well as of northern Africa. They were 300 in number, written in Babylonian cuneiform. They were discovered in 1888.

THE GOSPEL OF JOHN AND THE SYNOPTIC GOSPELS. *By Fritz Barth;*

NEW TESTAMENT PARALLELS IN BUDDHISTIC LITERATURE. *By Karl von Hase;*

THE MIRACLES OF JESUS. *By Karl Beth.*

New York: Eaton & Mains: 1907.

These small books begin with the parallels in Buddhistic Literature and New Testament Theology. Van den Bergh is surprised at the agreement of the New Testament narratives with Indian legends. The Buddhist influence upon the formation of the history of Jesus is given. The contrast between the two sys-

tems is not brought out by this book so thoroughly as it ought to be. The opportunity of drawing a contrast should have been used to better effect, for those who are familiar with Buddhism and Christianity know that there is a great difference. The one belongs to heathenism, which is a thing of the past; the other brings a revelation of the future. The "Miracles" and the "Gospels" show this clearly.

THE DATED EVENTS OF THE OLD TESTAMENT. *By Willis Judson Beecher, D. D.* Philadelphia: Sunday School Times Co.: 1907.

Prof. Beecher, who has written many valuable articles for this journal, has published the volume on chronology with tables. The materials are of four kinds—cardinal numbers, time-words, the order of events narrated, and their nature. The year of the Babylonians and Assyrians was the one used in the Bible. The relation of the events and feasts to the equinoxes is referred to. The flood of Noah as recorded in the Bible suggests the division into months. The theme is suggestive, but it is difficult to follow the line of reasoning through the tables, which number forty-nine, with explanations on alternate pages. The book must have required an immense time to prepare, and will undoubtedly be valuable for reference in the future.

CHINESE THOUGHT. *By Dr. Paul Carus.* Chicago: Open Court Publishing Co.: 1907.

The wonder which is awakened by reading this book is, how does Dr. Carus, the author, find time to edit two magazines and get together so much information in reference to Chinese thought and put it into so good a shape? The cuts scattered through the book are in themselves alone very suggestive, and yet one wants to know how the Chinese zodiac arose and why it should differ so much from those of other nations. The Chinese architecture is no more mysterious than the Chinese occultism. The nine personalities correspond to seven planets plus Rahu, a headless form, and Ketu, a trunkless head. The astrolabe is weird, but the Hindoo zodiac has some familiar figures. The zodiacs of the different nations are described, and this alone, if nothing else had been written, would give great value to the volume. The book carries us back to a very early period when the destinies of mankind were entrusted to one family and one race. But the lead of mankind has changed since the dawn of civilization. The Accadians and Sumerians dwelt together in Mesopotamia and gave us the cuneiform writing. They were neither Semites nor Aryans, and may have been Turanians. The Aryans took possession of Iran and Elam and acquired dominion over Mesopo-

tamia, but they spread over two continents and left the Semitics behind them. The Hamites were supposed to have been one of the races who undertook to build the Tower of Babel, but it is difficult to follow them in their migration, or to say how they reached Africa.

CODES OF HAMMURABI AND MOSES. *By W. W. Davies, Ph. D.*
Cincinnati: Jennings & Graham: 1908.

This little book carries us back to a period before Abraham left Ur of the Chaldees, and shows the state of civilization and the character of government at that time. The Hammurabi code was a bloody one, for beheading and death were the penalties for what seem to us trifling offenses. Stealing was a minor offense compared with taking away a slave, or taking property from the temple or palace. It was sovereignty with a vengeance which prevailed. The laws covered all departments of service, as well as of government, and they bring to light the prevailing condition of society.

THE NEXT STEP IN EVOLUTION. *By Isaac K. Funk, D. D., LL. D.*
London: Funk & Wagnalls: 1908.

This book contemplates a new creation. The spiritual type of life lifts the natural man, as the type life lifted the animal and the vegetable and the mineral. The law of continuity holds. It is not necessary to have heard with the outer ear the words of God or the name of Christ. God broods over every soul waiting for desire, and for invitation. Punishment comes, but it is largely within. The book is vague, but it will be understood by many.

ASSYRIAN AND BABYLONIAN CONTRACTS. *By J. H. Stevenson;*
MYCENAEAN TROY. *By H. C. Tolman and G. C. Scoggin;*

HERODOTUS AND THE EMPIRES OF THE EAST. *By H. C. Tolman*
and J. H. Stevenson.

American Book Company: 1907.

These books belong to the Vanderbilt Oriental Series, and are published by the American Book Company in uniform style. Taken in the order which accords with the date of the nations which are considered, they represent the progress of civilization and of history, from the earliest times up to the siege of Troy and the days of Herodotus. They cover about the same subjects as the works of Max Muller and Rawlinson and many other authors, but from a more recent date. The first volume brings together the cuneiform texts with the Aramaic readings, and reference is made to Prof. Robert F. Harper of Chicago, Rev. C. H. W. Johns, of Cambridge, England. It consists merely of translations and descriptions of tablets. The second one gives a description of Mycenaean Troy and contains a number of plates and cuts

which show the stage of architecture and of art which were described by Dorpfeld's Excavations. The third, Herodotus, treats of the empires of western Asia, of the customs, religion and language, as described by Herodotus. They are all full of instruction, and very brief, so that the person whose time is limited can secure information about a period which is becoming better known, but is after all quite obscure. The publishers have really conferred a favor by putting them in such a shape that they can be read by Bible and classical students without the expense of securing larger and more formal reports.

CHRIST AND BUDDHA. By *J. N. Cushing, D. D., Ph. D.* Philadelphia: American Baptist Publication Society: 1907.

This little book brings out the contrast between Christianity and Buddhism better than the one by Karl von Hase, mentioned elsewhere. The author for thirty years was in constant contact with Buddhism. He describes the birthplace, the youth, the early life, and the surroundings of Gotama or Buddha. His birth was 542 B. C. He was surrounded by wealth. The great renunciation was one of the three great events of his life. The ethical teachings are lofty and noble. His moral conduct was correct, but the system of Buddha is practically atheistic. The little book is candid, but the stage of sanctification and the "Eight-fold Path" are described. Better than sovereignty over the earth, better than lordship over all worlds is the reward of the first step in holiness. But what is the reward? Complete emancipation in which the mind, purified and exalted, is within any emotion of pain or pleasure. Having no longer any bond attaching him to Karma, at death the will experience no rebirth. Such is Buddhism. Its contrast with Christianity is enough to reject the one and choose the other.

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The author holds that there was a contact between the Southern Mound-Builders and the so-called civilized races of the Southwest, and that trade was carried on with all parts of the continent, but he thinks there was a decided difference between the hunter tribes and those which constructed the great earthworks which are scattered along the Ohio River and in the Gulf States.

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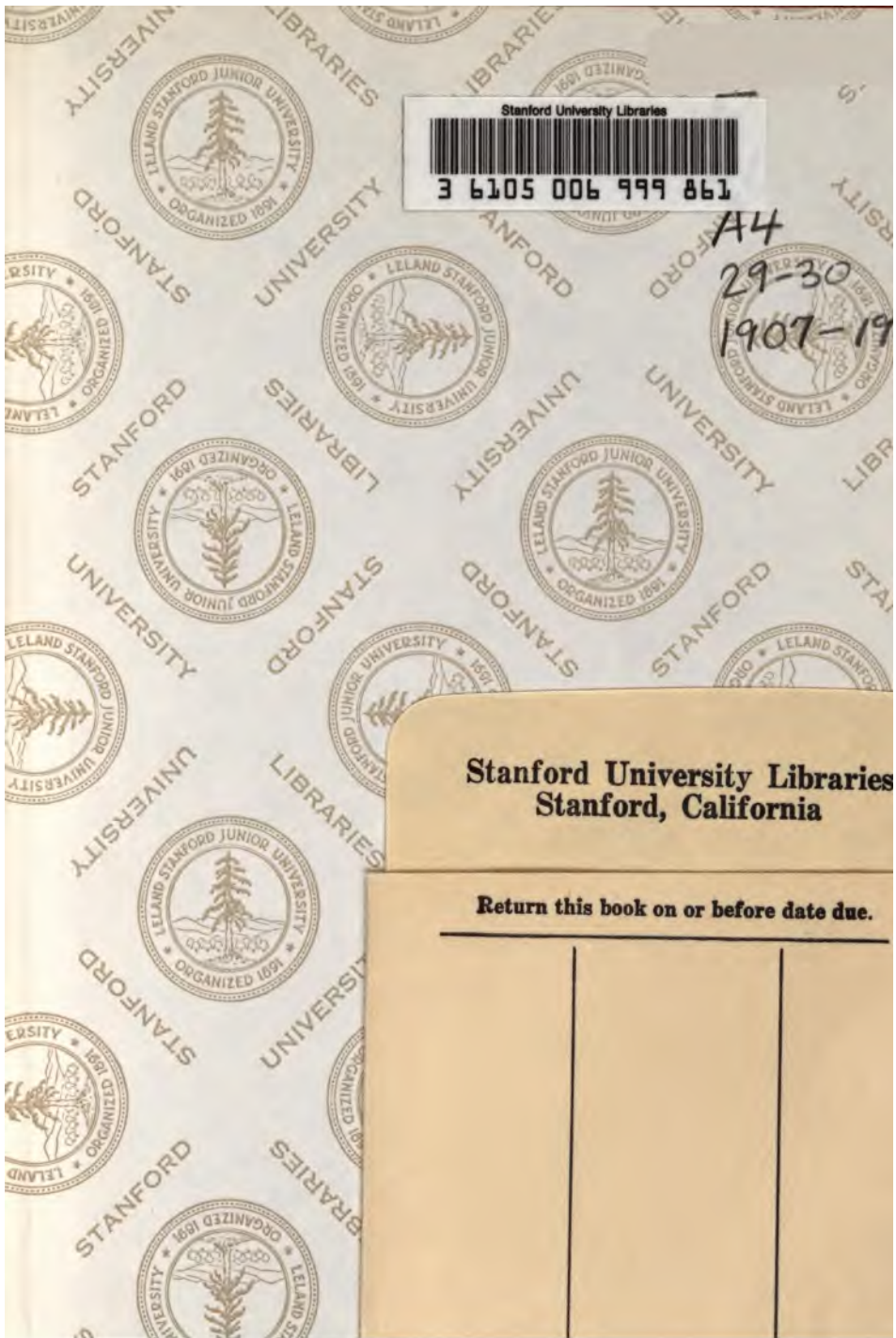
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