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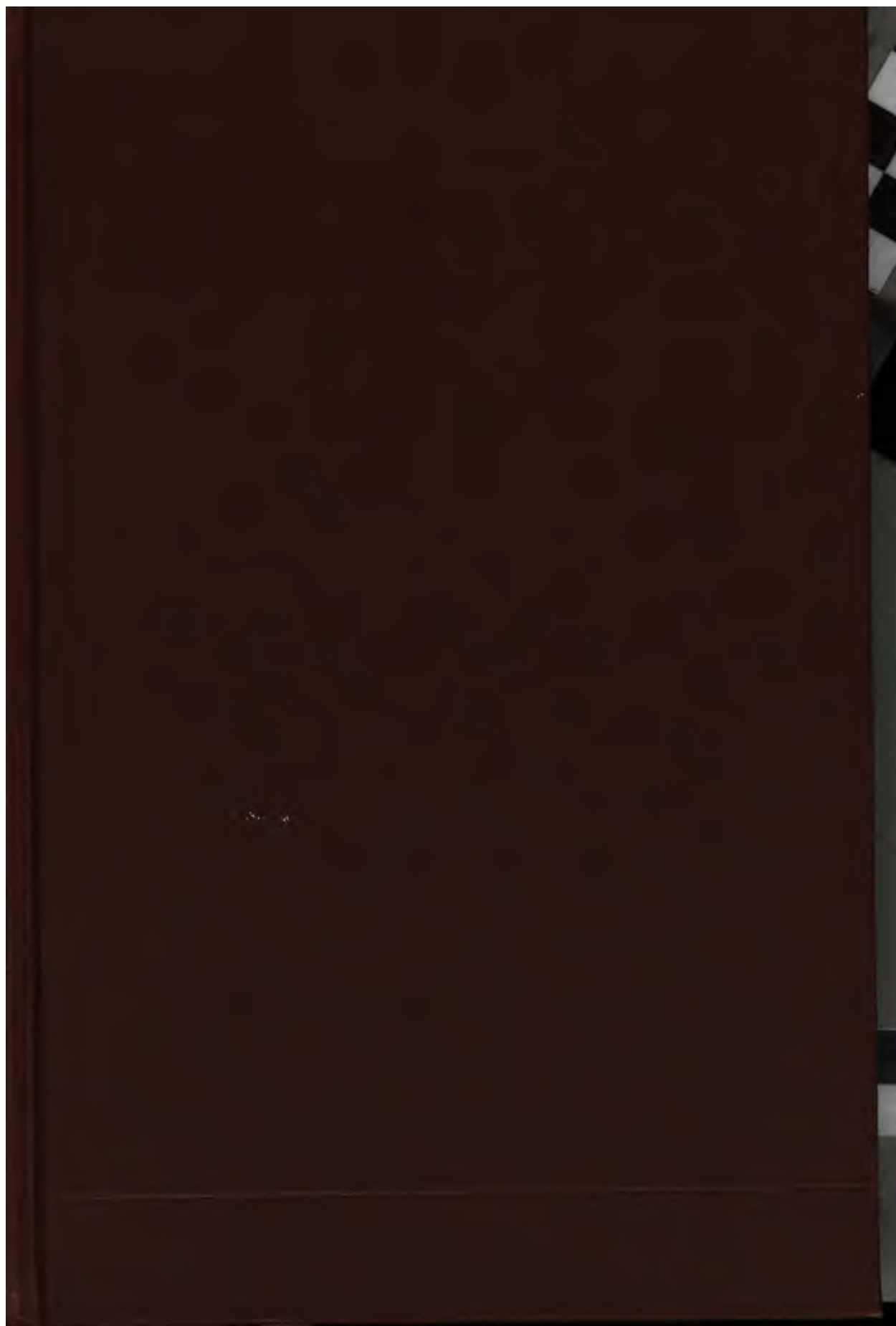
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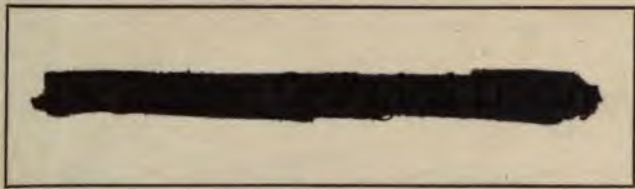
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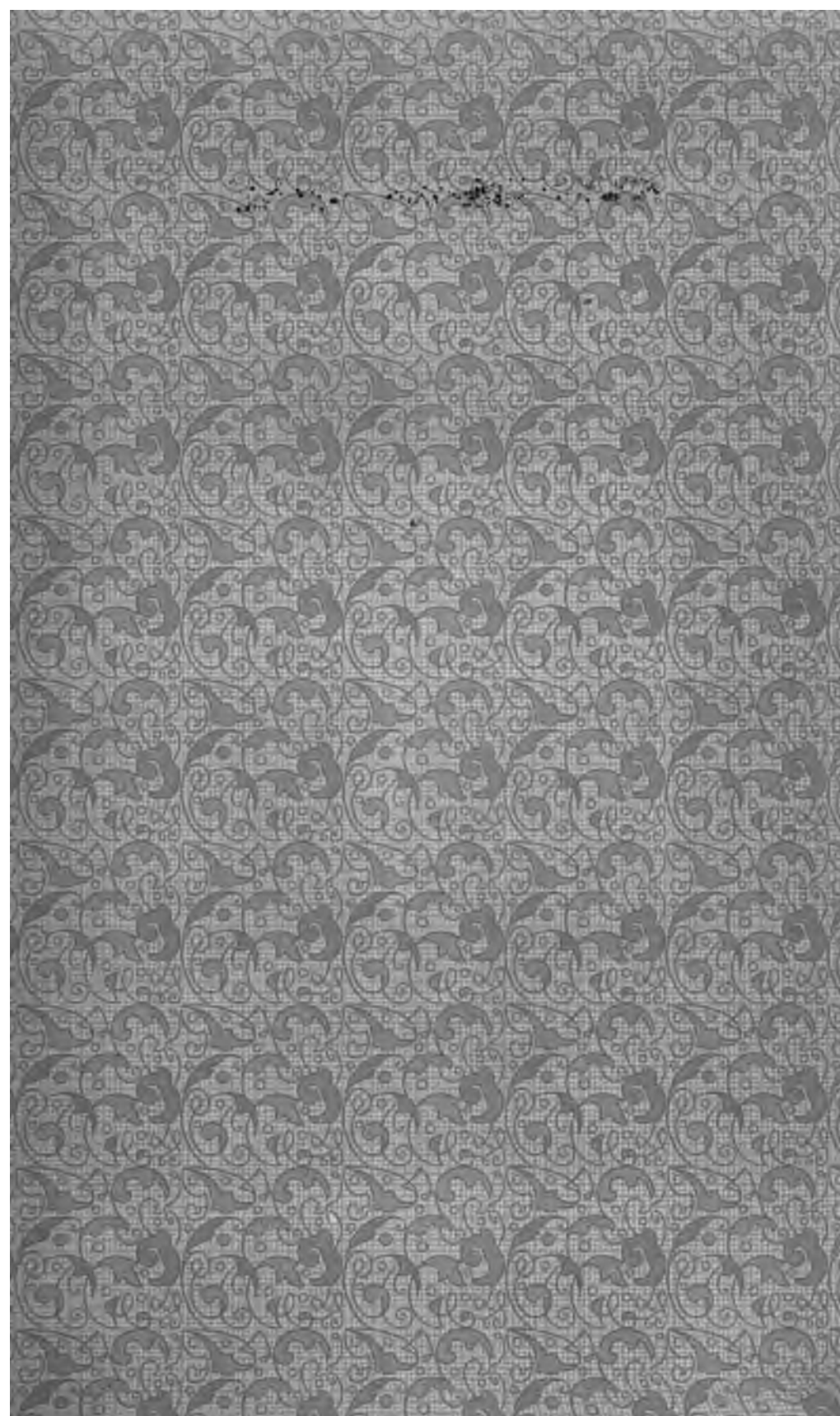
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LELAND STANFORD JUNIOR UNIVERSITY



THE
American Antiquarian

— AND —

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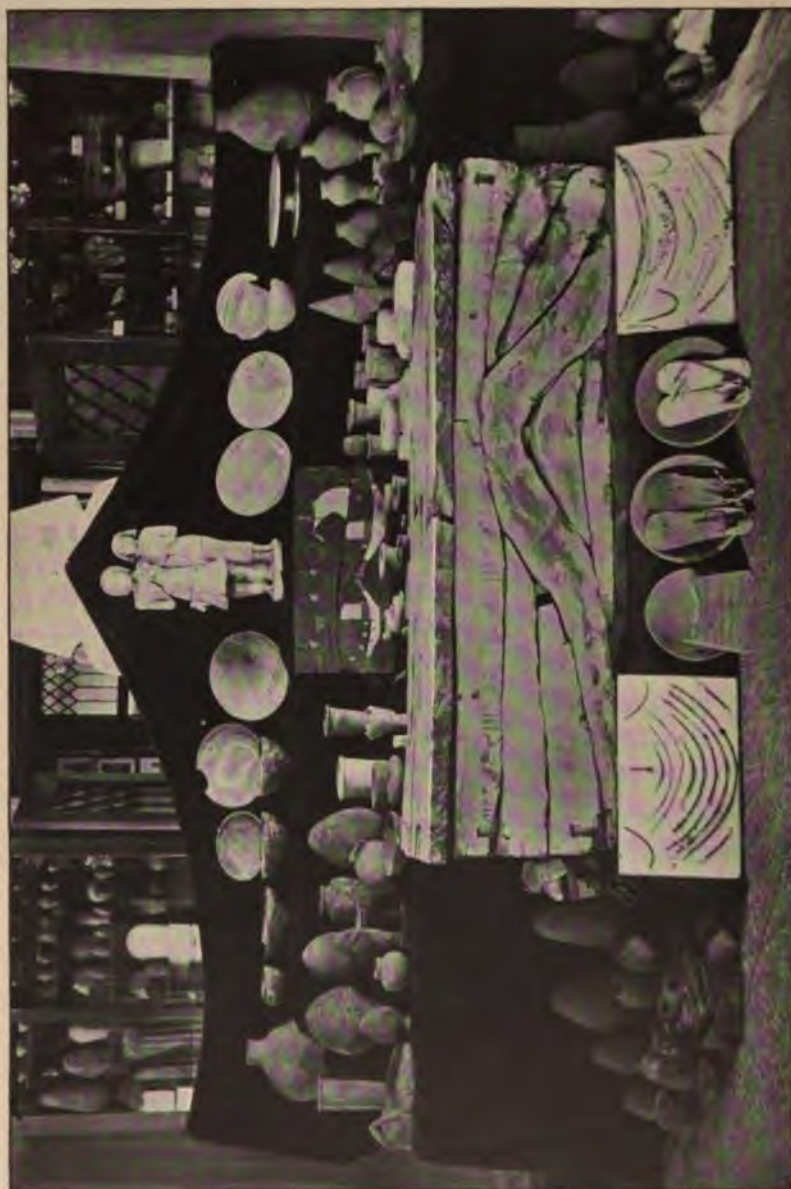
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EGYPTIAN RELICS AT HASKELL MUSEUM.

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No. 1

WAMPUM USED IN COUNCIL AND AS CURRENCY.

BY W. M. BEAUCHAMP.

The historic wampum used in Indian council is always small and may be a little irregular when merely strung, but more uniformity is necessary when it is arranged in belts. Ordinarily it is in small cylinders, about a quarter of an inch in length and an eighth of an inch thick. Owing to the large number of beads required and this regularity of size, it is very doubtful whether wampum belts were used before the coming of the whites as necessary or ordinary parts of Indian councils. Loskiel distinctly asserts that they were not, and while his statement regarding strings seems true, it may be that belts embroidered with porcupine quills may have supplied the lack of wampum belts. He says that "before the Europeans came to North America, the Indians used to make strings of wampum chiefly of small pieces of wood of equal size, stained either black or white. Few were made of mussel, which were esteemed very valuable and difficult to make; for, not having proper tools, they spent much time in finishing them, and yet their work had a clumsy appearance." Hutchinson also thought that "the Indians northeastward of the province of New York had originally no knowledge of this sort of money, or medium of trade." He might have said the same of those farther west.

Morgan, in his *League of the Iroquois*, asserts that "the primitive wampum of the Iroquois consisted of strings of a small fresh-water spiral shell, called in the Seneca dialect *Ote-ko a*, the name of which has been bestowed upon the modern wampum." Some such Iroquois tradition there certainly is, but there is nothing more. No such beads have been found. Occasionally I have met with shells of *Goniobasis* and *Melantho* on Iroquoian sites, early and recent, but have seen but one perforated, and none worked more than this. There is little reason to suppose they were used, though they may have been.

In fact, while large shell beads of an early day are occasionally found in the interior of New York and of the Canadian territory east of Lake Huron, it is noticeable how very few shell beads of any kind are met with on the earlier sites of the Huron

Iroquois. It is partly for this reason that I think a mistake has been made regarding Cartier's account of Hochelagan beads, in 1534. That the story is partly fanciful I have little doubt; but it has been accepted by Charlevoix and Dawson, and beads at least may have been seen by the French voyager.

He said: "The thing most precious that they have in all the world they call 'esurgny,' which is white and which they take in the said river in Cornibots, in the manner following: When any one hath deserved death, or that they take any of their enemies in wars, first they kill him, then with certain knives they give great slashes and strokes upon the buttocks, flanks, thighs and shoulders, then they cast the same body, so mangled, down to the bottom of the river, in a place where the said 'esurgny' is, and there leave it for ten or twelve hours, then they take it up again, and in the cuts find the said esurgny or cornibots. Of them they make beads and use them even as we do silver and gold."

Charlevoix said that Cartier "makes mention of a shell of an uncommon shape, which he found, as he says, in the island of Montreal; he calls it esurni, . . . but they are no longer to be found in the island of Montreal." Sir J. W. Dawson conjectured that "the esurgny was made of the shells of some of our species of melani or paludina." He also suggested "that the statement may refer to some practice of making criminals and prisoners dive for them in the deeper parts of the river." In a letter to me some years after expressing this opinion, he said: "As to the wampum, the only shell bead I ever found on the Hochelaga site seems to me to be made of Unio shell. It is small and is figured in 'Fossil Men'."

It is possible these were not shell beads at all, but, as I have elsewhere suggested, the white eyestones of our freshwater crayfish. Neither the paludina (melantho) nor the melonia (goniobasis) are carnivorous and both are easily collected from the shore. Neither would make a white bead except by long weathering, and at first the esurgny is said to be in the cornibots, which term might apply, not to the shell, but to the long horns, or feelers of the crayfish, which is also carnivorous.

That the Hochelagans withdrew to New York and became the Mohawks is now the received opinion in that state. In their later territory are three fortified villages which seem to have been occupied a little before A D, 1600. In writing about two of these sites, Mr. S. L. Frey said: "Although I have gathered thousands of things made of clay, stone and bone from these, I have found only one piece of sea-shell, partly drilled, and one shell bead. The bead is a small disk of white shell $\frac{3}{8}$ of an inch across. But when we came to the villages on the river . . . in all these, wampum, shell beads and ornaments are abundant."

My own experience is the same. Prehistoric Onondaga vil-

lage sites yield few shell articles, or none at all. On one, occupied not far from 1600, I have figured one moderate sized shell bead and two which might have been rather long council wampum, small and nicely drilled. While I have small wampum of Indian make, these two beads are the oldest of that kind which I have seen, and European tools may have been used in making them, they are so neat. From an earlier site, possibly, I have one Unio bead, a much larger one of sea-shell, and a shell pendant, among hundreds of other things. The conclusion is that then the commercial supply was small at first, and that wampum belts and beads in the interior belong to a later day.

With the advent of the Dutch came a new era in trade, and all speedily changed. The accounts are confused regarding the increased manufacture of wampum, for while some seem to assert that the English and Dutch made most of it, others ascribe this to the Indians. Both probably made it, but with European tools, and there are many curious and suggestive statements. Thus, its manufacture is said to have been introduced into New England in 1627, by Isaac de Razier, secretary of New Netherlands, while on an embassy. He took wampum and goods to purchase corn. To this introduction of wampum Hubbard attributed all their wars with the Indians which afterward ensued. 'Whatever were the honey in the mouth of that beast of trade, there was a deadly sting in the tail. For it is said that they (the Dutch) first brought our people to the knowledge of the wampum peag, and the acquaintance therewith occasioned the Indians of those parts to learn the skill to make it, by which, as by the exchange of money to purchase stores of artillery, both from the English, Dutch and French, which proved a fatal business to those that were concerned in it.' This should be understood of the trade rather than the manufacture, for the Dutch saw money in wampum in every form.

At the same time early writers are so explicit in their description as to leave no doubt that it was an early and laborious aboriginal art. The white man simply made it more easily produced and gave it a wider field. Evils came from rivalry, and the Dutch soon complained that the English desired to monopolize all the profits of the wampum trade. They secured the eastern end of Long Island, where, said the Dutch, "the greatest part of the wampum is manufactured by the natives." Guns were bought by the Mohawks, and from being a weak and tributary people, they soon exacted tribute in wampum from other tribes. This brought it inland.

While Roger Williams, Thomas Morton and other early New England writers, describe the wampum made there. It may be doubted whether much of it was small and even enough for use in belts. The beads were of two kinds, white and dark violet, and being used both for ornament and money, soon found

their way hundreds of miles into the interior. At a later day Beverly said: "It was the English alone that taught them first to put a value on their skins and furs." Beads could be counted or measured, were durable and easily carried, and being prized as ornaments were readily exchanged. In trade the longer beads were often most in demand.

The primitive manufacture need hardly be described, but Williams said, "before ever they had awl blades from Europe they made shift to bore their shell money with stones." Lawson said that "the drilling is the most difficult to the Englishman, which the Indians manage with a nail stuck in a cane or reed." The aboriginal boring can thus be distinguished from that of the white man, the latter being uniform and the former small in the center. For the purple beads the dark spot in the sea clam was used, but any white shell answered for the others, and in these the twist of the columella is quite commonly seen in some of the best.

The Dutch saw money in wampum everywhere. In describing the many beautiful wampum ornaments of the Indian women, they describe also the tasteful decoration of their skirts, adding, "the wampum with which one of these skirts is ornamented is frequently worth from one to three guilders." Thus the New England writers speak of King Philip's wampum dress, of which he detached portions if in want of money.

As currency, the dark wampum was twice the value of the white, but of late this has been reversed among the Onondagas, who have comparatively few white beads. The old Dutch documents have curious references to it. In 1634, it is said: "Wampum being in a manner the currency of the country, with which the produce of the interior is paid for, must be considered as obtained goods, being the representative thereof." This seems the first legal act regarding this, but it points out a prevalent custom. It is noted in 1649 that "Indian money consists of white and black wampum, which they themselves manufacture; their measure and value is the hand or fathom."

In a return made in 1650, it is said: "Heretofore there has been no currency but wampum among the common people in New Netherland; the wampum which formerly passed at the rate of four for a stiver was reduced to six." A settlement was recommended at Gardiner's Bay, Long Island, "to secure the trade of the Indians in wampum (the mine of New Netherland), since in and about the above mentioned sea and the islands therein situate, lie the cockles whereof wampum is made, from which great profit could be realized."

The traders found they must give the New Jersey Indians, in 1648, "two fathoms of white and one of black wampum for one beaver, and one fathom of cloth for two beavers. Each fathom of wampum contains three ells, some one-sixteenth less

The Indians select the largest to trade." In 1657 prices of furs were established as follows: "For a merchantable beaver, two strings of wampum; for a good bear skin, worth a beaver, two strings of wampum; for an elk skin, worth a beaver, two strings of wampum; for a deer skin, 120 wampum;" etc.

It was in 1660 that the soldiers desired to draw a month's pay in wampum, and Governor Stuyvesant was asked to loan some to other parties. In 1658 the sheriff of New Netherlands; acting as commissary, was selling goods in small quantities for wampum, by the director's order. Six years later wampum had depreciated and it was recommended that the West India Company should credit the indebtedness, one-third for wampum and one-fourth for beaver. At the same time Stuyvesant asked Van Rensselaer to negotiate a loan of 5,000 or 6,000 guilders in wampum, at Albany, and send it down the river to pay laboring people. It naturally accumulated at that place for trading purposes, and then and long afterwards a great deal was made there. Thence the French secured part of their Canadian supplies. Ten years later a loan of 4,000 guilders in wampum was made. The Dutch usually mentioned the value of their wampum presents and the English colonies had laws upon it.

Collars of porcelain, otherwise wampum belts, are mentioned in Canada in 1639, but it is doubtful whether these were at first like the later council belts, yet the latter soon appear in some form. Certainly the Hurons gave them no prominent place for a time.

The Mohawks presented belts to the French in 1641, and this was constantly done afterwards, wampum being now abundant with them, through trade and conquest. By these they invited the French to dwell among them. When Kiotsaeton came to the French, in 1645, "he was, as it were, covered with wampum." In the council he used seventeen belts and his mode was very striking. He said that five years before they had a sack full of wampum with which they had intended to treat with the French.

In 1648 the Onondagas sent ambassadors to the Hurons with belts and Hurons returned with them bearing presents. It is said: "Our Hurons use peltries for these presents, precious in the hostile country; Onontaronnons use wampum belts." The Huron messengers were sent back "loaded with seven great belts of wampum, each of which was of three and four thousand beads." These were now the common presents of the Iroquois, but not of western nations.

Emblematic belts seem to have come later. When the French first went to Onondaga, no emblems are described on their belts, nor is there the slightest reason to suppose that any one of these belts has survived. I have often seen the one erroneously credited to Chaumont, and it needs only a reference

to the relation to see how baseless is such a belief, which I once shared. When Le Moyne, however, visited the Mohawks, in 1655, he received rich presents. "The first and most elaborate of these presents was a large figure of the sun, wrought with six thousand beads." But the Mohawk ambassador to the French used an emblematic belt two years earlier. "This belt was composed of white and violet wampum, so that there were some figures which this good man explained in his fashion: There, said he, are the lakes, here are the rivers, here are the mountains and the valleys that it is necessary to pass; here are the portages and waterfalls." Belts of this kind may thus be said to have originated with the Mohawks. They were common a hundred years later, but not at once.

Governor Burnett used one in 1624, presenting a belt to the Five Nations which had upon it G. R., for King George; another with G. P. W., for George, Prince of Wales; and a third with P. F., for another of the royal family. On the part of the whites the use of letters became frequent, but the Indians preferred something more like a picture. In 1748 Sir William Johnson gave the Six Nations "a prodigious large belt, with an emblem of the Six Nations joining hand in hand with us." This kind became a favorite.

He explained the chain belt in 1754. "This represents the king, our common father; this line represents his arms extended, embracing all us, the English, and all the Six Nations; these represent the colonies which are here present and those who desire to be thought present; those represent the Six Nations, and there is a space left to draw in the other Indians; and there, in the middle is the line represented which draws us all in under the king, our common father."

In February, 1756, he gave the Six Nations the largest belt he had yet used, and the Senecas sent this to nations farther west. It is described as "a prodigious large belt . . . of 30 rows broad of wampum, with a figure of the sun in the middle and the Six Nations at one end." After his death, in 1774, the Onondagas showed the great belt of Union, given to the Six Nations before the war, and which had lain at their great council fire ever since. It was "an extraordinary belt, nearly five feet long, and consisting of 30 rows of white wampum in breadth, with a figure of black wampum in it."

Belts were freely used at the great conference at Easton, Penn., in 1737. Teedyuscung gave one of twelve rows, and also two belts tied together, with an explanation of the ancient method of making everlasting peace. The governor confirmed this, giving a very large belt, with the figures of three men in it, representing his majesty, King George, taking hold of the Five Nations' king with one hand and Teedyuscung, the Delaware king, with the other, and marked with the following letters and figures:

G. R., or King George; 5 N., Five Nations; and D. K., Delaware King."

A Pennsylvania belt, of 1758, was white and had "the figure of a man at each end, and streaks of black, representing the road from the Ohio to Philadelphia." Lafitau says: "Neither the color nor the other qualities of wampum are a matter of indifference, but have an immediate reference to those things which they are meant to confirm. The brown or deep violet, called black by the Indians, always means something of severe or doubtful import; but the white is the color of peace. Thus, if a string or belt of wampum is intended to confirm a warning against evil, or an earnest reproof, it is delivered in black. When a nation is called upon to go to war, or war is declared against it, the belt is black or marked with red, called by them the color of blood, having in the middle the figure of a hatchet in white wampum." Such rules were not invariable.

On this point Heckewelder says: "Occasionally the black also is made of use on peace errands, when the white cannot be procured; but previous to its being produced for such purpose, it must be daubed all over with chalk, white clay, or anything which changes the color from black to white. . . . A black belt with the mark of a hatchet made on it with red paint, is a war belt. . . . Roads from one friendly nation to another are generally marked on the belt by one or two rows of white wampum interwoven in the black, and running through the middle and from end to end." The meaning of the symbols, however, was somewhat arbitrary, and was to be taken according to the explanation given at the time.

Few men ever saw so many wampum belts or used them so lavishly as Sir William Johnson. He said of these: "Their belts are mostly black wampum, painted red when they denote war; they describe castles sometimes upon them, as square figures of white wampum, and in alliances, human figures holding a chain of friendship; each figure represents a nation. An axe is also sometimes described, which is always an emblem of war." Diamonds also signified nations; connecting lines may be alliances or roads, and there are other symbols much more arbitrary. Axes and pipes might be appended, according as war or peace was intended. Speaking of a belt with fifteen bloody sticks, Johnson said: "The like is very common, and the Indians use sticks as well to express the alliance of castles as the number of individuals in a party. These sticks are generally about six inches in length and very slender and painted red if the subject is war, but without any peculiarity as to shape." This was not always the meaning, for in 1688 a Cayuga chief gave a belt with twenty-eight sticks attached, each of which signified a prisoner. Many years later, the Five Nations gave three sticks with some propositions, but replaced them with belts the following year.

Belts were sometimes doubled, to express a double message. Count Frontenac sent one to Onondaga in this way. Among those sent to him thence in 1693, one had five black squares on a white ground, showing the Five Nations united to one purpose.

Chain, covenant and scalp belts were often mentioned in the 18th century. The latter was a commission to take a scalp, or bring it back. War belts were taken hold of and danced with and a very large belt indicated important business. A belt might be returned, but if kicked around in the council it was a sign of contempt. It was no mark of indignity to throw it on the ground, but to leave it there was to reject the proposition. It was not right to take the belt and refuse the request. Soon after the rebuilding of Onondaga, messengers came from Albany, April, 1699. They gave the proposition of Earl Bellemont with "seven hands of wampum, which were hung up in the proposition house. The messengers spoke with nineteen guilders of strung wampum. The five Canadian belts were thrown towards a sachem and, falling short, another Indian kicked them along. The messengers then went out of the proposition house and came also to the new house." Mention is made of leaving a belt in the house of the dead for a year, or until death was avenged. In August, 1746, the Five Nations addressed the Massachusetts commissioners and "threw down a war belt of wampum on the ground, it being the Indian custom to deliver war belts and make declaration of war in that manner."

Belts were once much used in condolence, but only strings now appear. These were of early use and were never dispensed with by the Five Nations when they could be had. In June, 1701, the Onondagas announced the death of an old chief and the appointment of his successor, giving a bunch of wampum to each nation. The Cayugas did the same. The bunches are still presented but not retained. Several Cayugas were at Albany in September, 1697, and spoke in behalf of their Elder Brothers. The Senecas had lost several young men in war. "You know our custom is to condole the dead by wampum, therefore give us some for these beavers; so laid down ten beaver skins. The wampum was immediately given for the said skins." Two days later three Seneca chiefs came and exchanged four beavers for wampum for their condolence. The English often covered the grave with other things.

Beaver skins often took the place of wampum as presents in council. This was the case at Fort Orange, in July, 1660. The Senecas, under which name the Dutch included all the Iroquois but the Mohawks at that time, gave beaver altogether, but wanted wampum in return. In trade they wanted thirty hands of black wampum for one beaver, but the Dutch would fix ~~the price~~. Wampum pipes are mentioned among later presents.

Glass beads were sometimes used instead of shell wampum, and there are belts of this material still in existence. This was rare, however, and the Indians readily detected any imitation of their favorite material. As the French called wampum "porcelain," it is not always certain which was used. Le Moyne gave glass beads freely. In a council held September, 1687, the Onadagas renewed the covenant chain by a belt ten deep and received glass wampum and fifty white strings. In a preceding conference seventy-five glass and ten strings of white wampum were returned. The shell wampum, however, became too cheap and was too much prized to allow of a substitute on state occasions, and shell was a favorite material for many ornaments.

Belts seem to have been made in various ways, and the earlier ones in some cases may have been very simple. Sometimes they were but a few simple strings, tied together to form a flat surface. In these, inequalities in the size and length of the beads would have been less objectionable. After receiving belts for a score of years from Onondaga, and much more from the Mohawks, the French held a conference with the Iroquois, on Lake Ontario, in 1673. It was recorded at that time that "the Five Nations gave us a belt of wampum which is worthy of note, because formerly it was customary to present only some fathoms of stringed wampum." This may refer to some change in making belts, for they certainly were not all alike.

Loskiel said that "the Indian women are very dexterous in weaving the strings of wampum into belts, and making them with different figures, perfectly agreeing with the different subjects contained in them." In a French account of comparatively early belts, in 1657, it is said that the belts are wide sashes, the purple and white beads in rows "and tied by little leather strings, whereof a very pretty tissue is made." The Indian women, however, did not make all the belts. It is probable that most of the lettered belts were wrought by the wampum makers in Albany and elsewhere. Certainly some of those which have reached us are made on common twine, though usually on buckskin thongs. The Pennsylvania records show the white man's skill, leaving out female agency altogether. Thus, in the journal of John Hays, while on his way to attend an Indian council, under date of May 13, 1760, at Wyoming, he says: "Wrought at making belts and strings of wampum. 14. Very rainy weather, so that we could not set out; so we followed our old business of belt making. 15. Weather the same, so that we were obliged to lie by as before, and made belts."

Belts have varied greatly in size as well as construction. Hubbard says: "They are wove as broad as one's hand and about two feet long." Morgan says: "Wampum belts were made by covering one side of a deer skin belt with these beads, arranged after various devices and with most laborious skill. As

a belt four or five feet long by four inches wide requires several thousand of these beads, they were estimated at a great price." I have seen none made in this way and remember no record of any. He says also: "A full string of wampum is usually three feet long and contains a dozen or more strands. In ancient times six of these strands was the value of a life, the amount paid in condonation for a murder." I have handled a great deal of strung wampum and have seen no strings exceeding two feet in length. Usually it is much shorter and the bunches used in condolence are quite short, as a rule. The value remains about as when he wrote, two beads for a cent, and this was nearly the usual estimation in early days. Morgan also says that the purple beads were used for political purposes, and the white for religious. This is true only in a very general way, but white is emblematic of purity now, as once of peace.

From the way in which they were woven I have no doubt that belt making was a very rapid process, having observed the dexterity of Indian women in bead work. Several large buckskin thongs were stretched out, side by side, as a foundation. The beads were strung and the string was passed around each thong as the proper bead took its place between them. When one width of beads was thus woven across, the string took a reverse direction and another row was added. Most of the thongs are single, but there are more at the braided edges. Lafitau described wampum belts: "The belts are large bands, in which little cylinders are disposed in rows and tied down with small thongs of leather, which makes a very neat fabric. The length, size and color are proportioned to the importance of the affair. The usual belts are of eleven rows of an hundred and eighty beads each." Loskiel gives a different account of belt making. "Four or six strings joined in one breadth and fastened to each other with fine thread make a belt of wampum, being about three or four inches wide and three feet long, containing, perhaps, four, eight or twelve fathoms of wampum, in proportion to its required length and breadth."

Mr. Morgan gave a better account of the usual manner of belt making, in making a report on the New York State Museum, than in his excellent book. He speaks of cords of bark thread whereas buckskin was commonly used for the foundation. These were passed through a strip of deer skin to keep them equidistant, and an elastic splint kept the cord tense. For a belt of seven rows, seven beads were threaded and passed under the cords bringing the beads into position. From the farther edge the thread was brought back above the cords, passing through each bead in succession and making all fast. He gives the average size as seven beads wide, and the length from two to six feet. I have a small one of this kind nine rows wide.

In his picture of the council of de la Barre with the Onon-

dagas, in 1673, la Hontan has a figure of the wampum belt much as it now remains. His spirited narrative at that time gives one of the best examples of its use.

It is to be remembered that very few belts were preserved. To some councils they were taken almost by the bushel, over a hundred being sometimes used, but nearly all these were afterwards taken apart or made to do duty on some other occasion. This is mentioned in the records of councils, and Lafitau says that the Agoianders, or nobles, "furnish them, and it is among them that they are redivided when presents are made to the village, and when replies to the belts of their ambassadors are sent." At a council in Canada, in 1756, it was said: "In regard to the belts presented by the Five Nations, each of them furnish in turn and contribute equally to that expense, and all the Indians are very particular in exhibiting the share they possess in these presents at the end of each speech; the orator is careful, when handling the belts, to cry out the name of the canton or nation which has furnished it." This feature is not usually preserved in the reports of councils. The repeated use and division of wampum helped to keep the supply good:

The Mohawk word *gaionni*, used for a belt, is from the same root as the title of the Iroquois aristocracy, and signifies something highly esteemed. Father Bruyas also defined *gannisterohon* as a dance of the Agoianders where they give wampum to the spectators. A string was *onnongwira*.

Different writers report the amount of wampum given on account of a murder differently, and it evidently varied much. Morgan's statement has been given. Loskiel says, "For the murder of a man one hundred yards of wampum, and for that of a woman two hundred yards must be paid by the murderer." In other ways the high value of a woman's life was expressed.

The accounts of wampum making naturally differ. One states that the Indians broke off half of the purple part of the sea clam and bored this with sharp stones. Three black beads or six white were worth an English penny. Sewant was also sometimes made from oyster shells, and poor work or material occasioned some Dutch laws. Loskiel said it was sawed into small blocks and then ground and perforated. The fullest account of its modern manufacture will be found in Howe & Barber's Historical Collections of New Jersey. When that was published, wampum was still made by women in Bergen county for Indian traders. The shell is too hard and brittle for mere machinery, and it is ground to the desired form. A piece is split off and then placed in the sawed crevice of a slender stick, grasped in both hands and ground on a grindstone into an eight-sided figure, an inch long and nearly half an inch thick. This is placed in another piece of wood, fastened to a table or bench, and ingeniously arranged to hold the shell tight. A tempered

drill is prepared and inserted in a grooved ring, and is operated by a hand bow. The point is adjusted to the centre of the shell and the outer end to a steel plate on the breast of the artisan. About every other sweep of the bow the drill is drawn out, cleaned and cooled by dripping water. Too much heat would break the shell. When bored half way the bead is reversed and drilled from the other end. Several beads are then strung on a wire, one end of which is fastened to a bench, and they are ground on a fluted grindstone revolving beneath; A stick held in the right hand turns the beads until they are nicely rounded. These are longer than ordinary council wampum, as described, but could be cut to any length. At that time they were strung on strings a foot long, which sold for $12\frac{1}{2}$ cents each, and a woman made from five to ten strings a day. Many families were constantly employed. It was made in several parts of Long Island as late as 1850 at least, and in 1831 several bushels were brought from Babylon, on that island. The old shell heaps of primitive workmen are large and numerous.

As I have before described, the Onondaga belts are now scattered, and as most of them were figured in the second report of the Bureau of Ethnology, I will say little about them now. The largest one remaining, although imperfect at each end, is the widest one known, being fifty rows deep and containing about twelve thousand beads. I lately secured a good photograph of this. Another, its companion, and made at the same time, is forty-five rows deep, and differs somewhat in design. The widest belt otherwise known was described as prodigiously large, and was but thirty rows deep. The great width of the Onondaga belts would show their moderate age, were there no other reason. All these belts, of course, are of modern beads. There is an equally good collection in Canada. Two small belts sent me for inspection, not long since, were of a peculiar form, the outline being that of a deep basin. They were short but very deep for the length. Each successive row or two was shortened moderately at each end, making the lowest row about two thirds of the length of the upper. There were but few white beads in these. One of them is twenty-eight rows deep, the upper row of 70 beads and the lowest 47 beads, average shortening of about a bead to a row. Another is of 27 rows, the basal row of 40 beads and the upper of 68 beads, thus contracting a little less. The first contains 1722 and the last 1580 beads. Other odd patterns sometimes occur.

It has been noted that strings of wampum came earlier than belts and that their use has survived. As far as my observation is concerned, belts have not been produced on public occasions for many years. For messages, councils and condolences strings alone are used. This is in accordance with the tradition that Hiawatha made the first strung wampum: of fresh-water pond

shells, according to one story; of quills, according to another. Their use was precisely that of the belts. When the English messengers came to Onondaga, in September, 1713, they were met and welcomed outside the town, as was customary, though afterward in the council house. "The sachems came all together, by order of the Five Nations, and spoke with three strings of wampum, in their loftiest style." Suitable responses followed.

Strings were used as evidence of authority. Count Zinzendorf had a string of 180 beads given him by the Onondagas, in 1742. This constituted Bishop Spangler's certificate on his embassy to them three years later, and was used by other Moravians. Dekanissora was urged to do some business in Albany when there, two hundred years ago, but he would not because he bore no official wampum. An old chief assured me that wampum answered the purpose of an official letter, a council paying no attention to one who came without it. Councils are called by wampum even now, and sometimes by a very small amount. A small string is attached to a stick of equal length, the notches on which show the days before the council. A single string of black wampum, united at the ends, calls a council to condole a war chief. A bunch of three strings is used when a principal chief dies.

In Iroquois councils, six strings united at one end represent the Six Nations. When these are laid down in a circle, the ends coming together, the council is opened. Taking up the string closes it. There are appropriate bunches for each nation for mourning the dead, for the new chief's name, and other things on which I need not now enlarge. Ten long strings of white beads are much prized, and represent the moral law. White beads are also used in annual confession of sins. Charged with these, they are thrown into the fire and guilt is purged away. This, of course, is somewhat of a modern rite, as, indeed, all wampum ceremonies might be considered.

The Iroquois had an official wampum keeper. Morgan says that this office was hereditary in the Wolf clan. This soon became a matter of convenience. In 1750 it was held by the Turtles; in 1845 by the Beavers, and then by the Snipes. Among the Canadian Iroquois the late John Buck was wampum keeper, and he not only did not hold the principal chief's place, to whom Morgan assigns this as an hereditary office, but was of the Turtle clan. Of course, the theory rests merely on Indian tradition, and that often proves an unsafe guide.

This brief sketch of wampum leaves out a great deal that is of interest, and much more might be adduced to show what a great and sudden impetus was given to its use in the 17th century.

THE FATE OF THE SUSQUEHANNAS.

BY GEN. J. S. CLARK

[This article is a part of a letter written to the editor in 1880. It has been preserved as a keepsake in the editor's drawer, but is now presented as a memorial of the scholarship of the distinguished gentleman whose name is affixed.]

The six Tribes, owing to their organization into a confederacy and their geographical situation, were able to subdue and disperse not only the tribes west of them, such as the Hurons, Neutrals and Eries, but they also conquered those to the south, the Susquehannas, Delawares and the Shawnees, forbidding them to make war except by their consent; in other words, made women of them.

The wars of the Iroquois against the tribes of the Susquehanna (Iroquois tribes) began as early as 1615, and continued with intervals until about 1675, when the Susquehannas located near Columbia were the last to fall. These have been called by various names: by the French, Andastique; by the English, Susquehannas, and by the Swedes and Dutch Minquas and Suscohannas. In 1661 the Senecas were at war with them. In 1662 William Backman reported to Governor Stuyvesant that on the 3d December five Minqua chiefs arrived at Altena (New Wilmington) and informed him, among other things, that 800 *Black Minquas* were shortly coming to their assistance; that 200 had already arrived, and that they were fully resolved to go to war with the Seneca's next spring. (Col. Hist. N. Y., XII, 419.) Heckwelder has explained that the Black Minquas were the *Monsey Tribes of the Delawares*. In 1663 the Senecas, with 800 warriors, accompanied by their wives and children, numbering 1600 in all, moved against the Minquas (Susquehannas) near Columbia, but were ingloriously defeated.* At this date the Susquehannas could muster 800 warriors and the Black Minquas 1,000, and not until several years after this were the lower Susquehanna tribes and the Monseys brought under subjection.

You say: "In 1758 was the last time their name (the Delawares) appeared among the tribes east of the Alleghenies." In view of the fact that Tedyuschung, from 1756 to 1764, was the leader of and king (as they called it) of a large number of Delawares on the upper Susquehanna and Chemung rivers and gave the provinces of Penn and Sir William Johnson such infinite trouble, so that Sir William, in 1764, sent expeditions and destroyed eight villages on the Chemung, it would seem that you were slightly in error, concluding, perhaps, that because there was a large number on the Allegheny and Ohio, there were none east of the mountains.

They were not wholly free from the dominion of the Iroquois but were tributary to them wherever they were. The Shawnees were all "women," and subject to the Five Nations through the

*See a very interesting account of this in *Mag. of Am. Hist.* April, 1878, p. 244, by La Salle.

Mingos, who were placed there purposely to rule over them, as did Shikilling for many years while they were on the Susquehanna. Previous to Celoron's expedition, 1739, and the subsequent efforts to secure French supremacy on the Ohio or south of the lake, a large proportion of the Delaware clans had removed to the Allegheny and Ohio. Most of these were in sympathy with the English, but as the French came in, a great number returned to the east of the mountains, had their kings, as did also those west, but they appear to have been independent of each other, but all subject to the Iroquois.

In 1750 all the Montanis were west of the mountains. Madame appears to have been at Venango, and French Margaret, her daughter, at Hock Hocking, as appears by Mitchell's map, as also by Evans, 1755. In 1752 they had all returned to the east of the mountains, and all the clans with which they were connected.

The many migrations and general mixing up of tribes makes it exceedingly difficult to describe this period. I have succeeded, in a measure, in untangling the matter east of the Alleghenies, and have made some progress west, but the work goes slow, on account of the scarcity of data. I have ascertained the exact date at which the Nanticokes became tributary, in 1680,* at which time they were presented with a large wampum belt, 21 rows wide, with three black hands wrought in it.

In 1712 Allommapus headed the delegation to bear the annual tribute to the Five nations, bearing the great calumet which had been delivered to the Delawares on the conclusion of peace. He said it had been delivered *many years previous*.†

My conclusions are that the Susquehannas were completely subjugated about 1670, and that all the Delawares fell with them at that time or within a few years after, and undoubtedly during the reign of Tamanen, who was living and was king as late as 1694. They certainly sustained their independence some years after 1663, and were threatening to invade the Seneca's territory in that year, with the combined forces of the Susquehannas and Delawares.

In speaking of Delawares, I think it would be better to describe them as a nation or a confederation of tribes, for there were no less than six, and probably ten, different and distinct tribes located on the Delaware river. This remark appears equally well in speaking of the Tuscaroras, Shawnees, Eries, Andastes, and, in fact, nearly all are general terms. The Catawbias were made up of half a dozen different tribes; the Tuscaroras not less than four; and as the term Andastes has been used, not less than fifteen or twenty different tribes must be included,

As to the migration of the Dakota, or Sioux, tribes from the

*Pa. Col. Rec. II, 387.

†Pa. Col. Rec. II, 546.

Atlantic coast to their present seats in the west, there are many evidences. Take the Saponies, for instance, known by contemporary writers under half a dozen different names, and whom Gallatin classed among the Iroquois—called by the Iroquois, Toderiks; by the French, Panis; west of the Mississippi, Pawnees, alias Naudowasses, alias Dakotas, alias Sioux. These purely Dakotas were on the Atlantic coast in 1700. Did they reach there from the west, or did the western tribes migrate east? I presume both questions should be answered in the affirmative. But to trace this particular clan from Carolina to Pennsylvania, from Pennsylvania to New York, from thence to Canada; and another portion from Carolina westward to the western plains, becomes a somewhat difficult problem, for when we attempt the tracing of the many tribes in their devious wanderings, the labor becomes one of great magnitude. I have no faith in the idea of the absolute destruction of the many tribes said to have been destroyed—they reappear under new names. Many were undoubtedly killed in the wars, many were captured, but more escaped and formed new alliances. The same clans that welcomed Hudson still exist in the west. The same tribes found by De Soto are now on the western plains, and the same clans found by Captain Hendrickson, on the Delaware, in 1614, can be traced to their present homes west of the Mississippi. The term Delaware covered a wide field and numerous tribes.

This class of information is difficult to reach and requires considerable rummaging in local and general histories.* Mr. L. H. Morgan† is disposed to classify the Catawbas among the Dakotas, as also all Iroquois dialects. This brings out a new idea, for with the Saponas, Tutelos, Nottoways and Catawbas added to the Tuscaroras, we have an aggregation of Dakotas east of the Alleghenies numbering many thousands, and to them may possibly be added a half dozen others of small tribes in the immediate neighborhood.

*If my views are of any value, I will, at an early date, furnish a series of articles for publication, and use my best efforts to make them interesting. This is as much as I dare to promise at present. Thustor having steadily refused to furnish articles, I hope you will be patient.

†See Indian Migrations, *North American Review*, Oct. 1860, Jan. 1861.



ROYAL GORGE AND TOLTEC PASS.

By courtesy of Denver & Rio Grande Railway.



VIEW DOWN THE CLIFF CANON.

THE CLIFF PALACE AND ITS SURROUNDINGS.

BY STEPHEN D. PEET.

The descriptions given of the so-called "High Houses and Round Towers," which were discovered, in 1874, by Holmes and Jackson, in the valley of the San Juan, lead us to consider the cliff dwellings and ruined pueblos discovered since that time. It would seem that notwithstanding the great interest which was taken in these accounts, very few persons visited the region, or; if they did, they published no record, except Mr. L. H. Morgan, who made a hasty trip in 1877, and wrote a description of the ruins on the Animas and the McElmo. The chief work which has been done since that time has been accomplished by private parties.

Mr. F. H. Chapin visited the region in 1889 and 1890, and took photographs of several of the cliff houses including the Cliff Palace. He published the account of his expedition in the *Journal of the Appalachian Club* and in the *AMERICAN ANTIQUARIAN*, afterward published in a beautiful book*.

He was followed by Dr. J. P. Birdsall, who spent a few weeks in the same region, and wrote a description of his explorations for the Geographical Society of New York, a part of which was published in the *American Antiquarian*.

The person who accomplished the most in the way of exploring, measuring and describing the cliff dwellings of this region was Nordenskjöld, of Stockholm, Sweden. He was visiting America, and expected to spend only a few days among the cliff dwellings, but he became so much interested that he employed a number of men and thoroughly examined the ruins in the cliff canon and vicinity. He took photographs of the ruins, measured the rooms made plats and ground plans and afterward published a large quarto volume in two languages, Swedish and English.

He was followed by a party of young men who were employed by the *Illustrated American*, and were led by Mr. W. K. Moorehead. Mr. Lewis W. Gunckel belonged to the party, and furnished some very interesting and valuable accounts of the ruins and the pictographs. This party began their explorations on the Animas, in the same region where Mr. J. G. Birney and Mr. L. H. Morgan had discovered a large communistic house, or pueblo, of the "honey-comb pattern." They passed along the Rio San Juan to the junction of the McElmo and Hovenweep, where were located most of the ruins described by Mr. W. H. Holmes. Here Mr. Gunckel took drawings of rock inscriptions and made plates of some of the ruined

*See *American Antiquarian* Vol. XII.

pueblos. The party then moved westward and visited a number of cave towns and isolated dwellings situated in the Box canons, giving names to the villages and towns. No definite description of these has ever been published except in the *Illustrated American*. We purpose in this article to go over in review explorations in the Cliff canon and give a summary of the results which were reached, leaving the more definite description of the ruins in other localities to a future paper. We use the title "Cliff Palace and Its Surroundings" because of the fact that these names were given to the most interesting ruins discovered. There were also in connection with these ruins a large number of "estufas," or "kivas," which were in reality temples—at least the only temples known to the Cliff-dwellers or Pueblos.

We shall begin with Mr. Chapin's account. He says: "The spires of the San Juan ranges had exercised a powerful fascination on me from the moment I first beheld them far to



TOLTEC GORGE.

the eastward, in scaling the savage aretas of the Sierra Blanca. The spell became more fixed when, after a year's interval, emerging from the canon Gunnison, I saw the snowy summits piercing the blue sky only a score of miles to the southward. It was at its maximum as, leaving the main trans-continental line at Montrose, our little train sped directly toward them, giving us constant views, now, on the left of the castellated ridges of mighty Umcompahgre, now, on the right, of the peaks about Ouray, culminating in Mount Snaefell, whose form was barely traceable through the smoky haze that seemed to magnify its altitude.*

Mr. Chapin first described the ruins in the Mancos Canon, which joins the Mancos from the east. He says:

"It is one of the finest of all the side ramifications, and contains antiquities well worth investigating. A good Indian trail traverses the whole length of Mancos Canon, and similar paths lead for some distance up its branches; but to visit the remote ruins it is much easier to ascend the walls of the same canon to the surface of the mesa, cross the plateau and thus strike the tributaries up toward the beginnings. The ruins which we propose to photograph is situated on the western cliff of Acowitz Canon. We

*See Chapin's "Land of the Cliff Dwellers."

The following is a list of photographs of Cliff dwellings and ruins furnished by Mr. Chapin:

1. General view of Mancos canon.
2. Tower in Mancos canon.
3. Sandal Cliff-House, estufa in Sandal Cliff-House and Interior.
4. Plan of first Cliff dwelling visited.
5. Fortification at Acowitz canon; also small Room lookout on upper ledge. Primitive grindstone and plan of the Cliff-house.
6. An Impregnable Fort.
7. Cliff Palace, front view; ditto from opposite side; interior of round Room; mural decoration and north end of cliff palace and tower and T-shaped doorway.

here found a wall which must have been used as a fortification. Stepping over the tumble-down walls and looking over the precipice, we found hewn steps on which we reached the bottom of the way. A strange, wild, lonely canon. No sounds were heard to disturb the scene but the croaking of ravens as they flew over our heads. The great arched cliff hangs high above the ruins, but a little way from it the canon ends in sheer solid walls, which sweep round in a curve. Looking all about, we see but one exit above, and that by the steps which we had descended. Perched in a little cleft over our heads was a second group of buildings, apparently inaccessible, and in good repair.

On the south corner is a curious little building, to which there is one entrance. This, one would take for a window, but that no light could pass through it when the whole wall was standing. It was a fascinatingly queer place. We were struck with the strength of the position, and believed that we could have kept in check a small army of combatants. We noticed some peculiar arrangements. One was a sort of a low cubby-hole, outside of the main structure [Fig. 5], 8 feet front and 5 feet deep, with two little



FIG. 2. — SCENERY IN MARSHALL PASS.

doors. This may have been used as a store-room. We found much broken pottery. One of the central rooms is well plastered, and is as smooth as a modern wall. A round room had piers below the ground floor. These also were plastered, and there were little recesses in the sides of the wall, which may have been used as shelves. There were some interesting grooves on a ledge of smooth sandstone. These grooves in the rock were made by the natives in sharpening their tools. Most of them were large and were probably used for grinding all edges. On another ledge we observed smaller ones where knives, awls and needles were whetted. One remarkable thing, which showed the eccentricity of the builders, was a room which appeared to have no entrance; in fact, I walked around it without discovering I had passed a room. A little investigation revealed an entrance at the top. The enclosure was 8 feet square; the entrance, a hole 17½ inches square. The ceiling was plastered over, and was very firm. [Fig. 6.]

We discovered some houses in the Fourth Fork of Acowitz canon. Here stands a good circular room, with two doors. On the sand plateau, near the brink of the gorge, is the most remarkable crevasse that I ever saw. It made me shudder to look into it, though standing on the edge of a high cliff would produce no such sensation. From a pocket of the canon we had a remarkable view of the whole length of Acowitz to the Mancos, and then, through that depression, that magnificent mesa, which stands above the river's place of exit. It was a truly sublime sight. The nearer scene is a wild one: quaking aspens grow in the upper part of the gorge, and in the bottom are tall, stately pines, which climb to the top walls and were even with our eyes as we looked across the canon."

Mr. Chapin next describes the location of the Cliff Palace. He says,

"The honor of the discovery of the remarkable ruins to which the name 'Cliff Palace' has been given, belongs to Richard and Alfred Wetherell,*

*These gentlemen, in company with Messrs. Charles McLoyd, L. C. Patrick and J. H. Graham, during the winters of 1888-9, explored the entire region along the Mancos, penetrating into the canon, with the view of collecting relics. Up to March, 1890, they had examined in all 182 houses. They visited 106 houses in Navajo Canon alone, and worked 250 miles of cliff front.

of Mancos. The family own large herds of cattle which wander about on the mesa verde. The care of these herds often call for long rides on the mesa and through the labyrinth of canons. During these long excursions many magnificent ruins have been discovered. Narrow, winding defiles, precipitous, bold headlands and overhanging ledges are the characteristics of one canon, called the Cliff Canon.

"On reaching the bank of the canon opposite the wonderful structure, the observer cannot but be astonished at the first sight of the long line of solid masonry which he beholds across the chasms, here but a thousand feet wide. In the first burst of enthusiasm it strikes one as being the ruins of a great palace, erected by some powerful chieftain of the lost people. The best time to see the ruins is in the afternoon, when the sun is shining into the cavern. The effect is much finer than when viewed in the morning. Surely its discoverer did not exaggerate the beauty and magnitude of this strange ruin. It occupies a great space under a grand oval cliff, ap-



FIG. 3. CLIFF PALACE, SIDE VIEW.

pearing like a ruined fortress, with ramparts, bastions and dismantled towers. The stones in front have broken away, but behind them rise the walls of a second story, and in the rear of these, under a dark cavern, stands the third tier of masonry. Still farther back in the gloomy recess, little houses rest on upper ledges. [See Fig. 3.] A short distance down the canon : re cosy buildings, perched in utterly inaccessible nooks. [See Fig. 4.]

"The scenery is marvellous. The view down the canon to the Mancos is alone worth the journey to see. To reach the ruins, one must descend into the canon from the opposite side. What would otherwise be a hazardous proceeding is rendered easy by using the steps which were cut into the wall by the builders of the fortress. There are fifteen of these scooped-out hollows in the rock, which cover, perhaps, half the distance down the precipice. One wonders at the good preservation of these hand-holes in the rocks; even small cuttings to give place for a finger are sometimes placed exactly right, even in awkward places. It is evident why they were so placed, and that they have not been changed by the forces of the air in sev-

Many ruins were found in unsuspected places. Many were worth a visit, just to look at. Some appeared comparatively new; others as if they had been long occupied; and still others were much dilapidated, scarcely a vestige remaining. They commenced their excavations at the first Cliff-house in Mancos Canon, to which the name Samdal Cliff-house was given. This has been described by Mr. Chapin, and several illustrations of it are given in his book. They penetrated the depths of the Cliff canon and from this, and other places, gathered a large collection of relics, which were first placed in the Historical rooms at Denver, but were afterward sold to Rev. J. H. Green, who placed them on exhibition at the World's Fair and then sold them to the University of Pennsylvania.

eral hundred years that have probably elapsed since they were chipped out by an axe made of firmer rock. There occurs to my mind but one explanation of their preservation: erosion by wind is one of the factors in chiseling rock-forms about the Mancos, and as we observe sand in these hollows, we suppose the wind at times keeps the grains eddying round, and thus erosion in the depression keeps pace, perhaps even gains, on the rate of denudation of the smooth cliff.

"It takes but a few minutes to cross the bed of the canon. In the bottom is a secondary gulch, which requires care in descending. We hung a rope, or lasso, over some steep, smooth ledges and let ourselves down by it. We left it hanging there and used it to ascend by on our return. Nearer approach increases the interest in the marvel. From the south end of the ruin, which is first attained, trees hide the northern walls, yet the view is beautiful. The space covered by the building is 125 feet long, 80 feet high in front, and 80 feet deep in the center, and 124 rooms have been traced out



FIG. 4. CLIFF PALACE, SIDE VIEW.

on the ground floor. So many walls have fallen that it is difficult to reconstruct the building in imagination, but the photograph shows that there must have been several stories; thus a thousand persons may easily have lived within its confines. There are towers and circular rooms, square and rectangular enclosures, all with a seeming symmetry, though in some places the walls look as if they had been put up as additions at later periods. One of the towers is barrel shaped; others are true cylinders. The diameter of one room, or estufa, is $16\frac{1}{2}$ feet; there are six piers in it, which are well plastered, and five recess holes, which appear as if constructed for shelves. In several rooms are good fire-places. One of our party built a fire in the largest one, which had a flue, but found the draught too strong for his light wood, and came near going up with the smoke. In another room, where the outer wall had fallen away, an attempt was made at ornamentation. A broad band had been painted across the wall, and above it a peculiar decoration, the lines of which were similar to embellishment on the pottery. In one place corn-cobs were embellished in the plaster, the cobs as well as the kernels of corn were of small size, similar to that which the Ute squaws raise without irrigation. Besides corn, it is known that the Cliff-dwellers raised beans and squash. We found a large stone mortar, which may have been used to grind the corn. Broken pottery was everywhere present. Specimens similar to those we had collected in the valley ruins convincing us of the identity of the builders of the two classes of houses. We found parts of skulls and skeletons, and fragments of weapons and pieces of cloth. The burial place of the clan was down under the rear of the cave.

Notwithstanding the imposing name which we have given it, and which its striking appearance seems to justify, it was a communistic dwelling, or clan village. There is no hall leading through it, and no signs that it was a home prepared for the ruler of a people. It owes its beauty principally to the remains of two towers, and its magnitude to the fact that the length of the platform (ledge) and depth and height of the natural arch allowed of such a building in such a remote quarter. This large, open cave, as well as others in this region, are natural, and do not appear to have been enlarged in any way by man.*

Mr. Chapin also visited a number of other cliff dwellings, several of them in the Navajo canon, a branch of the Mancos canon. To these names have been given, which are descriptive of their peculiarities. He speaks of one which is well preserved and which, perched high up on a cliff, looks as if newly



FIG. 5. LOOKOUT IN THE ACOWITZ CANON.

constructed. To this the name of "Balcony House" has been given, as timbers project from the high walls. In another canon are three interesting ruins in close proximity. In one of these houses is a fire-place which has a raised hearth and fender. In another house is an estufa, where there is a fire-place once honored with a chimney.†

*There are few caves in the valley of the San Juan and the Mancos, which seem to have been deepened and walled up, descriptions of which have been given by W. H. Holmes and Mr. Jackson. A large number of such caves are found on the Salado river to the southwest of this, and on the headwaters of the Gila river, and the tributaries of the Rio Grande. These have been described by Mr. A. F. Tandelier, Maj. J. W. Powell, Charles F. Lummis, Victor Mindcliff. None of these present any such specimens of architecture as the Cliff Palace.

†Fire-places have been rarely observed among the Cliff dwellings. Mr. Holmes describes one in the Mancos canon. Mr. Walter J. Fewkes describes fire-places found in the ruins near Zuni. Mr. F. F. Bickford says [Century Magazine, Oct., 1890], in describing ruins on the Chaco, neither fire-places nor flues are to be found, and it is probable that fires were never built in the living apartments. Fire-places were found in nearly all the estufas, and an air chamber connecting the estufa with the outside air in such a way as to make a draft through the estufa, and thus carry the smoke up through the opening in the roof.

The "Spruce Tree House" was another ruined building which he photographed and described in his book. His description of this is as follows:

"About the best preserved specimen of a cliff-dwelling eyrie—at least one that retains more features of interest than many of the other ruins—is one that is situated in a right-hand branch of the second large right-hand fork of Navajo canon. It is about three hundred feet long. Under a natural sheltering rock, remains of three stories are standing. Originally the building was probably five stories high, and was built in the form of a terrace, the two lower tiers having been built outside the limits of the arch, and lower than the platform of the cave,



FIG. 6. ESTUFA WITH AIR FLUE.

so that what we now see standing are the three upper stories. The lower parts of the edifice, more exposed to weatherings have mostly crumbled away. The entrance to apartments in the cave was probably made by passing over the top of the outside buildings.

"The masonry of the building is all of very good order; the stones were laid in mortar and the plastering carefully put on, though, as the centuries have elapsed, it has peeled off in certain spots. At the north end of the ruin is a specimen of masonry not to be seen in any other cliff house yet discovered. This is a plastered stone pier which supports the wall of an upper loft. It is ten inches square and about four feet high. Resting on it are spruce timbers, which run from an outer wall across the pier to the back of the cave. Above the pier is a

good specimen of a T-shaped door with lintel of wood and sill of stone.

The largest cliff-dwelling described by Mr. Chapin is one to which he gave the name of the "Loop-Hole Fortress." He describes it as follows:

"There is another mighty arch in one of the Navajo canons which shelters a ruin well worthy of description. The building is visible from the brink of the canon, as one journeys up its length. To find a place to descend, one must round the head of the canon and follow a long winding route over and under ledges to the canon bed. The noble arch rises a hundred feet above the natural platform. The sloping bed of the canon reaches to the base of this platform, which rises like a terrace to a height of about twenty feet. Trees and bushes grow up to the base of the ledge. The ledge is approximately 480 feet long, as we determined by pacing. This is the largest cliff-dwelling yet discovered in this region. The front walls were built upon the rim of the platform, which is curved to the general form of the ampitheatre, and gives the building the appearance of an impregnable fortress. The walls of solid masonry remain firm, and present an imposing front. In the center the stones have broken away in such a manner as to leave standing a high wall, which gives a gothic appearance to the ruin.

"At one end three stories remain standing; the upper room is squeezed in under the arch and was entered by a low door. These high-standing walls show how the cliff dwellings were originally constructed. They reached to the roof of the cave, and were necessarily higher in front than in the rear, for the cliffs make over them an arch which served as a natural roof. As first built, much more space than the platform was utilized, and a lower terrace occupied. Walls that divided rooms and formed the ends of the structure run down among the trees and bushes; the lateral walls have all fallen down. In some places, where the ground is steeply inclined, the stones of the ruin lie like a talus on a mountain-side.

"On ledges above the main edifice are smaller buildings, and in one cranny is a long, low structure, with thirteen loop-holes in front and two at the end. Those in front open at different angles, so that any approach from below could be observed by the watching cliff-climbers. From this fact I have named this ruin the "Loop-Hole Fortress." This ruin, if undisturbed, will doubtless remain for centuries in about its present condition, and cannot but fascinate the archaeologists who shall chance to visit it. Perhaps these same ruins, if placed on a plain, or in a quiet valley, would not appeal so strongly to our sense of the marvellous. Here, in a remote canon, far from the river, far from water of any kind, with high frowning walls upon three sides and an untracked ravine below it, one

wonders why the lost tribes should have selected such a place for their home.

"The standing masonry, in itself, is of interest. The solid front does not give the idea of patchwork, as presented in many of the buildings of the Cliff-Dwellers. Standing on the parapet and looking along the front line, there is not a break to be seen in its continuity, except as the platform bulges in or out. Save that the stones were already at hand, shapen by the elements as they had broken off from the cliffs and overhanging ledges, the marvel would be greater that a people, with only stone and wooden tools, could have accomplished such a work. The light of noonday floods the walls of the ramparts and penetrates into the deep recesses of the cave, but as the sun sinks westward a dark shadow creeps across the front of the caver and the interior is deep gloom. It is then that the explorer, standing among the crumbled walls and gazing up at the loop-holes above, or following with his eye the course of the canon down to its end where it joins the greater gorge wonders what events happened to cause this strong fortress to be deserted or overthrown. There must have been a fearful struggle between a people who were emerging from barbarism, and more savage hordes, or some great catastrophe of Nature overwhelmed them."

Mr. Nordenskjöld's description of the Cliff Palace corresponds to that given by Mr. Chapin, but is more complete. In a long but not very deep branch of Cliff canon, and near a wild and gloomy gorge lies the largest of the ruins on the mesa verde. Strange and indescribable is the impression on the traveler, when, after a long and tiresome ride through monotonous pinon forests, he suddenly halts on the brink of the precipice and in the opposite cliff beholds the ruins of the Cliff Palace, framed in the massive vault of rock above, and in a bed of sun-lit cedar and pinon trees below. This ruin well deserves its name, for with its round towers and high walls rising out of the heaps of stones deep in the mysterious twilight of the cavern, and defying, in their sheltered site, the ravages of time, it resembles, at a distance, an enchanted castle.

The Cliff Palace is probably the largest ruin of its kind known in the United States. In the plate which represents the whole series, over a hundred rooms are shown. About twenty of them are estufas. Among the rubbish and stones in front the ruin are a few more walls not marked in the plan. The stones are carefully dressed, and often laid in regular courses; the walls are perpendicular, sometimes leaning slightly inwards at the same angle all around the room, this being part of the design. All the corners form almost perfect right angles when the surroundings have permitted the builders to observe this rule. This remark also applies to the dwellings, the sides of which are true and even. The lintel often consists of a

large stone slab, extending right across the opening. On closer observation we find that in the Cliff Palace we may discern two slightly different methods of building. The lower walls, where the stones are only rough hewn and laid without order, are often surmounted by walls of carefully dressed blocks in regular courses. This circumstance suggests that the cave was inhabited during two different periods.

The rooms of the Cliff Palace seem to have been better provided with light and air than the cliff dwellings in general, small peep-holes appearing at several places in the walls. The door-ways, as in other cliff-dwellings, are either rectangular or T-shaped.*

Mr. Nordenksjold lays great stress on the skill to which the walls of the Cliff Palace bear witness, and the stability and strength which has been supplied to them by the careful dressing of the blocks and the chinking of the interstices with small chips of stone. A point remarked by Jackson in his description of the ruins of southwestern Colorado, is that the finger-marks of the masons may still be traced in the mortar, and that these marks are so small as to suggest that the work of building was performed by women.

Like Spruce Tree House, and other large ruins, the Cliff Palace contains at the back of the cave extensive open spaces, where tame turkeys were probably kept. In this part of the village three small rooms, isolated from the rest of the building, occupy a position close to the cliff; two of them built of large flat slabs of stone, lie close together; the third, of unhewn sandstone, is situated farther north. These rooms may serve as examples of the most primitive form of architecture among the Cliff people.

In the Cliff Palace, the rooms lie on different levels, the ground occupied by them being very rough. In several places terraces have been constructed, in order to procure a level foundation, and here, as in their other architectural labors, the Cliff-dwellers have displayed considerable skill.†

*Some of the latter are of unusual size; in one instance 1.05 m. high and 0.61 m. broad at the top. The thickness of the walls is generally about 0.12 m., sometimes, in the outer walls, as much as 0.65 m. As a rule they are not painted, but, in some rooms, covered with a thin coat of yellow plaster.

†The plate, as I have just mentioned, is a photograph of the Cliff Palace from the north. To the extreme left of the plate a number of much dilapidated walls may be seen. They correspond to rooms 1-12 in the plan. To the right of these walls lies a whole block of rooms (13-18) several stories high and built on a huge rock, which has fallen from the roof of the cave. The outermost room (14 in plan; to left in plate 13) is bounded on the outside by a high wall, the outlines of which stand off sharply from the dark background of the cave. The wall is built in a quadrant at the edge of the rock just mentioned, which has been carefully dressed, the wall thus forming apparently, an immediate continuation of the rock. The latter is coursed by a fissure, which also extends through the wall. This crevasse must, therefore, have appeared subsequent to the building operations. To the right of this curved wall four rooms and in front of them two terraces connected by a step. One of the rooms is surrounded by walls three stories high, and reaching up to the roof of the cave. The terraces are bounded to the north by a rather high wall, standing apart from the remainder of the building. Not far from the rooms just mentioned, but a little further back, lie two cylindrical chambers. The round room is joined by a wall to a long series of chambers, which are very low, though thick walls extend to the rocks above them. They probably served as store-rooms. These chambers front on a "street," on the opposite side of which lie a number of apartments, among them a remarkable estufa. In front lies another estufa, and not far from the latter a third.

CLIFF PALACE, SIDE VIEW—IN CLIFF CANON.





SQUARE TOWER IN THE CLIFF PALACE.



PORTION OF THE CLIFF PALACE,

Not far from Cliff Palace, Mr. Nordenskjöld found the remarkable and extensive cliff-dwelling, which he called "Balcony House." The following is his description:

This cliff dwelling is the best preserved of all the ruins on the Mesa Verda. It also seems as if the architecture of the Cliff people had here reached its culminating point. Still more care has been bestowed on the erection of the walls in general than in the Cliff Palace. Balcony House occupied a better position for purposes of defense than the other large ruins described. A handful of men, posted in the cliff-house, could repel the attack of a numerous force. At the south end of the ruin, additional precautions have been taken for the strengthening of its defense. A very narrow cleft, which forms the only means of reaching the south part of the ledge, has been walled up to a height of nearly 16½ feet. The lower part of the wall closing this cleft is pierced by a narrow tunnel. Through this tunnel a man may creep on hands and knees from the cliff dwelling to the south part of the ledge. The latter affords a footing, with the precipice to the left and the cliff to the right, for about a hundred paces, the ledge being here terminated by the perpendicular wall of the cañon. The ruined walls of a strong tower, built to cut off approach on the side, may still be traced. A supporting wall has been erected on a lower ledge, to form a stable foundation for the outer wall of the upper rooms, where the higher ledge was too narrow or too rough for building purposes. The total height of the wall has thus been raised to 6.5 m. South of the room fronted by this wall is a small open court, bounded at the base by a few very regular and well-preserved walls, which rise to the roof of the cave. On the outer side the court is enclosed within a low, thick wall, built on the edge of the precipice. The second story is furnished, along the wall just mentioned, with a balcony, the joists between the two stories project a couple of feet, long poles lie across them parallel to the walls, the poles are covered with a layer of cedar bast and finally with dried clay. This balcony was used as a means of communication between the rooms in the upper story. The roof of the rooms just north of this point is constructed in the same manner as the balcony just described. It projects a few feet beyond the walls on two sides, forming a spacious platform. In most of the cliff-dwellings the roofs probably consisted of similar platforms, and it was presumably here that the cliff-dwellers spent most of their time and performed their household duties, as the custom is to the present day among the Moki Indians of Arizona. Near the cliff, between the platform and the balcony, is a deep hole, forming a small passage; through which it is possible to descend by the aid of some pegs driven into the walls, to a narrow ledge. Ladders seem, as mentioned above, to have been seldom employed by the Cliff-people. The perilous climbs, that formed a part of their daily life, had injured them to difficult pathways.

The staple industry of the Cliff-people was the cultivation of maize. This may be gathered from the plentiful remains of this cereal to be seen everywhere in the cliff-dwellings and their neighborhood. Well-preserved ears of maize are sometimes found in the ruins. They belong to several varieties, and are yellow or reddish brown.

Besides maize, the Cliff-dwellers cultivated beans of a brown variety, solitary specimens of which I found in some ruins, and probably some species of gourds. The stalks of the latter are common; bits of the rind are also found, and, more seldom, the seeds. Cotton was used by the Cliff-dwellers, as the raw material of superior textile fabrics, numerous fragments of cotton cloth, have been found. The cotton shrub was probably cultivated by the Cliff-people, at least in some localities, for in the cliff-dwellings of southern Utah the seeds of this shrub have been observed.

The yucca plant afforded an excellent raw material for rope, cord, and coarse woven fabrics. This plant, which is extremely common both on the mesa and in the beds of the canons, has long, narrow, sharp leaves, composed of long and very tough fibres.

The animal kingdom, too, was laid under contribution for miscellan-

ous purposes. Several circumstances lead us to the conclusion that the Cliff dwellers kept tame birds, probably the turkey, in a domesticated state. This bird probably supplied the down of which the so called feather cloth, or rather down cloth, was made, for the material consists of the humeral quill coverts of a gallinaceous bird.

Among a variety of implements, awls are the most common. They are found in great numbers in all the cliff dwellings, and also among the fragments of pottery in the barrows on the mesa. They were made of the bones of birds and small mammals, and sharpened on the face of the sandstone cliff.

Mr. Nordenfjöld also explored a group of ruins situated in Cliff cañon, to which he gave the name of the "Long House," though this is the same ruin which Mr. Chapin calls the "Loop Hole Fort," as the situation of the buildings on the ledge of rocks and the presence of certain loop-holes through the walls suggested the idea that it was both a dwelling and a fortress, though Mr. Mindeliff claims that the cliff houses were not fortresses, but were temporary residences. The following is the description of the fortress, what he calls the "Long House:"

"From the bottom of the canon we force our way through dense, thickets some hundreds of feet up the slope. Here we reach the deep cliffs, ranging ledge upon ledge, to the mesa. The ruin lies upon one of the lowest ledges, and the climb, though troublesome, is attended with no serious difficulties.

"Among half ruined walls and heaps of stones, we can distinguish eleven different rooms, lying in an irregular row along the narrow shelf close to the edge of the precipice, and sheltered by the overhanging rock. The way by which we have climbed has led us first into a circular room, or estufa, still in a fair state of preservation. The wall that lies nearest the precipice is, for the most part, in ruins; the rest of the room is well preserved. After about half a metre of dust and rubbish had been removed, we were able to ascertain that the walls formed a cylinder 4.3 metres in diameter. The thickness of the wall is considerable and varies, the spaces between the points where the cylinder touches the walls of the adjoining rooms having been filled up with masonry. The height of the room is 2 m. The roof has long since fallen in, and only one or two beams are left among the rubbish. To a height of 1.2 m from the floor the wall is perfectly even and has the form of a cylinder, or rather of a truncate cone, as it leans slightly inwards. The upper portion is divided by six deep niches into the same number of pillars. The floor is of clay, hard and perfectly even. [See Fig. 6.] Near the center is a round depression, or hole, entirely full of white ashes, undoubtedly the hearth. Between the hearth and the outer wall stands a narrow curved wall, 8 m. high. Behind this wall, in the same plane as the floor, is a rectangular opening, which forms the mouth of a narrow passage or tunnel, which runs in horizontal direction, and then goes straight upwards out into the open air.

The wall between the hearth and the singular passage, or tunnel, is replaced by a large slab of stone, set on end. It is difficult to say for what purpose this tunnel has been constructed, and the slab of stone or the wall erected in front of it. As I have mentioned above this arrangement is found in all the estufas. The entrance to the estufa was probably in the

Excavations were begun. Among the many objects discovered were
 barbed arrow, three or four arrows, a stone axe with handle, and a bone and

1. The opening, or an flue, was also shown by Mr. W. H. Holmes by Mr. Chapin and
 2. See W. H. Holmes, Mr. Mindeliff's report on the ruins of the Cliff-dwellers, and de-
 scribed in the 11th Annual Report of the Bureau of Ethnology, and gives plans to illustrate
 3. It was undoubtedly designed as a flue, or chimney, and serves the purpose of a
 window of the room and a draft for air, and the smoke, perhaps, from it.



VIEW SHOWING TERRACES AND DIFFERENT STORIES.

knife. It was evident that not the least trace of moisture had been able to reach the rooms under the sheltering rock. And this explains how such things as cotton cloth, wooden implements, string, pieces of hide and the like, were in a perfect state of preservation. My catalogue includes more than a hundred objects. The most of them were such as were found everywhere in the other cliff dwellings. These would include: pieces of hide, chiefly of deer and mountain sheep, which were used for belts; moccasins, and bags which contained salt; pieces of cloth, well and evenly woven, rather coarse; a great number of wooden and bone implements; and numerous fragments of hide and woven articles. Among the most common articles were: pieces of cords, yucca fibre, sandals, pottery, maize, implements of bone and wood and stone implements. Not a trace of metal has been found. The list shows that the former inhabitants of the cliff-dwell-



THREE-CORNERED TOWER IN NAVAJO CANON.

ings were an agricultural people on the level of the stone age, who had attained a very high rank in the art of making and ornamenting.

"On examining the interior of the estufas in Long House, we find even there exactly the same arrangement: a round hollow near the middle, filled with ashes; between this hollow and the wall a low partition; behind the partition the entrance of the above-mentioned passage, which first runs a few metres in a horizontal direction and then straight up to the bottom of the niche, or out into the open air; and, lastly, the six deep, broad niches in the circular wall, separated by the same number of pillars. The estufa itself is enclosed in a quadrangular room; the space between the inner cylindrical walls and the outer rectilinear ones is filled up to a level with the walls of the estufa, the cylindrical room being thus embedded in a solid cubical mass of masonry. In all the estufas the same construction is repeated, and the dimensions of the rooms are almost exactly similar.

Below this row of six estufas lies a series of rooms, for the most part buried under heaps of rubble and stones. Further east, on the same ledge

as the estufas, lies a block of rooms, the walls of which are still in a good state of preservation, and extend quite up to the roof rock. The innermost of these is more than 6 m. long, rather narrow and almost dark. On the outer side of this room lie two others which formerly possessed an upper story, and the rafters are still in position, and projecting out a foot or two where they probably afforded the cliff-dwellers a hole for the hand in passing the narrow ledge outside the wall. East of these two rooms lie three more, then comes a long open space; in front of this, along the ledge a long row of rooms reached by climbing up to the upper shelf, a few holes having been hewn by the Cliff-dwellers in the sandstone to give a foothold and to make the ascent less difficult. Behind the long row of rooms it is possible to follow the free inner part of the cave all the way to the eastern extremity of the ruin.* Outside of this last-mentioned series of rooms lie



RUINS IN NAVAJO CANON.

two estufas, and below these, to the south, a series of rooms on the lower level. At some place farther east the cave ends.

The walls of the other rooms in Long House are constructed in the same manner as in the town first described; their thickness is also the same, or on an average 0.3 m. The dimensions of the rooms may be estimated at 2.2x2.5 m., with a height of about 2 m. All the doorways are small, measuring 0.5x0.7 m., and have served as windows as well. They resemble the doorways of the other cliff-dwellings. The estufas are of similar form and almost the same size everywhere. They never have an upper story, and they generally lie, when the nature of the ground permits, with the floor sunk lower than that of the adjoining rooms of the ordinary type.

A triangular tower, one wall of which is formed by the cliff, and which still stands to its full height of four stories, is a most interesting feature of the place. One cannot help admiring the skill with which it has been erected. The thickness of the walls is about 3 m. The east part of the

*It will be noticed that in Jackson's and Holmes' description of the Cliff House in the Canon de Chelly that a narrow passage runs parallel to the edge of the cliff, but back of the houses, to the two-story group at the end. The whole front of the town is without an aperture save a few small windows, perfectly inaccessible.

second story is composed of a niche, the roof of which is formed of sticks laid across the opening, covered with twigs and a layer of mortar. The floor of the niche is pierced by a narrow passage leading to an estufa hard by. The room in the third story is small, and the upper room is so tiny that it is impossible for a human being to gain entrance.

I have still to describe one part of Long House, and this not the least remarkable. About 14 m. above the ruins just described, in the overhanging vault, are two long, narrow, horizontal shelves, separated by the smooth rock. Along the edge of these shelves run low walls, pierced with small loop-holes. The ledge itself was quite narrow, the rock above it so low that one had to creep on hands and knees. The wall along the ledge was only 1 m. high and 14 m. long. In the wall we found fifteen small apertures only a few inches wide. These apertures must undoubtedly have been loop-holes for arrows, and were skillfully arranged in all directions, so that the archers were able to command all the approaches to the cliff dwelling, and could discharge a formidable shower of arrows upon an advancing enemy.

A few words in reference to the people who inhabited the Cliff Palace will be appropriate here. It will be understood that no survivor of the Cliff-Dwellers has ever been met, and no tribe has ever been discovered with reliable traditions as to ever having occupied the territory. The only evidence is furnished by the skulls. It may be said here that recently a party has explored the region who claim to have found a very ancient race different from the ordinary Cliff-Dwellers. Dr. Birdsall also says:

"A theory prevails in Colorado, which the writer was unable to trace to its originator, that three distinct races inhabited the land: the mesa-dwellers, with perfect skulls; the cliff dwellers, with skulls having a perpendicular occipital flattening; and the valley-dwellers, with skulls having an oblique occipital flattening. The theory is based on the fact that different shaped skulls have been found at these different situations. The number of skulls examined under the writer's observation were not sufficient to establish much; yet he saw skulls removed from the mesa mounds which, contrary to the theory, were both horizontal and oblique flattening. The cliff house skulls were perpendicularly flattened, and all these flattened skulls were symmetrical. The angle and plane of flattening vary in different skulls, so that it may be readily conceived that in a large number of skulls we might find intermediate grades from the perpendicular to the oblique forms.

"The burial mounds on the mesa contain the decayed remains of human skeletons in abundance, and many in a fair state of preservation, yet nothing but the bones remain and pieces of pottery that were buried with the body, these usually in fragments. When the attitude can be determined, it is usually the flexed position, the body having been laid on the side. Skeletons are also found buried among the ledges, where occasionally, under the protection of some large mass of rock, sufficient earth has been retained in which a shallow grave could be excavated. The best preserved human remains are found in the dry material under the cliffs."

MINIATURES, OR DIMINUTIVE RELICS.

BY G. E. LAIDLAW.

The question in regard to miniatures is whether they were toys or had specific uses. A great deal can be said in regard to both sides of the question; so much so that I think some were of frequent use, while others were toys for children. The purpose of this article is to give a list of some that have come under particular notice, giving a description of them and their probable uses.

First of all we may as well give a list of those occurring in this vicinity, comparing them with others from various localities in their order: Axes or celts, chisels, arrow-heads, pots, pipes, beads and rings.

AXES.—I take axes first because they have a wider range, are more common and are not confined to any particular locality, but are found in all parts of the world. That these diminutive axes had some especial use for the finer classes of work, such as removing the skins from smaller animals, etc., there can be no doubt. Of course they may have been used also as toys for children; or pendants for attachment to the person, as ornaments, as charms; or they may have been used as emblems for burial purposes, substituted for the larger axes of utility, in the same manner that "ghost arrows" were deposited in graves in lieu of the arrow of warfare or chase. But will these ideas explain their presence in other countries? Therefore taking them as a universal class, we can safely say that they were tools of utility for fine work.

In looking over the illustrated catalogue of the Scottish Society of Antiquaries, 1892, I noticed descriptions of a number of very small axes from various countries, some of which I have selected and introduced here in the subjoined list, for the sake of comparison. Other museums possessing miniatures generally catalogue them without giving dimensions or special details.

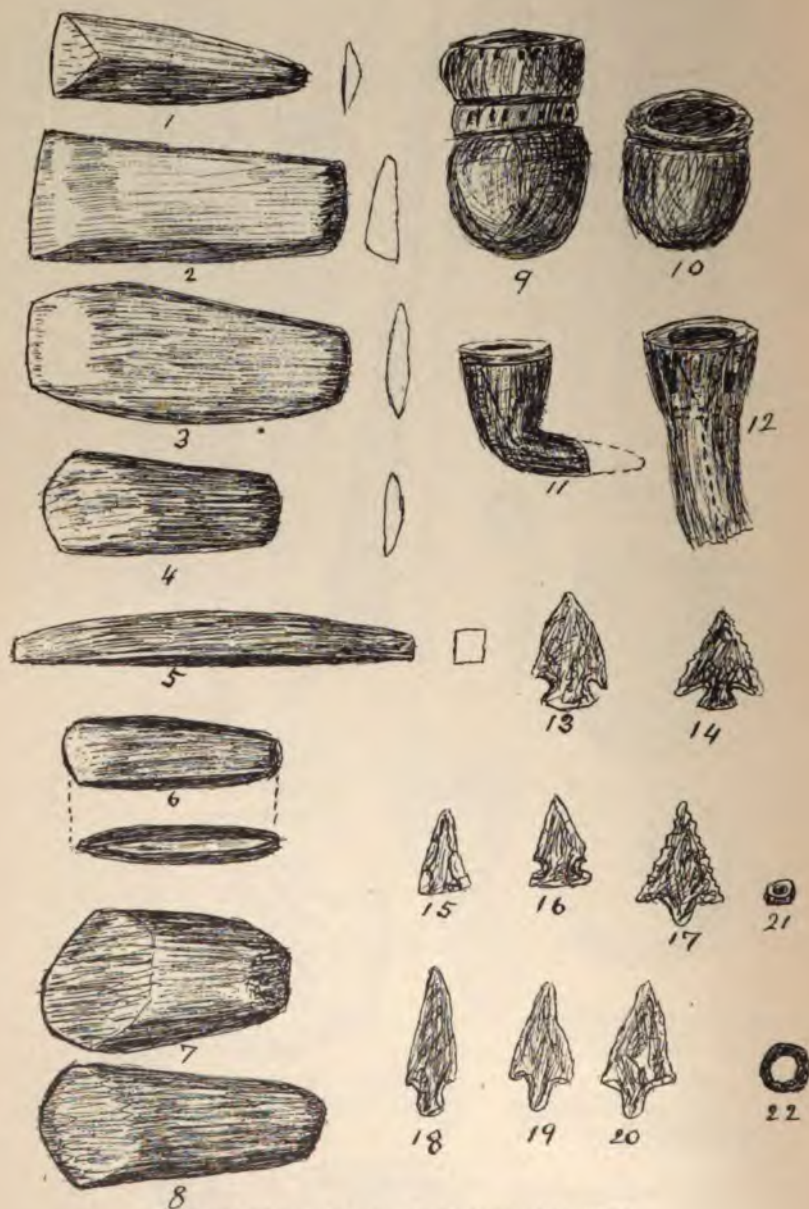
CAT. NO.	DIMENSIONS,	MATERIAL.	LOCALITY.
A. F., 299.	1 $\frac{1}{4}$ x 1 $\frac{3}{8}$ in.	Flint	Forfarshire, Scotland.
" 91.	1 $\frac{1}{2}$ x 1 $\frac{1}{2}$ x $\frac{1}{4}$ in.	Porphyry.	Urquhart, "
" 156.	1 $\frac{3}{8}$ x 1 $\frac{3}{8}$ in.	Weathered Stone.	Wigtonshire, "
" 219.	2 x $\frac{1}{2}$ in.	Serpentine. (chisel.)	Shetland, "
A. G., 362.	1 $\frac{1}{4}$ x $\frac{3}{8}$ in.	Fibrolite.	France.
" 365.	1 $\frac{3}{8}$ x 1 1-16 x $\frac{1}{8}$.	Porphyry.	Athens, Greece,
" 366.	1 $\frac{1}{4}$ x 1 $\frac{1}{8}$ x $\frac{1}{2}$ in.	"	" "
" 367.	1 15-16 x 1 7-16 x 9-16	"	Melos, "
" 370.	1 $\frac{3}{8}$ x 9-16 in.	Green stone.	Ireland.
B. S. 7.	1 $\frac{1}{2}$ x 13-16 in.	Fibrolite.	India.

Besides the above they have a few small axes from the South Sea Island, but give no detail; also the catalogue describes a miniature bronze axe of the socketed variety, with a loop on one side for fastening to the haft, which is classed as an ornament, because the socket is not hollowed out; the loop in this case being used for suspension, Length of axe 1 15-16, and width of blade, which is half moon shaped, 1 1/2 in. This latter specimen is introduced here as a parallel case. In comparing the above we can see that they are in most cases as wide, or as nearly as wide, as they are long; while representative ones from this vicinity are slenderer, and in some cases seem to have been made of splinters from larger celts, figs. 2 and 4; while Nos. 1 and 3 are better finished, but probably had the same origin, being very thin; other specimens are much thicker than the ones figured, and may have been made out of pebbles. Dimensions 1.6 to 2.2 inches in length, .5 to .9 in width, and .1 to .25 in thickness. Of chisels, only one has come to my notice, fig. 5. It is a beautifully shaped double bitted chisel, 2.75 inches long by .3 wide and thick; for a greater portion of its length it has a square transverse section gradually tapering to narrow cutting edges, one of which is slightly abraded as if by use. The sides are carefully smoothed and polished. It is an exact miniature of the large double bitted ceremonial chisels, which are sometimes 12 or 13 inches, found in Ontario. Figures 1 and 5 are of dioritic material and are from village sites in Victoria county, Ontario. No. 6 is one of a series of small axes from China and is taken from the afore mentioned catalogue. No. 7 is taken from Abbott's Primitive Industry: page 46. It is made of a serpentine pebble rubbed into shape, with a very sharp cutting edge: dimensions 1.7 x 1 inch. Abbott also mentions that still smaller and thinner hematite celts with very sharp edges have been found in New Jersey, and says concerning them "that it is vain to conjecture for what purposes they were made." No. 8 is reproduced from Lubbock's Prehistoric Times. It is one of the smallest axes from Ireland, size 1.85 inches by .9. Foster in Prehistoric Races of the United States, page 208, mentions grooved Mound-builders' axes of an ounce in weight.

ARROW-HEADS.—Diminutive arrow-heads do not occur so plentifully, or of such exquisite form and material, on the eastern side of the American continent as they do on the western side and in the neighborhood of the Rocky mountains, and are not nearly so beautifully and regularly shaped and chipped as are the western ones, which are sometimes marvels of aboriginal workmanship. Even in this progressive age the more delicately made ones are eagerly sought for, to be fashioned into watch chains, brooches and necktie pins. But turning to their original uses: it has been held by some writers and others that the very smallest of arrow-heads were made expressly for and



BONE RELICS FROM ASH BEDS.



MINIATURE RELICS FROM VILLAGE SITES.

used by children and were no use for hunting. This view can hardly be retained by public opinion in view of the facts that adult Indians of Oregon and California used those extremely small arrow-heads to a comparatively recent date, both in war and hunting. Taking the children of present day aboriginal tribes living remote from civilization for example: their arrows are blunt and are not tipped for fear of danger to each other or to the dogs, which would result in family troubles and quarrels; besides what Indian, as a rule, would sit down and laboriously fashion arrow-head after arrow-head of small and beautiful shapes, chipped from jasper, chalcedony, obsidian, flint, etc., for children to destroy or lose in a few minutes, though they may have made a few in isolated cases for favorite children. These arrow-heads were much too precious and took so much trouble to make, and being so effective in piercing and penetrating the thick skins of animals, or the clothing of man, more effectually than the larger and clumsier made ones, that it is against all reasoning that they would be given to children to lose or destroy in an idle hour.

Boyle in vol. 8; *Archæological Report*, gives an illustrated series of small arrow-heads from the county of Brant, Ontario, which were collected by Deh-ko-non-ra-neh, a Mohawk chief, who in speaking of them says; "It might be difficult to decide whether the smallest of the arrow tips here figured were of actual use, and if so, what? or merely as playthings for children. Perhaps most of the specimens illustrated were more for ornament than use. Even a savage would hardly expend much time, skill and labor on that which, if once driven from his bow, he might never see again, or see only to find it ruined." Abbot in *Primitive Industry*, page 287, figures two specimens .8 x .5 and .9 x .6 inches in size, and compares them with the western coast ones as about the same size, and says that the number of times of occurrence east of the Alleghanies is less than twelve to the thousand, and that so few are found that they were not likely to be used for ordinary hunting or warlike purposes.

Evans in his work on the *Ancient Stone Works of Great Britain*, page 362, in referring to American arrow-heads says that "they were made of various sizes, the smaller for boys, and those for men varying in accordance with the purpose to which they were to be applied." Lubbock in *Prehistoric Times*, page 107, figures a diminutive arrow-head from *Tierra del Fuego*, dimensions .6 x .5 inches, of the notched base variety. Local circumstances to a large extent controlled the numerical quantity of small arrow-heads, such as the abundance of ground and other game, the prevalence of bone and horn arrow tips, the tribal or individual skill in the necessary workmanship for their manufacture, the proximity of material

that could be easily and delicately worked, tribal custom, and the difficulty of noticing such small relics when searching. Of the following figures No. 13 is from Abbot's Primitive Industry; No. 16 from Prehistoric Man, Lubbock; Nos. 15 and 16, 8th Arch. Report, Ontario; Nos. 17, Chili; Nos. 18, 19 and 20, Colorado, in my own collection. The latter four are beautifully chipped, the one from Chili being delicately serrated.

[For the use of headless arrows by modern, western Indian children see Grinnell's description of their recreation, chapter 2, Story of the Indian.]

POTS.—Coming now to miniature pots we give the figures of two whole ones. No. 9 is from an ash bed or a village site in Victoria Co., Ontario; No. 19 being from York Co., Ontario, and is reproduced from vol. 5 Arch. Report of Canadian Institute. Both of these pots are roughly made, having very crude ornamentation, and were undoubtedly toys; made probably during the manufacture of larger pots out of a bit of clay moulded around the tip of the finger, leaving in figure 10 the impression of the nail. These pots would answer for the purposes of holding liquid paint just as well as if they were used as toys. The latter idea being the most probable. Fragments of such like pots often occur on village sites in this vicinity.

PIPES.—Diminutive pipes are quite common, and though some doubt attaches itself to them as to whether they were for actual use by adults or toys for children, Boyle in Vol. 5 Arch. Report Canadian Institute, concerning them says: "The small size of some clay pipes has led to the conclusion that they were made as toys for the use of children; occasionally such pipes are not only small, but they are so rude in form as to make it tolerably clear that children themselves were the artificers." He gives two figures, one of which is reproduced here as figure 11, the bowl of which will scarce admit the little finger and the stem hole no larger than a common pin, while "the cavity of the other pipe is large enough to have rendered it, though on a small scale, a man's pipe." Smaller pipes of the same type as figure 11 occur on village sites here, and as a rule are very roughly made, sometimes being unbaked. Larger unbaked pipes lead one to believe that children had attempted to model them after the fashion of their elders, so rough and uneven are the specimens met with. Figure 12, though much larger, is a diminutive specimen of a type of pipe that occurs very frequently in this section and is figured just to show the smallness of the cavity, which will hardly hold a thimblefull of tobacco. It can hardly be classed as a miniature, and may have been a woman's pipe, whose pipes were smaller than the every day pipes of the men, which in their turn again were much smaller than the calumets or council pipes

of state. Small pipes, both trader's clays and native stone pipes, are used to this day by Indian women of the northwest who according to McLean in *Canadian Savage Folk*, page 270, "had small and common pipes," and page 193, "allowed their children to have an occasional smoke." Though on another page, when speaking of eastern forms of Canadian aboriginal pipes, says that "Tiny pipes of imperfect manufacture have been found, evidently the work of children, which may have been used as toys." Page 267.

BEADS AND RINGS.—Minute beads and rings of aboriginal manufacture are very rare, for two reasons; the first being that the amount of extreme delicacy required to make them was not possessed by every one with the, to us, clumsy tools at their disposal, and secondly, that on account of their extreme small size they elude the most vigilant search, easily slipping through the ordinary sieve used in examining ash heaps. Those rings that have come under my personal notice have been made by enlarging the perforations in small soapstone discs to their full capacity. Dimensions about one-third or less of an inch in diameter, and about one line in thickness. Dawson figures a shell bead of one-fifth of an inch in diameter,—see *Fossil Man*, page 141—which is smaller than the ones in this vicinity, the average diameter of which vary about one-half inch. These tiny shell beads would undoubtedly be used in the finer sorts of wampum belts, and together with the little rings could be reserved for braiding or threading in the locks of hair that the Indians wore on each side of the face, as is done by northwestern tribes, who always reserve the best bead, etc., for this style of ornamentation. Figure 21 is a shell bead from Dawson's *Fossil Man*. Figure 22 is a soapstone from this locality.

What we want in regard to these diminutive relics is more statistics; more definite information and detail as to localities in which they are found, whether they occur in adults or children's graves, or are they prevalent in ash beds, or on village sites; with what other relics are they associated, or if they are surface finds? and then we can form some ideas as to their origin and uses.

Those figured from this locality are all from village sites, showing no traces of connection with Europeans. All these figures are the natural size of the relics. Nos. 1 to 5, 9 to 12 and 15 to 22, are deposited in the Ontario Archæological Museum, Toronto.

Here it may be well to notice the practical education of children which prevails among the aboriginals. The following extract is taken from that interesting and complete work on "Women's Share in Primitive Culture," by O. T. Mason,

see page 208, who says: "The education of the aboriginal maiden was of the most practical character. You have only to look in the great museums to find among savage women's handiwork innumerable examples of tiny pieces of basketry, pottery, bread, or weaving (miniatures,) labeled 'Children's Work.' In the industrial schools of the times the little hands learned dexterity." These objects referred to can not be classed as toys but as objects of education, and thus have their special use, differing again from the tiny baskets, moccasins, models of canoes, small birch bark ornamented objects, etc., which are made for the purposes of sale or barter by the modern Canadian Indians, which "trade" has only sprung up, it is needless to say, in late years and is somewhat similar to that fashion of the Esquimaux of making models of their implements and utensils for the same purpose which many writers mention, and in fact nearly every museum in the land has some of such articles. Perhaps Murdock comes nearest the mark when describing the juvenile implements used by the Esquimaux children at Point Barrow, Alaska, (see Eth. Report of 1887-88,) when he says: "We sometime saw the children playing with little models of the implements and utensils used by their parents. Perhaps the commonest thing of this sort is the boys' bow. As soon as a boy is able to walk, his father makes him a little bow suited to his strength, with blunt arrows with which he plays with the other boys shooting at marks. We also saw children playing with little drums, and one man had made his little boy an elaborate *kā moti* about four feet long. In the collection are a number of miniature implements, spears, etc., some of which have been already described, which were perhaps intended as playthings for children; as, however, they were all newly made it is possible they were merely intended to catch the fancy of the strangers."

EDITORIAL.

LATE ACCESSIONS TO MUSEUMS

THE HASKELL MUSEUM.

The latest accessions to Haskell Museum represent three fields of excavation, two of which were worked by the Egypt Exploration Fund, and one by the Egyptian Research Account. Some of the results are republished from the *Biblical World*. The materials acquired are almost solely from the oldest period—the Old Empire, at least 3000 to 2500 B.C., and possibly 1000 years older.

El Kab has long been known by its great monument, the huge square of the town wall, which covers, with its strange curved brickwork, a circuit of nearly two miles. The diagonals of this square point N. E. S. W., and the south corner has been cut away by the river. The town stands at the mouth of a great shallow valley, that once drained the high land which is now desert. On north and south this is bounded by low hills of sandstone which draw nearer together as one travels further up the hills. One ridge to the north has been selected for the cemetery of the wealthy men of the eighteenth dynasty. The small temple which lies outside the eastern gate was dug out and planned, as was also the small temple of Thothmes III, further to the north, which has only been destroyed within this century. Far out, up the watercourse, near the temple of Amenhotep III, search was made for the earlier temple, which must have preceded that now standing.

This place had been already explored during the last three years by Mr. Somers Clarke and Mr. J. J. Taylor, and the present work is an extension of their researches, which they have cordially and considerably assisted in means as well as in active operations. Such an opportunity of joint work was more desirable after the large cost of the Ramesseum work last year.

The excavations of the Egyptian Research Account at El Kab were under the charge of Mr. J. E. Quibell. The most notable accessions from Mr. Quibell's work on this place are the stone vessels, etc., in the top row in Fig. 1.* At the extreme right of this row is a beautiful alabaster so-called "table," upon which the rich and noble were accustomed to eat. The splendid alabaster dishes on each side of the statues are $13\frac{1}{4}$ in. across, cut to a translucent thinness; the nicked dish on the left side is

*See Frontispiece.

streaked red and white stone, cut to the thinness of ordinary window glass. The four bowls at the left end are of steel-hard diorite, beautifully veined, and cut so thin as to be translucent, a marvelous achievement with such intractable material. These vessels are all of the old empire, and mostly of the IVth dynasty; they are, therefore, at least 5000 years old.

The coffin [Fig. 1] is that of the Lady Mery, of royal birth, and "Priestess of Hathor." It is of sycamore wood, put together piecemeal. Owing to the scarcity of wood in ancient Egypt, it was a difficult matter to work out a clear plank, and it was usu-



FIG 2—PAINTED BOARD.

ally necessary to make such a plank out of pieces put together with dowel pins, or a mortise and tenon. These may be seen in the illustration, in the side of the coffin. The corners were skillfully mitred, drilled and lashed together with thongs. All cracks were then filled, the surface stuccoed and smoothed and the inscription and painting added. On the inside, these consist of mortuary furniture, like necklaces and ointment jars; on the outside a mortuary prayer down the center of the lid and along the sides and ends. At the head (the right-hand end), on the deceased lady's left, were painted a pair of eyes, by which she looked forth on the world she had left. The coffin is of the fifth dynasty, at a minimum nearly 3000 years B.C.

Along with this coffin was found also the painted board in the middle of Fig. 1, and more in detail in Fig. 2. It was customary from the Old Empire (fourth to sixth dynasties) on, to place with the mummy models, often exquisitely rendered, representing in miniature the servants of the deceased, with the intention that they should serve him in the hereafter, as they had

done in this world. This was accomplished by means of magic pronounced over them. This painted board is intended to take the place of these miniatures; the servants carry baskets of provisions or jars suspended on yokes; on the right is a Nile boat with swelling sail, the pilot, with his sounding-pole, standing in the bow, just as at the present day, to look out for shoals, while the helmsman astern is operating the double rudder or steering oar. Two tame monkeys have climbed into the rigging, and one is perched comfortably at the masthead. At the left is another boat propelled by paddles. The whole forms a very living Nile scene 5000 years ago.

The two statues in Fig. 1, reproduced on a larger scale in Fig. 3, are such as have come to be called Ka-statues. The Egyptians believe that for the survival of a person after death there must be some material substance that should connect the deceased's double with the world of real and tangible things; hence the embalment of the body, that it might serve as this link, to which the surviving double of the dead might still attach itself, just as it had done while the body lived. But lest the embalmed body should at some time perish, and the double with it, they finally made what we may call "false bodies" of stone; in other words, imperishable stone portrait statues of the dead which they deposited in the tomb, and to one of these the double might attach itself and live on indefinitely. This was the great motive which, already, in prehistoric times, developed portrait sculpture to a remarkable degree, and in the earliest historic period created portrait statues which even classical archaeologists affirm have never been sur-



FIG. 3—EGYPTIAN NOBLEMAN AND WIFE.

passed, even in the present day. Such were the two figures of our illustration.

The statues are those of a ruler of the district, named Nenkeftka; who was "prince of the southern town of the Oryx," and "royal priest;" his wife was named Neferseshems. The man is represented in the conventional posture with both arms hanging straight down, but not with left foot thrust forward, as usual. He wears the stiff apron with triangular front, a curled wig covering the ears, and a broad necklace. His face is too abraded to note its expression, but the contour of the throat and chin is firm and beautiful. His wife stands with her right arm thrown affectionately across her husband's shoulder, and her left hand across her breast. She wears the prevailing garment of women in the Old and Middle Empire, a long, closely fitting robe, supported by straps over the shoulders, divided in a V at the breast and reaching almost to the ankles; about her neck is a necklace, and the wig is long and straight, covering the ears. The expression of her face is winning and tells of good natured sufferance. This expression is, of course, heightened by the color, which was always added to such statues with very vivacious effect, especially when the eyes were of inlaid crystal, as in the larger statues. The carnation, or flesh tint, of the lady is a light yellow; that of the man, a dark brown. The same difference is sometimes found on Greek vases.

ACCESSIONS TO AMERICAN MUSEUM OF NATURAL HISTORY.

Stone implements from Maryland, chipped and grooved axe, presented by Capt. Albert Keen.

Brazil arrows from Menduruco Indians.

Antiquities from Mexico, Tahauntepec, etc., gift of Duc de Loubat. Collected by Dr. Edward Seler.

Over sixty cases from Bolivia, collected by Bandelier.

Over 125 cases collected by Dr. Franz Boas and H. J. Smith. Collected in British Columbia in 1897.

Over 125 plates casts of faces of Haidas Tsimpshans Nootkas, Bella-Bellas, Shoos-waps. Four photos were taken of each face: two profiles, full face and quarter face. Nine different linguistic stocks are represented.

A cast of "Turtle" of Quirigua, by Alfred Maudsley.

Casts of faces of Iroquois, by Casper Mayer, with two photographs of the same.

Fine Chinese collection, Chinese doctor's prescription, photographs of Chinese Joss house, by S. M. Carey.

ONTARIO ARCHÆOLOGICAL MUSEUM, TORONTO.

The museum contains 16,455 articles, including pipes, bird amulets, fifty banner stones, stone tubes, boat amulets, gorgets,

wampum belts, teeth, bone pipes and pins, rubbing stones, stone chisels, stone axes, scrapers, arrow-heads, spear-heads, fragments of pottery, Indian head dress, stone adzes, net sinkers, Pueblo, Mexican and Canadian pottery, flint implements from Sussex Mills, England, from South Downs; flint flakes from Dordogne caves, celts from Lake dwellings, copper specimens, mainly from Canada, slate knives from Canada, tomahawks of stone and iron, gouges, discoidal stones, Eskimo ornaments, carvings in ivory, glass beads, perforated shells, clay pipes, stone pendants, perforated skull plate, line twisters, spindle wheels, stone bowls from California, Aztec frog idol, Aztec coiled snake, terra cotta human figures from Mexico, jade beads, obsidian arrows, wooden masks that belonged to Chief Crow, 500 copper beads from Rice lake, bow and arrow from New Hebrides, also bears tusks worn as bracelets, cinerary urn from Georgia, silver medals from Mississauga Indians.

The museum represents the local archæology of Canada, also contains representative specimens from many other localities including southern states and Mexico.

THE SMITHSONIAN INSTITUTE.

The Smithsonian Institute has come into possession of the Hallett Phillips collection of Indian implements and antiquities from the Potomac valley. It is reputed the largest collection of its class in the world, and its value is enhanced greatly by the careful arrangement, and record of individual specimens. The collection consists of over 20,000 pieces, principally spear and arrow-heads, stone knives, hammers and scrapers, fragments of pottery, and soapstone utensils. Mr. Phillips made a long study of prehistoric man in the Atlantic tidewater region. In his opinion, Washington was not the first capital on the banks of the Potomac. He believed the site, owing to its great advantage in connection with stone quarries and the river fisheries, was the headquarters of the great Algonquin confederacy. The Phillips collection is said to be the best key in existence to the manners and habits of this vanished race, of which written history gives little information. Mr. Phillips was drowned recently in the Potomac. The collection passed to the custody of the Smithsonian Institute through the generosity of Mr. Thomas Lee, to whom it had been bequeathed.

BERKELEY INSTITUTE.

A valuable addition to the archæological collections of the Berkeley Institute was received recently through the generosity of Mr. D. B. Austin, consisting of about two hundred Indian relics.

The collection is made up of typical specimens of stone im-

plements, containing representations of nearly all the implements known to have been in common use among the American Indians, including the discs and spheres used in their games, and the singular jasper pebbles and shells used in their burial rites. These relics were selected from Mr. Austin's extensive private collection, with special reference to their educational value for young students, and are carefully assorted and labeled for use in the class room. They are mainly from Indian village sites on Long Island, but characteristic types from the south and west are included.

RELICS FROM MATTY ISLAND, IN THE BRITISH MUSEUM.

Fresh surprise has been given to ethnologists by the discovery of an almost unknown race. This people live upon Matty island which was formerly called Tiger island and situated off the coast of Guinea. The island was discovered in 1767, but was visited by Capt. Briton in 1817 and again by Capt. Dolman in 1893. His account of the people and the relics gathered was published by Dr. Van Luschien of Berlin, Germany. The people go absolutely naked and the women wear head dresses of pandamis leaves. The natives are not Melanesians. They are considerably lighter in color and their eyes are like the Chinese, noses narrow, hair black and smooth. It is impossible to arrange them in a correct ethnographical position; it is probable that they are allied to the Micronesians. Their weapons and other implements are entirely original, but a few of them bear resemblance to modern Micronesian specimens. They excel in the making of canoes but use no iron in their construction and nothing whatever but wooden nails. These canoes are constructed with an erection fore and aft.

Their relics consist of the following:

- 1 Foremost in finish and importance is the battle axe with a long shaft of reddish brown wood, with a triangular shaped blade made of the bone of the turtle, placed at the upper end by means of wooden pegs.
2. A long staff, at the upper end edged with shark's teeth, thinned off to a spatulate blade. Next in importance are the knives which are made with spatulate blades edged with shark's teeth lashed only by a fine cord.
3. An important class of weapons are long clubs, the heads terminating in conical knobs.
4. The javelins, with flat barbs on one side and on two sides, some with a single barb and others with two or three barbs.
5. Four pronged spears, probably for fishing, with points barbed.
6. Hatchets with blades of turtle bone with a peculiar curve to the blades.

7. Utensils, bowls and shallow dishes made of wood.

8. The cocoanut scrapers made out of a block of wood and the rod armed with a mussel shell. There are two types of paddles, both types have pointed blades with square cut shoulders and stout cylindrical shaft; one has the blade mortised on, the other is cut from the solid.

A large number of relics were sent to London and sold at auction, a portion of them was purchased by Sir A. W. Franks and presented to the British Museum.

ETHNOLOGICAL NOTES.

THE INFLUENCE OF RACE QUALITIES ON THE BUSINESS OF A COUNTRY.

"Anthropology is destined to revolutionize the political and social sciences as radically as bacteriology has revolutionized the science of medicine." So says M. de Lapouge a French writer and lecturer in an article in the "Journal of Political Economy" published by the University of Chicago, December, 1897.

The application of anthropology to the solution of the problems of social development promises significant results. It furnishes a scientific explanation of the progress of civilization. It shows also the causes which have produced the different types of civilization.

In Europe two ethnic elements predominate which were designated by Linnæus' *Homo Europæus* and *Homo Alpinus*. The first is the tall, light haired, blue eyed, long-headed and long-faced race of which the best type is the Anglo-Saxon and Scandinavian who belong to the Aryan race. They are an ambitious, energetic and courageous people. The second is the short, round-headed brunette race of which the type is found in the Alps and Haute Auvergne, the very region where the Troglodytes formerly dwelt. They are a cautious, unprogressive people, strongly attached to their native abode. In the south of Europe diverse elements are mingled with these two principal races which make a mixed population, classified under the common caption of the Mediterranean type. Add to these races the Semites of Arab origin, in the north of Africa and in the Orient, and again the yellow skin, dark of hair and eye—*dolico-cephalic*; *Homo Asiaticus*,—and we have the different races which have played a role in the social and commercial activities of the world. The distribution of wealth is to be noticed, de Lapouge says, in countries inhabited by the first two races; the former possesses more than its proportionate share of wealth, being concentrated in the lower levels where wealth is more easily secured. The important cities are almost always located in the regions occupied by the

"long-headed" race. In France, Toulon, Marseilles, Montpellier, Paris and Havre; in Germany, Munich; in Austria, Vienna; in Italy, Milan, Florence, Rome and Naples; in Spain, Madrid, Barcelona and Cadiz. The largest cities of India and China are in *dolico-cephalic* regions; in America the greater cities are where English or Spanish with *dolico-cephalic* elements predominate; in Mexico, Peru and the Argentine Republic the indigenous elements who have these traits are the most prosperous. The great cities of Oceanica are the urban settlements of *dolico-cephalic* Aryan population.

This law of the location of the cities in the valleys seems to point to the law of the greater density of populations of all classes, and the natural law of the distribution of wealth. This is a general view.

THE BLACK RACE.

In connection with the book* on "Ancient Peoples" it may be well to quote from Mr. John Fraser who has been studying the languages of Polynesia and discussed the Malayo Polynesian theory. He says: "My explanation of the whole matter is this: the main *officina gentium*, or swarming place, for Oceanica long, long ago was India. The whole extent of that peninsula was at a very early period, probably more than twenty centuries before the Christian era, occupied by a pure black race, which I call Hamites; later on there came into it a Cushite race, also black, but more mixed than Hamites. These two black races gradually spread onward into Farther India, Indonesia, Australia, Melanesia; and the whole of the eastern islands of the Pacific—the Hamites first and the Cushites after them. Traces of these black races are to be found in all of these regions, and often of two races apart, as in Australia and the New Hebrides." There are dwarf blacks in the heart of Africa and negroid blacks in the Phillippines and even in Japan. I ascribe these Cyclopean structures on Ponape island and Easter island to these earliest black settlers, for the black races have shown a liking for the hugeness of architecture everywhere.

The spread of this black race began more than twenty centuries before the Christian era. It was followed by the subsequent flow of Polynesian immigrants, and in more recent centuries of the Christian era a race of Mongolian origin came into Indonesia from the farther peninsula, and drove the Polynesian ancesters from their possessions. The Malayan languages s Polynesian as to its origin, but the language of the Indonesian region and of Samoa and New Zealand are the product of the Aryan Pali language of India and the Dravidic, and spread from original sources in India.†

* See "Ancient Peoples," by Profs. Willis Boughton and G. P. Putnam; 1897.

† See Journal of Polynesian Society for 1896, p. 252.

MYTHS ABOUT THE SERPENT AND THE STARS.

There are many myths concerning the serpent and the woman among the eastern tribes, but it has generally been supposed that they were confined to these. Rev. Father Morice states in the "Transactions of the Canadian Institute," November, 1895, that the Carness, a tribe on the northwest coast, have a myth about a woman who married a serpent and brought forth a brood of serpents. They have also a myth concerning the boys who were pursued by their mother's head, similar to that told by the Cherokees; also a myth concerning three brothers and a sister who were first dogs, then hunters, and afterward were transformed to four stars.

ORION IN NATIVE AMERICAN MYTHS.

The central Eskimo, according to Dr. Boas, have a strange myth about the "Belt of Orion." It is as follows: Three men went bear hunting with a sledge and took a young boy with them, and when they approached the edge of a floe they saw a bear and went in pursuit. The dogs ran fast, but they could get no nearer, and suddenly they observed that the bear was lifted up and the sledge followed. The men ascended higher and higher, and finally they were transformed into stars. The boy became the north star, the men became Orion's belt, and the sledge Orion's sword,

PALEOLITHIC MAN.

Several discoveries have thrown much light upon the paleolithic age. First, there was found the "Galley Hill Skeleton." This was found in a gravel pit in Galley Hill, in Swanscombe, Kent. It was associated with paleolithic implements. The discovery took place several years ago but has been recently made public in a paper contributed to the Geological Society of Great Britain, by Mr. D. T. Newton, F. R. S. The shape of the skull shows marked resemblances to those of Spy Neanderthal and Naulette which are the typical representations of paleolithic man. The testimony of those who discovered it is to the effect that it was found in undisturbed gravel. The skull is of extreme length, and as the bone was soft it may have been subject to posthumous deformation.

HYPNOTISM AMONG THE INDIANS.

Mr. James Mooney, of the Ethnological Bureau, has discovered the prevalence of genuine hypnotism among the Kiowas. This was manifested especially in their dances.

"The hypnotists participating in this dance have genuine influence. All the dancers are without stimulants and are not in

a state of fasting. The actions of the Kiowa hypnotists are much like those of our own hypnotists who perform in public places. They make five passes with their hands and shake eagle feathers before the eyes of the dancers as they pass by. The ethnologist says that although it is not generally known, hypnotism has been practiced by certain Indians for many years. This fact might explain many of the wonderful things described in the reports of early missionaries, who were unable to explain their causes.

"According to the Kiowa custom, when a boy becomes about 16 to 17 years old, he goes away from his camp alone, usually to the mountains, where he fasts and prays for sacred medicine and a guardian spirit to take care of him through life. Several days and nights are spent in this manner, without sleep, and finally the youth is overcome with exhaustion, when he becomes unconscious. During this stage he sees visions and receives instructions from the other world. He usually claims to experience a state of soul transferences similar to those said to be brought about by the East Indian adepts. On returning to his tepee he begins to carry out these occult instructions, and makes for himself the idol or sacred medicine prescribed during that trance. This he ever afterwards wears upon his person. Every young man is expected to do this as a religious duty. Those who claim to have been especially inspired become the dreamers and prophets of the tribes. They frequently go to the mountains, where they repeat their trances, and, as they believe, go up to heaven, visiting the departed dead of the tribe, and bringing back messages to those still living.

In Mr. Mooney's opinion, there is a mystic power claimed by white men which the Indian has not exercised for many years. Hypnotism is not practiced by the Kiowas alone. Among the Indians of the Columbia region of the northwest, hypnotism is employed for curing diseases. The people of this tribe are known as "Shakers," because of their trembling while under hypnotic influence. The ethnologist says he can personally vouch for the genuineness of the hypnotic influence exerted during the ghost dance of the Kiowas. During one of their dances, two women, holding their hands, one on either side, became rigid and fell to the ground as though dead. He has seen a dozen thus prostrated at one time, and twenty others standing by in various stages of ecstasy. He showed the writer several instantaneous photographs of the dance ground. In some, men and women were lying like corpses scattered over the grass; others were waving their arms and various unnatural contortions.

Mr. Mooney has talked with many of those who in this unconscious state claim to have traveled to the other world. From these he has learned their ideas of the life beyond the grave.

This he finds to be pictured as greatly resembling the present world. Dead friends are met, and with them the visitors usually go on an exciting buffalo hunt, and indulge in other sports.

LITERARY NOTES.

The American Journal of Archaeology, which has been edited by Professor Frothingham of Princeton University, will hereafter be edited by Prof. H. Wright of Cambridge, Mass. The second series commenced with January, 1898.

Monumental Records is the name of a new journal, the first number of which has just appeared in New York City.

Prof James Legge, D. D., L. L. D., whose contributions on "China and its Religions" are so well known, died in London at the age of 82.

Momsen, the distinguished historian, recently celebrated his 80th birthday.

Renouf, the celebrated Egyptologist, has nearly completed his translations of the Book of the Dead. The work will need to be finished by some other hand.

Theophilus G. Pinches has an article on "Certain Inscriptions and Records," referring to Babylonia, Elim, with copies of tablets in the *Journal of the Transactions of Victoria Institute*.

Clermont Ganneau has notes on the "Seal found on Ophel and on the Siloam Text," in the *Palestine Exploration Fund Quarterly*.

Prof. J. H. Breasted, of the University of Chicago, is writing a translation of the "Hieroglyphic Inscriptions on the Monuments," which he hopes to publish after a time.

Prof. C. P. Tiele has a book on the "Elements of the Science of Religion."

Prof. S. R. Driver's "Introduction to the Literature of the Old Testament" has reached the sixth edition.

Prof J. F. McCurdy is writing on "Light on Scripture Texts from Recent Discoveries," etc., in *Homiletic Review*.

A. H. Sayce has an article on "The Limitations of Archaeology as a Substitute for Old Testament History," in the same review, and another in the *Sunday School Times* on the "Discovery of the Tomb of Menes," the first king of Egypt.

Prof. H. V. Hilprecht discovered at Nippur a room which had once been used as a business archive by a wealthy firm who lived in the time of Artaxerxes and Darius; 464 to 405 B. C. Tablets were found which furnish information concerning the cultivation of ground and works for irrigating the fields, and a faithful picture of the life in Babylon at the time of Ezra.

The history of the Hebrew alphabet is being studied in connection with the Siloam Inscription. The date of the inscription

has been discussed by Conder, Davies, and others. The form of the letters is supposed to furnish a key to its age. One letter has received new light; it is supposed to have the shape of a fish-spear with the cord attached. Other letters viz: A, E and G are known to have been originally pictures of familiar objects, such as the horns of an ox, the roofs of a house, the bars of a window, and the neck of a camel. All show they were invented by a pastoral people, and probably one that dwelt in the wilderness rather than by the sea, for no letter represents a ship.

Mr. Wm. Niven has been exploring in Mexico. He discovered at the depth of six feet a round diorite dish, a small statue representing a kneeling priest in a modern looking costume, a knitting needle, pearl ornaments, jade beads and knives. It is a question whether they can be called pre-Columbian.

The Biblical World is working the field of Biblical and Christian archæology very thoroughly, and is full of excellent illustrations.

Rev. Dr. Patton, of Chicago, has consented to act as associate editor to THE AMERICAN ANTIQUARIAN, taking the department of Christian Archæology. Prof. C. Johnston, of Johns Hopkins University, will also take the department of Assyriology.

Books of special interest on comparative mythology and the archæology of the far east are appearing in large numbers.

Prof. William Z. Ripley, lecturer on anthropo-geography at Columbia University, has published several very valuable articles on the "Racial Geography of Europe," in the *Popular Science Monthly*. This valuable magazine always has some valuable notes on archæology and ethnology. These articles are fully illustrated and are very instructive. The January number has some excellent remarks on the morals, or rather the lack of moral training, in the home, which results in many crimes.

Rev. Dr. W. H. Ward, editor of the Independent, has a very interesting illustrated article in the American Journal of Semitic Languages and Literature for January, 1898, on "Bel and the Dragon:

"The dragon in Oriental symbols, especially in the Babylonian, Chaldean and the Assyrian, which are very similar to one another and very different from the Egyptian, Hindu and American, assumes the shape of a four-footed animal, furnished with feathers, wings and claws, and is sometimes a male and sometimes a female. It is rarely a serpent though in the Williams cylinder* it assumes the shape of a serpent with a feather head and a horned nose, exactly as it does in America. This is very suggestive of pre-historic migration toward America at a date as early as 3000 B. C., for after that date the dragon assumes the shape of the four-footed creature. The symbol may have been slow in its passage, and so the date of its reaching this continent is uncertain and the route is not known. Bel is generally represented as a king, furnished with a royal cap and horns; and sometimes

*A cylinder brought to this country by Dr. Williams, a missionary in Mardin, Turkey, now belonging to his nephew, F. Wells Williams, New Haven, described by Dr. Ward in the *Bibliotheca Sacra*, in 1881, and used by Mr. A. H. Sayce in *Chaldean Genesis*, p. 90.

as a goddess standing upon the shoulders of the dragoon and between its wings; and sometimes as a god seated in a four-wheeled chariot, but always victorious. This shows a very early use of wheels or wagons, and is interesting in connection with the discovery of a wheeled toy by Charney, in Mexico. The "trident" is in the hands of Bel in nearly all of the seals, but the staff and arrows each have three prongs. The circle appears in only one of the seals, the one owned by Mr. R. I. Williams, of Utica, belonging to 700 or 800 B. C. In one seal there is a double thunderbolt, each of them having three prongs, a sun circle, five crescents and a lightning symbols.

BOOK REVIEWS.

LIGHT FROM EGYPT. By Rev. J. N. Fradenburgh, D. D. Curtis & Jennings, Cincinnati: Heaton & Mains, New York, 1897.

Mr. Fradenburgh, the author of this book, is engaged in an excellent work. He has already written six books concerning the Bible as illustrated by the monuments, the great religions of the Orient, and the Heroes and Heroines of the East: all of them from the archaeological standpoint. He avoids controversy with the "higher critics" but plainly shows that the evidence of archæology is upon the other side. This book, like all the others, is finely illustrated and nicely printed.

PILGRIM FATHERS OF NEW ENGLAND AND THEIR SUCCESSORS.
By John Brown, D. D.; with an introduction by A. E. Dunning, D. D. [Illustrated]; Fourth Edition: Fleming H. Revell Company, New York and Chicago.

This history of the Pilgrim Fathers has been written with a view of showing their privations and sacrifices which they endured for the sake of carrying out their religious principles and establishing themselves in the new continent.

That which most interests us is the description given of the Indians* with whom they came in contact. It appears that there were representatives of many tribes in this vicinity, and that all united in giving welcome to the strangers. The settlers were naturally haunted by vague anxieties as to the sort of neighbors they might have. Events soon showed that their fears were groundless.

One morning, toward the end of March, a solitary Indian walked down the main street and came towards them. Save for the fringed leathern girdle about his loins, he was naked. "He had straight black hair, short in front and long behind,

*These Indians belonged to the Algonquin stock, and were mere bands or tribes of the great family which occupied the whole of New England, but were allied to the Delawares and Powhatans on the Atlantic coast, and to the Chippewas, Ottawas, Illinois and Miamis of the west. The Bible, which Rev. John Eliot wrote for the same Indians, is their chief monument, for they left very few earthworks, and their relics have been lost and cannot well be identified. Their language has passed away and only a few of their myths survive.

The bands on their faces may have been the signs of the rank which they held in their secret societies, the same or similar to those which were painted on the faces of the Ojibwas, who had been initiated into the "Mide mysteries."

with no beard. His only weapon was a bow and two arrows." Of a good presence he advanced boldly, and to their surprise, addressed them in English, and bade them welcome. He told them his name was Samoset, that he did not belong to that neighborhood, but was the sachem, or chief, of Monhegan, an island on the coast between the Kennebec and Penobscot rivers, where, from the men on fishing vessels, he had learned what English he knew. He informed them that the original inhabitants had all been swept away by a plague; their nearest neighbors to the west were Massasoit's people, and those to the east were the Mascotts. The next day he returned, bringing with him "five tall, heavily built Indians. Their faces were painted, some with a wide band five fingers broad, from forehead to chin; others were striped and colored in various styles. Each had a deer skin hung on his shoulder and a long hose of deer skin extending upwards and meeting at the leathern girdle." The following Thursday Samoset reappeared, bringing with him another Indian, who proved to be a valuable friend to the settlers. This was Tisquantum, or Squanto, the only man left of the Patuxet tribe that once lived at Plymouth. He announced that Massasoit, the great sachem of the confederate tribes, of Pokanoket, was at hand with his warriors. Within the space of an hour Massasoit appeared with his sixty braves on a hill. He presented much the same appearance as his attendants, save that he was distinguished by a great necklace of white bone beads, and that he carried in his bosom a long knife suspended by a cord; his face was painted a dull red, while those of his attendants were painted, some black, some red, others yellow or white, laid on in crosses or curious figures. Some were clad in the skins of wild animals, others were naked, and all were tall and powerfully built.

Early in 1622, the chief of the Narragansett Indians, Canonius, sent a messenger, with a sheaf of arrows tied with a rattlesnake skin, which was interpreted as a declaration of war. Governor Bradford sent the skin back stuffed with shot and powder, accompanied with a defiant message. The following March news reached Plymouth that Massasoit lay dangerously ill at Sowams. Winslow visited him, and found his wigwam filled with people, and the pow-wows in the midst of charms and incantations making such hellish noise as distempered those that were well. It was then made known that the Neponset Indians had resolved on a general massacre, notwithstanding the fact that the pilgrims had entered into a league with the seven tribes south and west of Plymouth. Miles Standish was sent out to attack the Neponsets.

The establishment of settlements, in the Connecticut valley, had the result of bringing the English into serious conflict with the Indians. This new plantation was really an outpost projecting into the territory of a powerful and warlike tribe, of which Sassacus was the chief sachem. The Connecticut towns

were kept in a perpetual state of alarm. The Pequots attacked Weathersfield, and killed ten men. The Indians on Block island murdered John Oldham and seized his vessel. One moonlight night in May, they made for the Pequot stronghold. This was an entrenched fort, or walled village, containing 700 Pequots, and girdled by an earthen rampart three feet high, and a palisade twelve feet high, made of sturdy saplings set firm and deep in the ground. At opposite ends were two openings, barely large enough to let a man pass through, and within this enclosure of two or three acres were the crowded wigwams. A little before daybreak both entrances were occupied, and the place taken by complete surprise. Of 700 Pequots only five escaped with their lives. The rest of the tribe submitted and were divided between the Mohegans and the Narragansetts. Never again until the time of King Phillip's war, did the Indian dare to lift his hand against the white man.

NIPPUR, OR EXPLORATIONS AND ADVENTURES ON THE EUPHRATES. By John P. Peters, Ph. D., Sc. D. D. D. G. P. Putnam's Sons, New York and London, 1898.

Two sumptuous volumes contain Doctor Peter's report of the exploration to Nippur. The first volume contains a description of the journey to Babylon and the impressions received; First, from his visit at Constantinople, the City of Zenobia, the Roman frontier, Ctesiphon: the places described by Xenophon, also Bagdad, and the mound of Babel, called Birs Nimrud, a representation of which is given in a plate.

Another plate represents a deep trench on Tablet Hill, showing constructions of Xerxes time at the top, and remains of 2000 B. C. at the bottom.

The first campaign resulted in failure. Nippur was chosen as the site for excavation. It was supposed, by some of the party, that it contained only remains of the Sassanian period and was not the site of an ancient city. Difficulties arose with the natives. The excavations had not proved anything as to the antiquity of the city. The main value of the exploration had been to show the great number of ruins which were scattered along the valley of the Euphrates, and the identifying again of the localities known to history, the ruins of Ctesiphon, the ancient Borsippa, the Ziggurat of Bel Merodach, and to show the striking correspondence between the condition of Birs Nimrud, as described by Nebuchadnezzar, which was "the house of seven divisions of heaven and earth," and that of the Tower of Babel as described in the scriptures.

Fortunately the exploration was continued through the generosity of Mr. E. W. Clark, who was the originator of the expedition.

The latter part of the second volume contains the description of the successful campaign. This volume is illustrated by

a number of plates; one of them representing the walls of the houses of the last reconstruction: another, Greek terra cotta heads, figurines; another, showing the excavations and burned rooms of near about 2500 B.C.; also ancient tablet of a king of Babylon, of 1254 B. C.

The most interesting objects brought out, are those which represent the "copper age." These are exhibited in the plates which are bound in with the appendix, along with representations of blocks containing cuneiform inscriptions, and other objects representing elephants, lions, figures of Bel tis, and the god Bel.

One result of the expedition was to change the date of the ancient civilization of Chaldæa over 1000 years. It is claimed that it began about 4000 B. C. Another result was that a third expedition was projected under the lead of Mr. Haynes. In the spring Dr. Pepper took the matter up, and the money was raised. Mr. Clark was the sponsor for the undertaking. These two volumes, so beautifully published by G. P. Putnam's Sons, are to be followed by a series which is being prepared under the auspices of the University of Pennsylvania, and to be published in Philadelphia. They will undoubtedly go into libraries along with Layard's Nineveh, Smith's Chaldæa, and the many other volumes which have proved so valuable in bringing out the strange facts in reference to ancient civilization in the east.

THE NATIVE RACES OF NORTH AMERICA. Edited by W. H. Withrow, D. D., F. R. S. C. William Briggs, Toronto, 1895.

THE SEMINOLES OF FLORIDA. By Minnie Moore Willson. American Printing House, Philadelphia, 1896.

These two books bring to mind a very important fact in reference to the North American Indians. They show that so far from being exterminated, a large number of the tribes are settling down to a civilization which is both peculiar to themselves and is likely to be permanent. What the effect will be on the future history of our nation is now uncertain.

If we take the history of the European continent in connection with prehistoric races, we shall find many of these races still surviving, but generally situated among the mountains, and are unprogressive. The same will be the case in America, but with this difference, that the tribes will be segregated in the midst of the white people, and will form permanent eddies in the large stream of national progress. It is important to know what kind of civilization they are reaching.

The descriptions of the Indians in Canada and in Florida are in point. Notwithstanding the fur trade in the one case, and the Seminole war and flight to the swamps, christian missions have resulted in changing the characteristics of the Indians in both regions. The present condition of the Semi-

nolés is that of a partially civilized and christianized people. The Indian missions in the northwest territory, and the region of Hudson Bay, have had a tendency to civilize the people of that region; still the wigwams, the birch bark canoes, and the blanket Indians, remain at the north, while at the south, many of the women are dressed in clothes like white women. The pictures in these two books show the contrast in the external conditions, and yet the testimony of the authors is to the effect that wherever missions have been established, native ferocity has given place to a peaceable and passive condition. Innocence and simplicity have appeared where cruelty, treachery and degradation existed before.

The book by Mrs. Willson shows how a people, that have been wronged, may ultimately settle down to a quiet life, remote from civilization and its vices, and preserve the best qualities. This is also the lesson learned from the book of Dr. Withrow. Isolation from the white man has been their salvation. They are far from being exterminated and are developing a civilization of their own. The tribes that are now in contact with white people, such as the Tsimshians in the northwest, and the Ojibwas of Lake Superior, are disappearing, and their villages decreasing in number. If they survive at all, it will be through the influence of those who have gone into their midst to elevate them and christianize them, rather than that of the men who have gone to prey upon them, and make them the victims of their lust and avarice.

THE WESTWARD MOVEMENT.—THE COLONIES AND THE REPUBLIC WEST OF THE ALLEGHANIES, 1763-1798. By Justin Winsor. [Illustrated]; Houghton, Mifflin & Co., New York, 1897.

This book, to be fully appreciated, needs to be read with the one which preceded it, which is called the "Mississippi Basin." The westward movement began before the year 1763, which is the date taken by the author in his introductory survey. There were three nations still contending for supremacy in the Mississippi valley—the French, Spanish and English. The French had, as described by Mr. Winsor in his first volume, "Cartier to Frontenac," settled on the St. Lawrence, and sent missionaries, fur traders, *Courier du Bois*, far into the west and northwest. They had also established forts and trading posts at New Orleans, Mobile, and at Bienville, near Natchez; also forts on Lake Pepin and the St. Peters river. The fort by Perrot was in ruins, and the trading post of Le Soeur did not continue long. Celeron had buried his plates at the mouth of the Muskingum and Kenawha. The French had found the carrying places between the Ohio river and the rivers flowing into Lake Erie, and were already navigating these streams. The Spanish claimed all the region west of the Mississippi, and

connected New Mexico with Mexico and Central America. Their missions in New Mexico had been kept back by the revolts of the Pueblo Indians. The English had already established trade with the southern Indians—Chickasaws, Choctaws, Cherokees and Creeks. Coxe's "Carolana" had been written, and all the region between the Ohio river and the Gulf of Mexico was claimed by the English, and named in honor of King Charles. William Penn claimed that the boundary of his possessions reached the border of the Great Lakes. It was even claimed that the Iroquois had sold the region conquered from the Neuters and Hurons, and where they hunted beaver, to the English; as well as the prairie country which they had conquered from the Illinois, and where they hunted buffalo. The French and Indian war, that occurred in 1757, turned the scale in favor of the English.

The "western movement of the population" began after this. It was started from several different centers and followed many different directions, and affected several different nationalities. The Scotch-Irish, who had settled on the borders of Maryland and Virginia, moved westward to the mountains of Tennessee. The Dutch, who settled in Pennsylvania, moved west, and occupied many places along the Ohio in Kentucky, and sought to establish a new state called Transylvania. The people who had settled in New England were represented by Jonathan Carver, who started from Boston in June 1776, and who proceeding by the Green Bay portage, entered the Mississippi and reached the Falls of St. Anthony. He saw the vantage ground of this pivotal region of the northern valley of the Mississippi, and dreamed of a water-way through the lakes to New York, and imagined that the Minnesota river might reveal some portage where a descending stream would carry the trader to the Pacific, on his way to China.

These movements were all on parallels of latitude. The people did not change their climate. There were, however, cross-lines. The French were settled on the Wabash, and on the Illinois at Kaskaskia, and made St. Louis the center. The Virginians, and among them Washington, bought lands on the Ohio. The English established trade among the Chickasaws and Choctaws on the Mississippi river. At the time of the revolution the Tories of Virginia and North Carolina, sought to make a division between the east and the west, by establishing a line of forts on the Potomac, Ohio, Scioto, Sandusky and Detroit rivers, but they were thwarted. After the revolution the settlement in the interior began in good earnest. The colonies were all united and made an amicable settlement of the claims by giving apportionments to Connecticut on the Western Reserve, to Virginia and North Carolina, tracts bound by the Mississippi, Ohio and Tennessee.

Such is a brief summary of the narrative contained in this book. The details are very complete; every locality is brought

into view and many persons unknown to history are mentioned. The conduct of the Indians during this long period is revived; the varied policy of the government is exhibited, the attitude and course of prominent public men is fully described. The events of history are illustrated by maps and engravings so that one has a perfect picture of the interior as it was during its early settlement. This is the crowning work of a life which was devoted to a critical research into the history of our own land. Justin Winsor was the librarian of Harvard College, and lived in Cambridge. He rarely journeyed to the west, but through the study of maps, books and manuscripts, he became familiar with every locality. The scenery of the west is not often described, and the book lacks that peculiar charm which Parkman gave to his histories; but if there is any disputed point, the reader may be sure that this writer has studied the subject thoroughly and critically, and reached a safe conclusion.

The publishers have done all that was possible to make them attractive. It is a great luxury to look at the outside of the volumes, and cast the eye over the maps and plates, and see how elegantly everything has been prepared and published. Houghton, Mifflin & Co. deserve great praise for continuing and finishing this series of elegant histories.

TOTEM TALES: INDIAN STORIES, INDIAN TOLD,—Gathered in the Pacific Northwest by W. S. Phillips. Star Publishing Co., Chicago; 1896.

There is an unspeakable charm to all the stories told by the Indians who are true children of the forests. Any one is fortunate who has the opportunity of hearing them from the lips of the natives—tinged with the peculiar coloring which the native imagination gives to them. The danger is that the white man will give the coloring of his own mind, and fail to represent the simplicity and "naivete" with which they are told. The author is not altogether free from this, but upon the whole has succeeded in securing the tales as they were told, and transferring them to the language of the civilized races. Living, as he did, in the far northwest, and associating with the natives in their homes, he seems to have caught the spirit which pervaded the forests and fills the native mind with superstitions, religious moods, and strange imaginings. It is easy to articulate the words which inanimate creation breathes forth, especially if one has a poetical temperament, but to give utterance to the sentiments and feelings of the Indians themselves, is another thing. When the pine tree speaks as a person—a wise man,—and tells the story which is heard from the water and the rocks, the willows and the ferns, and when, with all his family, it is acquainted with the crazy dance of the winds, the council of the waters, the voice of

the night, and the life of the demons, we hardly know whether the Indian or the white man is telling the story. But when the "thunder bird" shakes his wings and the rain falls, and G'Klobet—the silent one—prepares his canoe and escapes with his family, and Skall-lal takes the disobedient children and turns them to cranes, as a warning to others, and the great transformer, Quaw-te-aht, changes the timid boy to a dove who cries "bohoo," and the evil man to a fleeing deer with a stone knife sticking into his foot, we see that we have struck upon the same system which has cropped out in many places among the Haidas, the Kootenays and the tribes farther south. The myths are very similar to those that have been gathered by James Deans, Myron Eells, and Franz Boas. It is a new contribution to the same body of folk-lore, and is valuable to scientific men.

The author has given full play to his imagination, both in the language and the drawings he has made—especially in the latter. The stories were first told to children, and found to be full of charm to them. They were rapidly put together and published by the Star Publishing Company, and seems to be having a rapid sale. They are written in a popular style, and upon the whole are chaste and beautiful, as cleanly as the forests themselves, though the illustrations do not add to the value of the book—certainly not with scientific men—for devils with forked tails have no place in native American mythology.

We commend the book for the poetry and beauty which the writer has been able to put into the word pictures, and which also exist in the native myths.

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NO. 2

HORN RELICS—ONTARIO.

BY G. E. LAIDLAW.

As an all around material for implements, horn, ranks third, being preceded by stone and bone, and followed by wood: ivory being out the question as we can only consider it in regard to Esquimaux needs.

Horn is less durable than bone; thus we find comparatively few articles made from it in localities occupied by the aborigines, and these few specimens are generally recovered from ash heaps, where the dryness of the heap and the alkaline acids of the ashes serve as preventatives of decay. Being of a very porous nature, horn absorbs moisture, and thus quickly decays, while field mice aid the general destruction by gnawing whatever objects of horn they come across. On account of its toughness and non-liability to split, and being capable of taking a good edge, horn was suitable for many uses, such as fleshing, and dressing skins, peeling bark, hacking out charcoal when making troughs, canoes, or wooden mortars, etc., with the aid of fire, though in this latter operation they would only be used as substitutes for stone celts, which are of vastly superior qualities. Besides the above uses, horn could also be used for digging, or agricultural implements, wedges for splitting wood, and other uses as illustrated by the accompanying figures.

Horn relics have not a very great range, either in regard to numbers or variety; not nearly so much as bone, for the bulk of horn material was many times less than the available bone supply; but generally every village site furnishes a few relics—especially when the soil is first turned up by the plow—but if the horn relics are left long on the surface, they disappear more quickly through the action of the weather, than bone relics.

We can divide the relics into two classes—weapons and implements.

Weapons include harpoons, spears, arrow-heads and instruments for inserting into club heads, cassettes [see Fig. 13].

Implements, are the most numerous, and comprise celts, needles or awls, chisels, gouges, flakes or tools for flaking stone, picks, spikes, pipes, arrow straighteners, sinew smoothers and pottery stamps; for all of which horn as a material is perfectly suitable. The larger implements seem to have been made of elk and moose horns, but both deer and caribou were so used. Portions of the beams of smaller horns were very suitable for hafting; one variety of copper knife having a tine for insertion, the blade being driven home, and firmly bound with green hide thongs, which in drying would shrink and bind faster. Other copper tools, such as spikes, narrow chisels and celts, could be hafted in the same manner. Unfortunately none are known to exist in this country. Nor is the Swiss Lake-dweller method of using a horn socket for hafting tools found here.

The modern Canadian aboriginal use of deer horn, is confined principally to horse and dog whip handles, and flesher and scraper handles. The horse whip handles are about 15 or 18 inches long and are made of a tine of elk horn, scraped and polished till they look like ivory, the point being perforated for the attachment of a wrist band, and the opposite end being hollowed to a cup-like socket, having the thongs of "shaganappi" pinned into it. The flesher handles are long pieces of caribou, or elk horn, with the blade fixed adze fashion on a short piece of its tine, at a proper angle for chipping, the flesh from off the dried hides, the blades nowadays being of iron or steel.

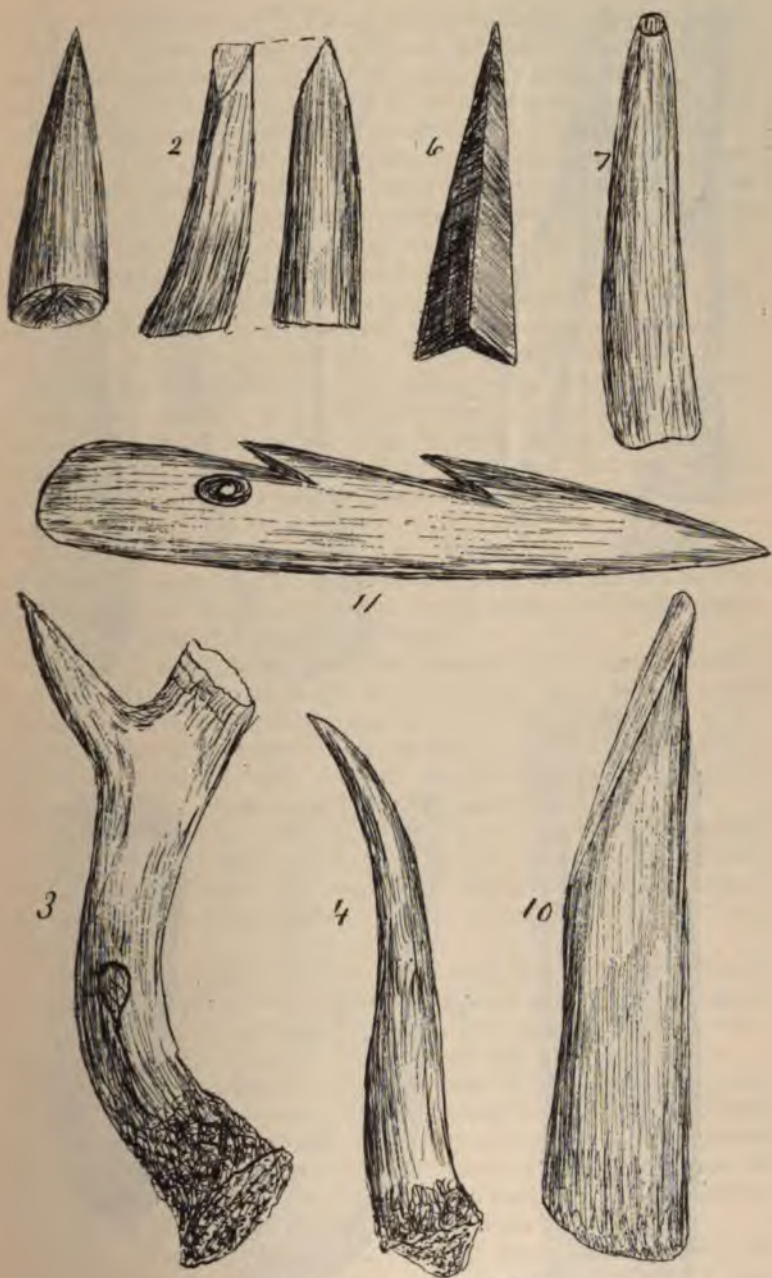
No. 1.—Natural size, $2\frac{1}{2}$ inches long, is a polished conical tool, pointed and having an artificially hollow base; could be used as a drill or punch for working in soft material. The hollow base is not deep enough to admit of a shaft. This form of implement occasionally occurs.

No. 2, is one of those implements like Nos. 5 and 10, which have their surfaces polished and their points ground to a chisel edge. The butts, as a rule, are smoothed so as to admit their being held in the hand. This class of tool occurs very frequently and are generally made from the tines, and can be put to a variety of uses. No. 2 is natural size, 2 inches long; No. 5, $4\frac{1}{2}$ inches long, and No. 10, 5 inches long. No. 5, shows marks of a cutting tool at the butt.

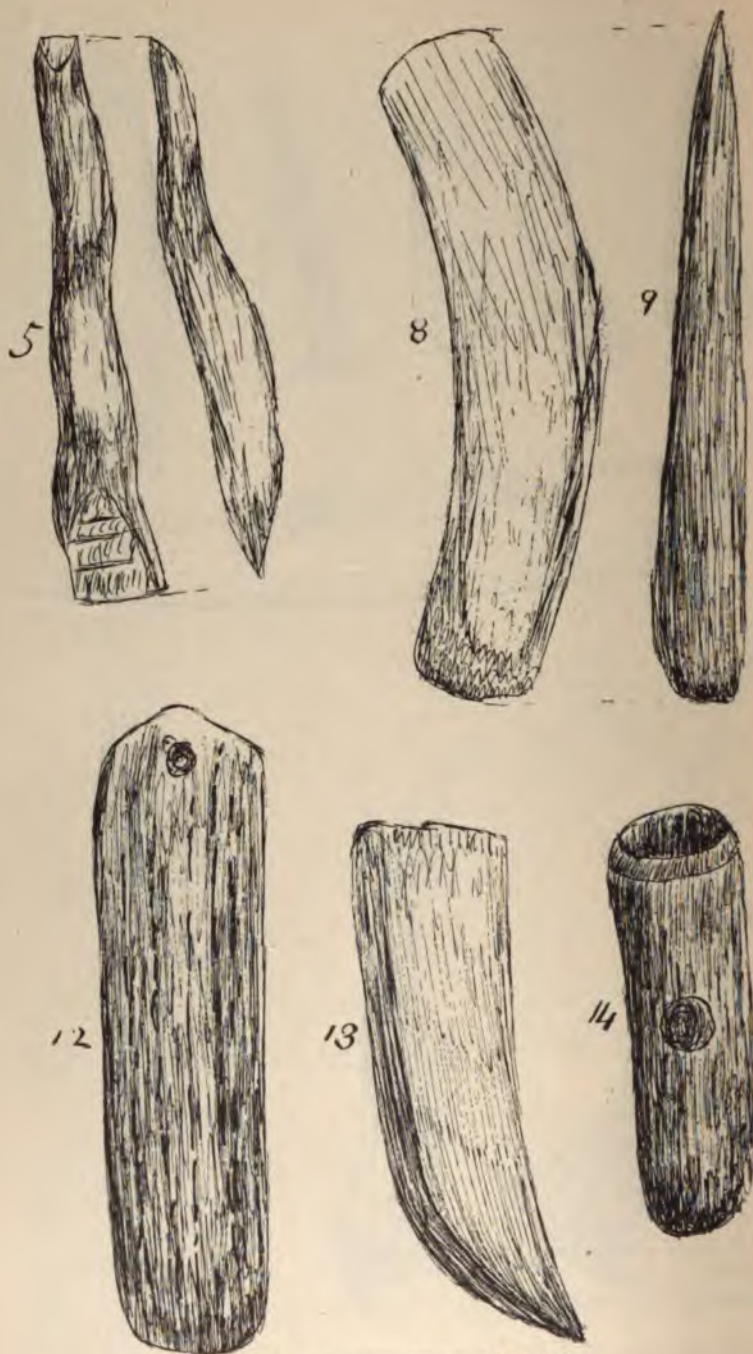
No. 3, is a portion of a deer horn, having the bray antler artificially sharpened to a point, and the brow antler cut off, the remainder of the horn being sawed off just above the spike. This implement is 7 inches long.

No. 4, is a spike horn and has the upper part artificially sharpened and polished. The remainder of the horn is in a natural condition—could be effectively used as an awl or piercer. It is $3\frac{3}{8}$ inches long. These last two implements are comparatively common.

No. 6, is an arrow-head having four flat sides, barbed, hollow



HORN RELICS FROM ONTARIO.



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base for inserting the shaft, lateral ridges well defined, edges even and regular; entire surface worked smooth and polished. It has a quadrilateral transverse section. It occurs frequently; and averages a little over two inches long. These arrow heads, on being shot into anything, would remain there, after pulling the shaft out.

No. 7, is a smoothed and polished implement, with butt smooth, and point truncated, length $3\frac{1}{2}$ inches; could be used as a flat headed punch for flaking stone implements; and as horn is tougher, less brittle, and not so easily split as bone is, this was probably the use of this variety of tool.

Nos. 8, 9, 12, 20—These are celts made out of the heavier kinds of horn, such as elk, etc., and are not worked except on the side, which is ground down flat. Some specimens have a hole in the butt for suspension. The cutting edge is formed similar to that of a stone celt, and these could be put to a large number of uses. No. 8 is $5\frac{1}{2}$ inches long, figure 9, being a side view. No. 12 is a little more than one-half diameter. No. 20, is $9\frac{1}{4}$ inches long, by $2\frac{3}{4}$ inches in greatest width. These are all very much weathered.

No. 11, is a bone harpoon $5\frac{3}{8}$ inches long, $\frac{3}{4}$ broad and 5-16 in thickness, has a wedge-shaped base with perforation for cord, so as to be used with a detachable shaft, *a la* Esquimaux. The surface is smoothed and polished.

No. 13, is an implement called "cassetête" or "break-head." It is curved and pointed like a bird's beak. It is peculiarly suitable for insertion into a club head. Length 6 inches by $\frac{1}{2}$ inch thick and over 1 inch deep. Is spilt from the butt of a horn, and not particularly well worked, the butt being in a natural state of fracture. This same form also occurs in bone.*

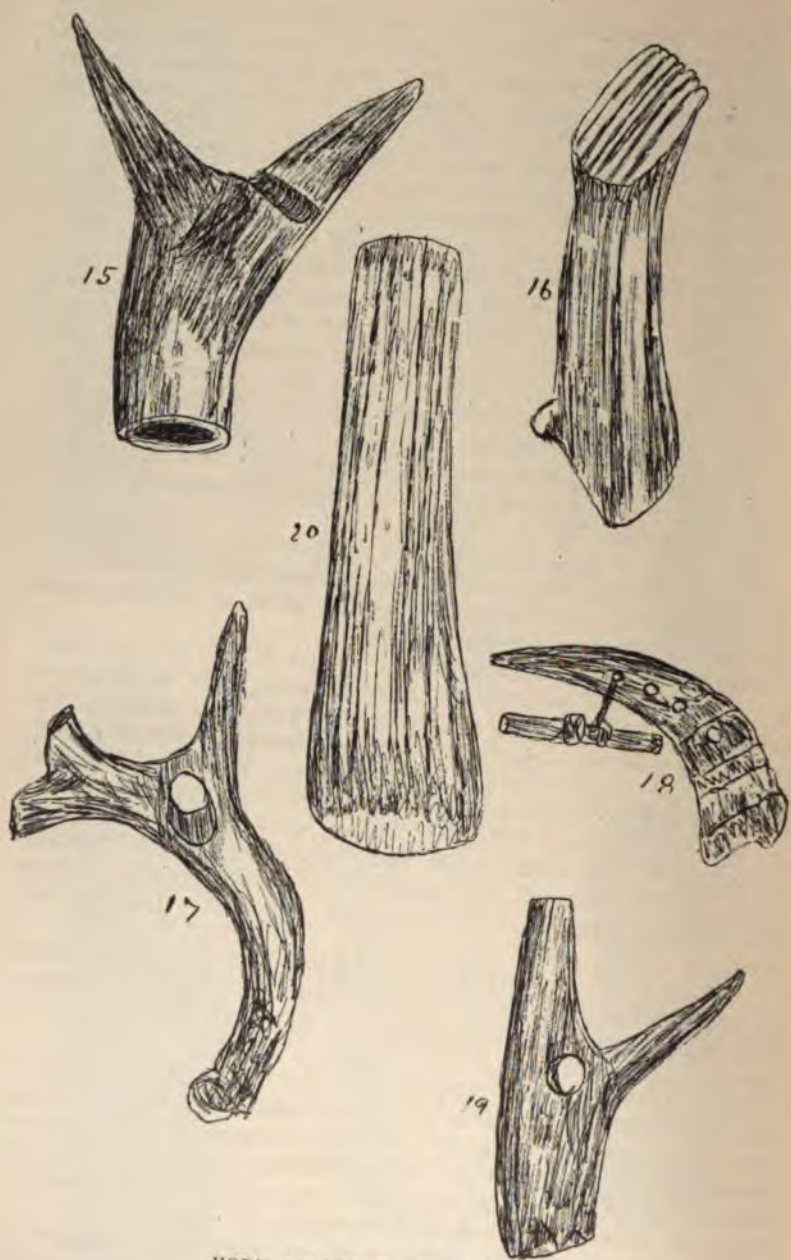
No. 14.—Pipes of horn, like Fig. 14, are extremely rare, and are probably makeshifts. The one figured, has a bowl a little over one inch in depth, the stem hole showing trials of boring. The lip and base have been roughly rounded. Length, $2\frac{1}{2}$ inches.

No. 15, is an implement for smoothing cords, has the notch or groove continued to the opposite side of prong, and the way of using is supposedly by holding the butt in the hand and rubbing up and down a cord in tension with the groove; $\frac{3}{4}$ size.

No. 16, is a pottery stamp, having seven ridges and six grooves which still retain the marks of cutting tools in the bottom of the grooves, while the ridges are smoothly worn. This implement was used in making the pots with patterns of groups of lines at various angles, the pot presumably being supported on the inside when the operation took place before baking; $\frac{3}{4}$ size.

Nos. 17, and 19, represent a class of implements known as arrow straighteners, and as such, exhibit signs of wear on the

*See Primitive Industry.



HORN RELICS FROM ONTARIO.

obliquely made holes. These may have been used as a pinch or grip, or by weighting with stones, either in or out of water, till the inserted shaft retained the desired straightness. Wooden arrow straighteners, on the same principle, are used by the Pacific slope Indians.*

Fig. 18, is here introduced from the Annual Report of the Bureau of Ethnology, 1880-81, for comparison, it being a Walpi Indian goat horn arrow straightener with a "toggle" attached; size $\frac{1}{4}$; size of 17, $\frac{1}{3}$; and of 19, $\frac{1}{2}$.

Figs. 1 to 13 are from this locality, and 14 to 20 are from other places in Ontario, the latter being taken from the Annual Reports of the Ontario Archæological Museum, in which all the originals are deposited, with many other specimens of the same sort from Ontario.

THE ARYAN QUESTION.

BY WILLIS BOUGHTON.

Historic Arya may be defined as that portion of Europe west of the thirtieth meridian, east. While there have been Asiatic Aryans, the region designated has been the seat of Aryan operations for many centuries. Yet the origin of this race is in dispute, and may continue to be so for a generation to come. The data gathered by scholars and specialists may be marshalled in support of the following facts and hypotheses:

1. The first stratum of European population, it is claimed, was of an African type. Various tribes of dark, long-headed people occupied the fairer portions of the continent, and lived in a most primitive style.

2. Then came an epoch, when Asiatic peoples swarmed the plains, and mountain sides of Europe. Migrations may have begun as peaceful expeditions in search of homes, or as alliances with tribes already in possession of rich river valleys. The climate may have been enticing and the semi-tropical animals which roamed where glaciers now flow, may have tempted the hunter; but such expeditions would naturally be followed by warlike undertakings when the males of the conquered inhabitants were exterminated, and the females enslaved. In any case, let the migration have been peaceful or one of conquest, a fusion of races followed. Europe became quite strongly Turanized.

Any such occupation of Europe by Asiatics, was not the work of a generation, or of a century, but may have covered an extended space of time. Nor were the migrating peoples all of a low order of civilization. The remains in Switzerland,

*See Boyle's Primitive Man in Ontario.

Etruria, and elsewhere, would point to the arrival of bands of migrants direct from the homeland of Sumero-Accads, bringing with them a Turanian culture almost unmistakable.

3. The Baltic sea region became peopled by Asiatics, who, in places, fused with the more primitive dark race; and these people seem never to have been displaced. That hardy region of forest, and cultivatable land became a great "area of characterization." Prof. Ripley, suggests scientific processes whereby the type of man may have been modified in stature, and in feature, until the blonde giant with flaxen hair became very common.

Eventually the Baltic sea region, so well endowed for the development of a race of men, would become surcharged with population, and itself be compelled to send out large swarms of emigrants, who search for homes.

4. For three thousand years, this Baltic sea "area of characterization" has been swarming, hordes of migrants pushing toward the south, southwest, and southeast. In semi-historic times, we trace not, only the pathway of the ancestors of the Iranians and the lost tribes of the Yang-tee-Kiang, but a distinct line of migration down the Danube, the Thracians and Phrygians in the van, always crowding away from the center of dispersion. It is needless to speak of the return of the Heraclidæ into the Peloponnesus, the descent of Celts into Italy, the Macedonian conquest of the world, the Roman succession to empire, the flooding of western and southern Europe by Goth and Vandal, Dane and Northman, and the Swedish occupation of Russia. Even to-day, America is studying problems for the peaceful prevention of such wholesale swarming from Germanic lands, as seems to jeopardize our nationality.

5. My hypothesis, then, is that the Baltic sea "area of characterization" is the primitive home of Aryans. It has been the center of Aryan dispersion for thirty centuries or more, and continues to be such. If this hypothesis be allowed, it follows, of course that the Teutons are the Aryans "par excellence."

6. As a corollary, it follows that the Aryans are of European origin. After the ancestors of the Iranians crossed the steppes of Russia and descended the eastern shore of the Caspian, Eastern Europe became Mongolized, and did not feel the influence of the Aryan until after the time of Ivan the Great, five centuries ago.

7. The process of Aryanization may be likened to the onward pressing of a mighty flood out from the Baltic sea region. As the circling wave of humanity met other peoples, they were engulfed and lost, or there was a mingling. In the latter case there resulted a new people, which became purer and purer Aryan, as new blood from the homeland was poured into their veins. A weak injection of Aryan blood was wont to produce a peculiar people, whose racial affinities have been in doubt or

in dispute. Therefore, it is not strange that we find on the borders of early historic Arya such anomalous peoples as the Medes, Pelasgians, and some of the earliest examples of Celt and Slav. The Medes were Aryanized into Persians; the Pelasgians, into Phrygians, Greeks and Latins. Large areas once occupied by Celts, and by Slavs have become Teutonized, though the Celts and the Slavs have never departed from their ancient homes. Mongolized Russia is yet in a semi-Aryan anomalous state.

8. It must be borne in mind that almost all historic peoples are a mixture of two or more elements. Some so-called Aryans are a fusion of the primitive European of the African type with the Asiatic immigrant which supplanted that type, and this amalgamation thoroughly Teutonized; others lack one or the other of the non-Aryan elements. Occasionally will be found a group or community which has not been Teutonized and which is therefore not Aryan.

NOTE.—Ten years ago the writer presented the above hypothesis and a more extended argument in Allen's History of Civilization [Vol. III, Ch. I]. It seems to him that the facts presented by Professor Ripley [January Popular Science Monthly] and by Professor Sergi [January Monist] tend to confirm this hypothesis.

Ohio University, Athens, Feb. 8, 1898.

ORIGIN AND TRADITIONAL HISTORY OF THE IRISH.

BY C. STANILAND WAKE.

If the ancient history of Ireland, the fair land of Erin, the green isle of the west, were accurately known, it would probably be as romantic as that told of any country. The story of its origin, as written in the ancient chronicle, has often been repeated, but it will bear summarizing in the words of Spencer, whose "View of the State of Ireland" forms the first volume of the "Ancient Irish Histories," published at Dublin in 1809. The author of that work, who was high in office in Ireland during the reign of Queen Elizabeth, states that the Irish chronicles speak "first of one Gathelus, the son of Cecrops or Argos, who having married the king of Egypt's daughter, thence sailed with her into Spain and there inhabited." Then of Nemedes and his sons, who coming out of Scythia, peopled Ireland, and inhabited it with his sons 250 years, until he was overcome of the "giants," then in Ireland, and at the last quite banished and rooted out; after whom 200 years the sons of one Dela, being Scythians, arrived there again and possessed the whole land, of which the youngest, called Stanius, in the end made himself monarch. Lastly of the four sons of Milesius, king of Spain, which conquered the land from the Scyth-

ians and inhabited it with Spaniards, and called it after the name of the youngest Hibernus, "Hibernia."

In a note to this statement, Sir James Ware, the antiquary, remarks that the Irish stories have a continued succession of kings of Ireland from Slavius until the conquest in the reign of Henry the Second of England; so that whoever the so-called "Scythians" may have been, they must have occupied Ireland, or a large part of it. Spencer himself was of opinion that the North of Ireland, that is, the province of Ulster, was first settled by the peoples of northern Europe, who "overflowed all Christendom." An early settlement of Scandinavians in the north of Ireland is now generally admitted by antiquarians, and it is consistent with the ethnology of ancient Ireland.

Mr. E. O'Curry, who wrote "On the Manners and Customs of the Ancient Irish," and whose work was edited by Mr. W. K. Sullivan and published in 1873, states that there were two distinct types among the people. One of them was high-statured, fair-skinned, with hair of golden color or red, and blue or gray-blue eyes; while the other was a dark-haired, dark-eyed, pale-skinned, small or medium statured race. The Firbolgs would seem to have belonged to the former type, as to whom O'Curry remarks that they were identical with many tribes in Great Britain, and along the Belgic and Frisian coast. They were undoubtedly of the tall, fair-haired race, which, under various names, occupied the whole of northern Europe, and probably belonged to that branch of it which afterwards, as Angles, overran a large part of the adjoining island, to which they gave the name of England. It is known historically that the present inhabitants of northern Scotland are descended from the Scoti of Ireland, who are identified by some writers with the Skets or Skythians. They first settled in the Hebrides and, then on the mainland not far from Oban, where the burial ground of the ancient "Scottish" kings may yet be seen. Thence they spread throughout the country, which they conquered, giving it the name of Scotland. Red hair is a characteristic of the Scottish Highlanders, and they are descended largely from the golden-haired Irish race, the Scoti of Orosius, whose book was translated into English by no less a personage than King Alfred the Great.

Another version of ancient Irish history is given in "The Chronicle of Ireland, collected by Meredith Hanmar in the year 1571," which says that 750 years after the flood one Gathelus, son of Nealus, a Grecian, went to Egypt in the days of Moses, and there married Scotas, the daughter of King Pharaoh, and remained about ninety-three years. He then left Egypt and went with his people to Numidia, then to Portugal, and afterward to Galitia, where they settled and became so populous that Gathelus took a great number of them to sea and settled in Ireland. He is said not only to have enriched and beautified the Irish language, but also to have taught the

people letters, "sought up their antiquities, and trained their youth in warlike exercises, after the manner of the Grecians and Egyptians from whence he descended." Gathelus, if what is here related of him is true, must have been of a very fair age when he died. But, in reality, the name "Gathelus" stands for a people, and not for a single individual, and their connection with Galitia shows them to have belonged to the same stock as the nation which gave name to Gallia or Gaul, the modern France, so-called from the German Frankish invaders of the country.

Such a conclusion agrees with what is known of the origin of the Milesians, the small, dark-haired people of Ireland. The ancient chronicles are unanimous that the Milesians came from Spain, but Spencer, speaking on the authority of Pomponius Mela, says that the Spaniards who settled in Ireland "were anciently Gauls, and that they brought with them those letters which they had anciently learned in Spain, first into Ireland." O'Curry supposes them to have come from the shores of the Bay of Biscay, between the north of the Loire and Galicia, the name of which shows it to have been inhabited by Gauls. The noted historian of Scotland, George Buchanan, affirms that all the north side of Spain was possessed by Gallic colonies, as though identifying them with the Basques; and he thinks many of the Gallic Spaniards fled to Ireland to escape the exactions of the Romans. If the Basques, and with them the Milesians, could be ascribed of a Phenician origin everything would be plain. The Phenicians, who dwelt on the Syrian sea-board are known to have settled on the coast of Spain, having previously colonized parts of northern Africa, and their associations with Egypt would account for the supposed residence of Gathelus in that country. The Celtic languages have peculiar eastern affinities, which separate them to some extent from other languages belonging to the Aryan stock, and point to an early contact with Phenicia.

The German writer, Lappenberg, whose historical writings are of great value, has an article in Eosch and Gruber's Encyclopedia, on the "History of Ireland down to the Introduction of Christianity," in which he states that Tigernach, who died in 1088, and was the oldest chronicler of Ireland, admitted that all historical movements of the Scoti down to Kimbaoth, prince of Eamain,* in the year 305 before Christ, were unreliable. Lappenberg thinks that the earlier Irish annals were founded on older documents, but that their statements are untrustworthy. He tells us, however, that the name Erin (Eirinn), appears in the Argonautic Expedition (Vol. II, 79), of the pretended Orpheus, and as one of the British islands, named Albion in an alleged work of Aristotetle, "De Mundo." In the

*A curious account of this part of Ireland, under the title of "The Tribes and Customs of Hy-many, commonly called O'Kelly's Country," was published, with a translation by John Donovan, at Dublin in 1843.

ourth century before Christ, the Periplus of Hanno and Pytheas, mention this island, and the latter, according to the assertion of Festus Avienus, mentions also the Hibernians as the people that inhabited it. Lappenberg says the Greeks must have received their knowledge of the island from the Phenicians, although he adds that there is no mention in the Greek and Roman writers of the establishment of Phenician or Carthaginian colonies in Ireland. Nevertheless, the facts that the name of the sun god among the early Irish was the same as among the Phenicians, Baal, or Bel, and that Belsamen was lord of the heavens, is evidence that the two peoples had been in some way connected.

Edmund Campion, who in 1571, wrote a history of Ireland, sets forth the claims over Ireland of the crown of Britain, founded on the supposed Spanish origin of the ancient Irish. They are as follows:

"1. First that the Irish . . . were subjects of the crown of Britaine, before they set foote in Ireland. Thus it appeareth. They dwelt on that side of Spaine, whereof Bayou was then chiefe imperiall citie, and the same then in possession and obedience to Gurguntius 376 years ere Christ was borne, as it was to his successors many a day after, namely to Henry. . . . From this coast and city, now part of Gascoigne came the fleets of those Iberians, who in 60 ships met Gurguntius on the sea, returning from the conquest of Denmarke, to whom they yielded oath and service, sued for dwelling, were by him conducted and planted in Ireland, and became his leige people."

"2. Mac Gil-murrow, king of Ireland, with all his petty princes, lordes, and captaines. summoned to King Arthur's court held in Carlion, an. 519, did accordingly their homage, and attended all the while his great feaste and assembly lasted."

"3. The monarch of Ireland and all other, both reges and reguli for them and for theirs forever, betooke themselves to Henry the second in an. Dom. 1172. . . . This did they with consents and shouts of the people: and King Henry returned without any battle given."

4. "The same time Obrene of Thomond, Oconer of Connaught, Arthur Mac Murrow of Leinster, and all the Irish lords which had been somewhat disordered, renewed their obedience."

Gurguntius, here referred to as monarch of Britain, is probably as fabulous as the famous King Arthur himself. It is true that some of the English chroniclers state that in the year 525 King Arthur landed in Ireland with a large army and defeated King Gilla-Mury, who was taken prisoner, but Sir James Ware declares that there is not the least reference to any such conquest in the native annals. Equally untrustworthy is the statement that Ireland was utterly wasted and subdued by Egfried, king of Northumberland, and afterwards by King Edgar. Ireland suffered enough from actual invasions and internecine

disputes, without adding fictitious disasters. The conquest by Strongbowe, in the reign of Henry II, was attended with the loss of their lands by the native Irish, which, in many places, they recovered again, however, when the country became depopulated through the contests, during the War of the Roses, between the adherents of the houses of York and Lancaster. After the death of the Duke of Clarence, who had endeavored to restore English authority, the provinces of Munster and Connaught were overrun by a chieftain from the west named O'Brien, who devastated the whole country, completely destroying many large towns, and then invaded Leinster, where he was proclaimed King of all Ireland.

Spencer refers to various other "tempests" which disturbed the peace of different parts of Ireland, so much that of Scotland was broken through the jealousies and ambitions of the great highland chiefs. Curiously enough, the latest invasion of Ireland was by the Scots under the leadership of Edward the Bruce, a brother of the renowned Robert the Bruce, in the year 1315. Spencer's account of this invasion gives a vivid picture of the terrible experiences through which Ireland has passed, and of the savagery of warfare during the middle ages. He says that Edward the Bruce with "a power of Scottes and Red-Shankes" and Irish allies entered the English pale, sacked and razed all cities and corporate towns and "rooted out the noble families of the Audlies, Talbots, Tuckets, Chamberlains, Mundevilles, and the Savages out of Ardes." At Dundalke he made himself king, and reigned for one year, until Edward II sent over from England Lord John Birmingham, who encountered Edward the Bruce near Dundalke, overthrew his army, slew him, and chased the Scots to the sea-coast. Notwithstanding, says Spencer, "all the way that they fledde, for very rancor and despight, in their return, they utterly consumed and wasted whatsoever they had before left unspoyled, so as of all townes, castles, forts, bridges and habitations they left not any sticks standing, nor any people remayning: for those few which yet survived fledde further into the English pale that now is. Thus was all that goodly country utterly wasted." Spencer remarks that the English pale was chiefly in the north, from the point of Donluce and beyond unto Dublin; having in its midst Knockfergus, Belfast, Armagh and Carlingford, which were afterwards not counted within it, as the pale in his day stretched no further towards the north than Dundalke.

It would be a great mistake to suppose that the English in Ireland and the native Irish always remained apart. As a fact they freely intermarried, as appears from Hanmar's chronicle, written, as we have seen, in 1571, where it is said that, owing to such intermarriage "there grew among them great alliance and affinity to the furtherance of the language." Spencer mentions that the English who dwelt in Connaught and Munster, and some of them in Leinster and Ulster, were "degenerate,"

and he states that some had "quite shaken off their English and put on Irish, that they might be altogether Irish." Such was the case with the Geraldines and their followers, the Macmahons, Macswynes, and Macshiers, who rebelled against Edward IV, owing to the beheading of Thomas, earl of Desmond; although the Geraldines were originally an Italian family settled in England. The Irish of Spencer's time said that the Macmahons in the north were descended from the Fitz Ursulas, and the Macswynes of Ulster from the English Veres, and that most persons having surnames ending with "an," were of English descent. Spencer explains the fact of so many English families becoming Irish as being due to intermarriage and fosterage. Fosterage was much practiced, and it is not surprising that the ties formed by it became ultimately stronger than those of race. But Ireland itself, like a fond foster mother, has always had great attraction for its inhabitants, to whatever race they belonged, and the future may yet see them forming a homogeneous whole.

TOPINARD ON THE PRIMORDIAL RACES.

It is unnecessary to mention that no primitive type has come down to us. The six or seven so-called primordial races which we assume are only probabilities, induced from those which we have observed to-day, mixed, crossed, married and remarried, ten, twenty or one hundred times perhaps. The races which have approached nearest to the type in question are the prehistoric races,—but which? For lack of others, let us look at those of Europe—the only ones that are at all known. It has been assumed that the men of Chelles, that is to say, of the first Palæolithic Epoch, were of the Neanderthal race. The assumption has not been proven. I am more inclined to believe that the Palæolithic race of Chelles was that which we find later on, small, brown, dolichocephalic, extremely orthognathous, and with microseme orbits, spread through all southern Europe, the isles of the Mediterranean and northern Africa, and which I have called the Troglodyte race of the Lozere, or better; the Mediterranean race. Evidently it came northward, step by step, from Africa subsequent to the Glacial epoch, that is to say, from the country where recently in the south of Tunis enormous quantities of Chellean quaternary instruments have been discovered, and where five or six thousand years before our era the scattered tribes circulated that gave rise to the Egyptians, a race of a type still far removed from what the primitive type must have been.

For us, the type to which the name of the race of Cro-Magon has been given is a crossed race, the result of a mixture of the local Mediterranean race, with the tall blonds who came as conquerors. In the Neolithic Epoch which followed, the number of blonds increased; another race the brachycephalic, was added, which came by the same route. Thereafter the population is divided into groups, differing both in physical characteristics and in civilization. In one place we have the Troglodytes of the Lozere, the most ancient race, a poor and conquered people, who had been forced to take refuge in the least accessible localities. In another, we have the blonds more or less crossed, the makers of the long megalithic monuments. The brachycephalics are scarcely ever seen to predominate at any one point, which may be accounted for by the fact that they practiced cremation. One of the most pronounced of the latter groups is that of the Palafittes of Switzerland, among whom we see the Polished Stone Age pass into the Bronze Age, and whose agriculture and industry are considerably advanced.—*From The Monist for July, 1897.*



SAN FRANCISCO MOUNTAIN.



Courtesy of Santa Fe Railroad.
SCENE IN THE GRAND CANYON.

CLIFF FORTRESSES.

BY STEPHEN D. PEET.

In continuing the description of the cliff-dwellings, and especially of those which are situated at great heights and provided with so many means of defense, it is very natural that we should give to them the name of "Cliff Fortresses."

We use the term not so much to designate a separate class of structures, or to prove that there was any resemblance between them and modern fortresses, as to show the precautions which the Cliff-dwellers took to protect themselves from their enemies. The name is appropriate when applied to those ruins which were situated on the San Juan, and which have been described by the various explorers of that region, and have been called the "Cliff Palace," the "Long House," "Loop-Hole Fort," "Balcony House," "Sandal Cliff-House," all of which were really fortified villages.*

It is also appropriate when applied to the villages which were situated on the summits of the high Mesas in the neighborhood of the Rio Grande, and which were occupied by various tribes when the Spaniards first visited that valley. It is especially appropriate when used in connection with the ruins which have been discovered on the Rio de Chelly and the Rio Verde, Walnut Canyon and the regions north of the San Francisco mountain.

It may be well, for the sake of convenience, to confine the name to those structures which are found on the mesas and in the sides of the cliffs, but have not been occupied since history began, the inhabitants of which are totally unknown. We call them fortresses because some of them were placed above pueblos which were situated in the valleys, and were evidently places of retreat for the Pueblo tribes which made their permanent homes in the valleys, and because they seem to have been constructed with the purpose of securing defense to the people who had been

*Other villages like these were visited by Mr. Louis W. Gunckel and W. K. Moorhead. They are situated in the various box canyons west of the McElmo. Names were given to them which were as fanciful as those mentioned above. Monarch's Cave, Eagle's Nest, Giant's cave, Hawk's Nest Cave, Boulder Castle, Cold Spring Canyon, Ruins in Cottonwood Gulch, Ruins in Allen Canyon, Cliff House A, Cliff House B, Cliff House Nos. 6 and 7, Cliff Dwelling Nos. 11, 12, 13, Ruin Canon—they all have the same characteristics of the cliff houses or cliff builders in the Mancos Canyon, but are generally smaller and more completely ruins. They are mainly situated in the side of the cliff and have walls to protect them from an invading enemy. In a few cases there are separate houses on the summits of the cliffs which have a very modern look, as they are built with square rooms and rectangular doors, the most of them two stories high. Those on the cliffs may possibly have been built after the advent of the white man, though this is a mere conjecture.

driven from the pueblos to the sides of the cliffs and remained there until they were driven altogether from the region.

It has been held by a few explorers that there were no fortresses among the cliff-dwellings or pueblos; that what appear to be such were the "summer homes" of a people who resorted to the valleys for the purpose of cultivating the soil, and who built their houses in the ledges to protect themselves from floods and the assaults of enemies. This opinion is not held by many, but as it is advanced by Mr. C. Mindeleff and other explorers connected with the Ethnological Bureau, and has been published in their reports, we give it here.* The following is the language:

The study of the ruins in Canyon de Chelly has led to the conclusion that the cliff ruins there are generally subordinate structures, connected with and inhabited at the same time as a number of large home villages located on the canyon bottoms, and occupy much the same relation to the latter that Moen-Kepi does to Oraibi, or that Nutria, Pescado and Ojo Caliente do to Zuni, and that they are the 'unctional analogues of the "watch towers" of the San Juan and of Zuni and the brush shelters of Tusayan. In other words, they were horticultural outlooks occupied only during the farming season. It might be expected that the Canyon de Chelly ruins would hardly come within the scheme of the classification with those found in the open country; for here, if any where, we should find corroboration of the old idea that the cliff ruins were the homes and last refuge of a race harassed by powerful enemies, driven to the construction of dwellings in inaccessible cliffs, where a last ineffectual stand was made against their foes; or the more recent theory that they represent an early stage in the development of Pueblo architecture, when the Pueblo builders were few in number and surrounded by numerous enemies. Neither of these theories are in accord with facts. A still later idea is that the cliff-dwellings were used as places of refuge by various pueblo tribes, who, when the occasion of such use was passed, returned to their original homes, or to others constructed like them. This makes plain some of the cliff ruins, but if applicable at all to those in de Chelly, it applies to only a small number of them.

The same author says there are great differences in kind between the great valley pueblos, located without reference to defense, and depending for security on the size and number of their population, of which Zuni and Taos are examples, and the villages which are located on high mesas and projecting tongues of rock; in other words, on defensive sites, where reliance for security was placed on the character of the site occupied, such as the Tusayan villages of to-day.

Doubtless in the early days of Pueblo architecture, small settlements were the rule. Probably these settlements were located in the valleys, on sites most convenient for horticulture, each gens occupying its own village. Incursions by neighboring wild tribes or by hostile neighbors, and constant annoyance and loss at their hands, gradually compelled the removal of these little villages to sites more easily defended, and also forced the segregation of various related gentes into one group or village. At a still later period the same motive compelled a further removal to even more difficult sites. Many villages stopped at this stage. Some were in this stage at the time of the Discovery;—Acoma for example. Finally, whole villages, whose inhabitants spoke the same language, combined to found one larger vil-

*See 16th Annual Report of Bureau of Ethnology, "The Cliff Ruins of Canyon de Chelly," by Cosmos Mindeleff, p. 79-193.



Courtesy of Santa Fe Railroad.

THE HIDDEN TRAIL AMONG THE MOUNTAINS.



CLIFF HOUSE IN WALNUT CANYON.

lage, which depending now on size and numbers for defense, was again located on a site convenient for horticulture. These constitute the large "communal houses," the distinguishing characteristics of which are as follows: Each building consisted of an agglomeration of a great number of small cells, without any larger halls of particularly striking dimensions. All the buildings, except the out-houses or additions, were at least two stories high, and often several stories high. The lower story was entered only from the roof. A dead wall without windows was the only defense. The various stories receded from the bottom to the top, and were reached by ladders.

The estufa, or kiva, often circular in form, but some times placed within square walls, the corners filled in, making them circular inside and square outside, was another important element.

The ruins of de Chelley show unmistakably several periods of occupation extending over considerable time, and each comparatively complete. They fall easily into the classification suggested by Mr. G. Nordenskjöld.*

In the description given by Mr. Mindeleff the following classification has been employed:

1. Old villages on open sites.
2. Home villages on bottom lands.
3. Home villages located for defense.
4. Cliff outlooks or farming shelters.

This classification is, in the main, correct, but it would be better if it could be made to emphasize the fortified character of the third class, namely, the "home villages located for defense," for these are the structures to which we give the name of "Cliff Fortresses." We maintain that they mark a period in the history of all the pueblo tribes. It was probably the same period in which the tribes on the Rio Grande, on the Zuni river and other localities in the interior were compelled to build their villages on the summits of the mesas, a few of which are still occupied, but the majority of them are in ruins. It was a period which preceded the advent of the Spaniards, but was subsequent to the incursions of the wild tribes, such as the Apaches, Comanches and Navajoes, the date of which cannot be determined.

There may have been a period before the incursions of these tribes, and at intervals during the time of their presence, when the people occasionally built houses in the side of the cliffs as summer homes.

This may be true of certain localities which are found west of the Grand Canyon, in Colorado, for there are here what Maj. J. W. Powell calls "haciendas" or agricultural settlements.

It may also be true of certain localities in the valleys of the Gila and Rio Verde, and other streams which furnish rich soils on their borders, but are likely to overflow the lands at certain seasons of the year. It was the custom of the Pueblos, who dwelt on the mesas, to go long distances away, and raise their crops. In such a case they would often build temporary houses

*Mr. Nordenskjöld's classification of the ruins in the Mancos Canyon and Mesa Verde region is as follows: 1. Ruins in the valleys or on the plains or on the plateaus. 2. Ruins in the walls of the canyons, subdivided as follows: (a) Caves inhabited without the erection of any buildings—cave dwellings; (b) cliff-houses or buildings erected in caves.

as their summer homes. But these houses, which were erected on the high points which overlooked the streams, are generally made with one, two, or three rooms, and are scattered here and there, and look like a straggling village. They served the same purpose as the cavate houses which are so numerous in the valley of the Rio Verde and are near the irrigating ditches which are so celebrated in these localities.

The villages on the bottom lands, and the cavate houses in the sides of the cliffs are not to be confounded with the permanent villages on the mesas. Nor are they to be confounded with the cliff-dwellings which are so numerous in the Mancos Canyon and the Canyon de Chelly and other places. We call these "cliff fortresses" to distinguish them from the high houses and the cliff palaces, and the ordinary pueblos. They are villages and have all the conveniences and necessities of the pueblo villages, whether situated on the valleys or on the mesas. Yet the provisions for defense are so conspicuous and so preponderate over the provisions for dwelling places, that we must regard them as "forts" in which the defenders have gathered their families in order to protect them from the incursion of lurking foes. They may be supposed to mark a period in the history of the Pueblo tribes, but a period concerning which little is known.

The history of the Cliff-dwellers is as follows: First, the great communistic house, built after the honey-comb pattern, either on the mesas or in the valleys, furnished with estufas, a lookout tower, and various signal stations on the heights around. Second, the building of the village or fortress in the sides of the cliffs, with the store houses in the rear instead of in the lower apartments, the passageways between the dwellings and the sides of the cliffs, with the estufas on the terraces in front, with towers either at the end or in the central part, and rooms furnished with loop-holes for shooting arrows at the assailants.*

There was a third period in the history of the San Juan valley in which the people were driven from their villages, their clan organization was broken up, and society was disintegrated. Those who remained were compelled to build separate houses high up in the sides of the cliffs, protecting their families as best they could. About the only unity there was to the tribe or clan, consisted in giving the alarm when an enemy came in sight, and having signal stations and towers on all the high points, and cultivating the valleys in bands, whose only safety was found in separation and flight to the so-called "high houses."

A fourth period was that which followed the advent of the

*The same period was marked in other localities by building the pueblos on the summits of the high mesas and protecting them by dead walls around the lower stories. There were localities in which no mesa could be reached and the people were compelled to fortify their villages by enclosing them in a great wall, making passage-ways between the buildings, so giving the village a checker-board fashion but providing a central citadel or tower which served also as a temple, making this the last place of refuge in case of assault and disaster.

Spaniards, in which certain tribes in the west part of the valley seem to have built separate houses and square towers on the edges of the cliffs. At least houses have been discovered and described by certain explorers which are separate from one another and have a very modern look. It is possible that they were erected after the advent of the white man, though there is no record of this. They have been long unoccupied, but are in a fair state of preservation.

It is the middle period which most interests us, for at this time nearly all of the so-called fortresses were erected. These fortresses were not confined to the sides of the cliffs, but were built upon the mesas, and were the permanent villages of the people during the time of invasion. There may have been villages in the valleys, built after the "great house" pattern, good specimens of which are still found in the valley of the Chaco, but the fortresses on the mesas and in the sides of the cliffs were also permanent villages. The summer homes were composed of isolated houses which were scattered among the cliffs, or were built upon the slight elevations, but did not often possess the component parts of village architecture, such as estufas, towers, store houses and tanks, or reservoirs.

The point which we make is that there were fortified villages or fortresses which possessed all the elements of a regular pueblo, and were occupied as permanent abodes, and not as temporary resorts. They were not mere refuges for the people in the time of attack, nor summer homes for an agricultural people. We must regard them as fortresses, or fortified villages, which the defenders built for the purpose of protection from the incursions of lurking foes, into which they gathered their families and their stores of provisions and personal possessions, making their inaccessibility the chief means for defense. They made them strongholds which they occupied permanently. They mark an early period in the history of the people—a period concerning which scarcely anything is known. About the only evidence is that which is found in the peculiar style of architecture and the human remains which have been discovered.

Some have supposed that this condition of affairs was peculiar to certain localities, and was mainly prevalent in the "swarming place" of the Pueblo tribes, namely, the valley of the San Juan, but the evidence is that it was spread over the entire pueblo territory and that all the tribes passed through the same experience. It is probable that the people on the San Juan and its tributaries bore the brunt of the attack of the enemies which came down upon them from the mountains of the north, and were compelled to take refuge in the cliffs. It would seem, however, that there were wild tribes surrounding the entire pueblo territory and that they constantly beset the villages which were on the edges, and first compelled them to fortify their homes,

and afterwards drove them from these outlying fortified posts towards the center of the territory.

It will be understood that there were among the Cliff-dwellers and Pueblos various methods of defending their villages, each one of which was adapted to the particular region in which they were placed. These may be classified as follows:

I. In the region where the Cave-dwellers had their homes the main dependence was upon the "lookout," or, in other words upon the view furnished from their homes in the cliffs.

There are many specimens of this kind of fortress, some of which may be found on the summits of the San Francisco mountains and in the midst of the craters of the extinct volcanoes.



ISOLATED CLIFF NEAR FLAGSTAFF.

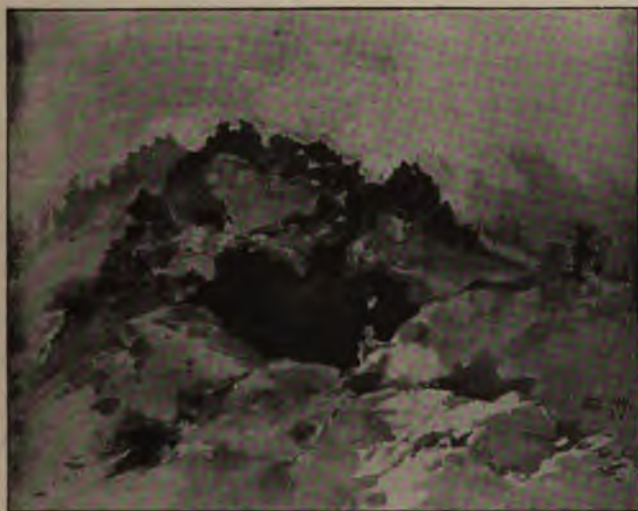
Others are found in the midst of the Potrereros and high isolated mesas which are situated in the valley of the Rio Grande. The best example of this class will be found in the two isolated buttes or mesas which are called Shufinne and Puye. The following is Mr. Bandelier's description of these:

The Shufinne contains a complete cave village, burrowed out of the soft rock by the aid of stone implements. The other specimen of artificial cave-dwellings is separated from it by a distance of only three miles. Here is quite a large pueblo ruin, two stories high, that crowns the top of the cliff, but at Shufinne the buildings lie at the base of the cliff which looms up conspicuously like a bold white castle. There are scattered groups of caves near by, some of which extend at intervals on a line nearly a mile long, and in some places beams protrude from the rock, showing that houses had been built against it along side the cave dwellings.

As lookout places both cliffs are magnificently situated, commanding in every direction a superb view. The Rio Grande valley is visible from north of San Juan to San Ildefonso, and from Santa Clara to the gorges

of Chimago. The whole eastern chain stretches out in the distance from Taos to its most southerly spurs below Santa Fe. In case of imminent danger the inhabitants of one rock could signal to those of the other, night or day, as there was nothing to obstruct the view. The ascent to the caves is tedious, for the slope is steep and it is tiresome to clamber over the fragments of pumice and tufa that cover it. Once above, we find ourselves before small doorways, both low and narrow, a single door which sometimes serves as an entrance to a group of as many as three cells, connected by short, narrow and low tunnels, large enough for a small person to squeeze through. There were little air-holes, or possibly loop holes, in the outer walls but no fire places, although the evidences of fire are plain in almost every room.

Every feature of a pueblo household is found in connection with these caves. As defensive positions they were free from danger from assault by an Indian force. Only an ambush prepared under a cover of darkness could injure those who had descended from their lofty abodes, in order to



CAVE FORTRESS NEAR SAN FRANCISCO MOUNTAIN.

fetch water or till the fields. Nevertheless, constant harassing might at last compel the inhabitants to abandon even such impregnable positions.* Cave villages of this kind are quite numerous, occupying an area of about 300 square miles.

West of the Rio Grande, in the vicinity of the Rito de Los Frijoles, there are deep canyons which traverse the country like gashes several hundred feet in depth. In the cliffs of this romantic valley the largest and best preserved cave villages are to be seen,—capable of accommodating 1,500 people.*

Wherever the caves stand without pueblo ruins in their immediate vicinity, they show almost exclusively the old, old kinds of potsherds—the black and white, or gray, and corrugated. This would seem to indicate that the artificial caves and the small houses belong to one and the same period, anterior to that of the construction of the many storied pueblos.†

*See Final Report of Investigations among Indians of S.W. U.S. Part II, p. 74.

†See *Ibid.*, p. 160.

Cave villages of this kind have been described by Mr. C. F. Lummis, as situated among the "Potreros," and in the deep canyons just west of the Rio Grande; and attention is called to the remarkable stone idols, or effigies, which are supposed to be the totems of this people.

One of the best specimens of a fortress situated so as to command an extensive view is the one which is represented in the cut which has been kindly furnished by Mr. C. A. Higgins, of the Santa Fe railroad, who describes it as follows:

Nine miles from Flagstaff, and only half a mile from the stage road to the Grand canyon, cave buildings are to be seen, whose slopes are buried deep in black and red cinder. The caves, so-called, were the vent-holes of the volcano in the time of the eruptions of lava and ashes that have so plentifully covered the region for many miles about. Countless ragged caverns, opening directly under feet and leading by murky windings into unknown depths in the earth's crust. Many are simple pot-holes a few yards in depth, then subterranean leads, choked up and concealed. Others yawn black, like burrows of huge beasts of prey. In many instances they are surrounded by loose stone walls, part of which are standing just as when their singular inhabitants peered through the crevices at an approaching foe. Broken pottery abounds scattered in small fragments, like a talus, to the very foot of the hill. The pottery is similar to that found in the cliff-dwellings. It is probable the Cave-dwellers and the Cliff-dwellers were the same people. The coarser vessels are simply glazed or roughly corrugated; the smaller ones are decorated by regular indentations in imitation of the scales of the rattlesnake, or painted in black and white geometric designs.

II. The commonest form of defense was to place the village or "great house" upon a high and isolated mesa, and make the situation itself the source of security, but even in such cases there were special provisions for defense in the arrangement of the rooms above the terraces, leaving the lower story without any entrance.

This was the peculiarity which the Spaniards noticed* in all the pueblos, though some of them were more difficult to approach than others. Taos, Laguna, Acoma, San Domingo, all of them located in the eastern part of the pueblo territory, in the valley of the Rio Grande, occupied such isolated positions that the Spaniards found it difficult to conquer them, and some of them they never did wholly conquer.

The early American explorers were impressed with the de-

*The story of Coronado's march was told by four persons who took part in it: Mendoza, Jerramillo and an anonymous writer and Castanedo. The following quotations will show the impressions formed:

"Acuco was discovered by Alvarado in 1540, who described it as "situated on a precipitous cliff so high that an arquebus ball could scarcely reach the top." "Situated on the top, the only approach was by an artificial stairway cut in the rock of nearly 300 steps, and for the last 18 feet only holes into which to insert the toes." "Three days farther west brought them to Tigues, containing 12 villages, and situated on the banks of a river." Continuing his journey five days more he reached Cicuys, "which he found to be a strongly fortified village, and consisted of four story terraced houses built around a long square. It was also protected by a low stone wall and was capable of putting 500 men into the field." "Coronado and his troops also reached this rock. They climbed the heights of Acuco with great difficulty, but the native women accomplished it with ease. At the end of the first day's march from Acoma they rested, where was "the fairest town in all the province, in which were private houses seven stories high." Probably Laguna.

fensive character of these isolated villages, and have often described them *

An excellent summary of the various fortifications, or fortified villages, which may be found in the pueblo territory, has been given by Mr. A. H. Bell, an English gentleman, who accompanying the surveyors of the Southern Pacific railroad, afterwards wrote a book entitled "New Tracks in North America." In this book he furnishes a description of the country and its topography, giving the elevation of the mountain peaks,† the amount of territory drained by the different rivers,‡ the barriers|| which separate the different river valleys, the pueblos in this region and the population of each. He also quotes from Prof. J. S. Newberry, who accompanied one of the earliest exploring parties, that of Captain McComb, and who described the pueblos which he visited.

The ruins described by Mr. Bell were situated in the different districts, namely: on the Rio Grande and its tributaries; on the plateau where the Zuni and Tusayan tribes still live; on the Rio Verde and Little Colorado north of the San Francisco mountains; in the valley of the Gila and its tributaries; and, lastly, in Sonora, where are the ruins of the Casas Grandes. We give his descriptions of the first three or four localities, and leave the fortress of Sonora for another time.

The isolated pueblos which lie at a considerable distance from the main valley of the Rio Grande are very different in appearance from the simple one story buildings which are occupied by the natives. Laguna is built on the summit of a cliff some forty feet high, and possesses several natural advantages for defense. Acoma is a large village on the summit of

*The following are the American writers and the dates of their publications:

Wm. H. Emory, in 1846-7, wrote to Albert Gallatin, then secretary of state, that he had met with an Indian race living in four-story houses built upon rocky promontories, inaccessible to a savage foe, and cultivating the soil. His description was confirmed by Lieutenant Albert. Mr. Gallatin contributed to the transactions of the American Ethnological Society [Vol. II, p. 111, 1848] an article on the subject, and Mr. E. G. Squier at the same time contributed to the American Review an article on the Ancient Monuments and the Aboriginal Semi-Civilized Nations of New Mexico and California. Mr. Squier identified Cibola with Zuni. Lieut. J. H. Simpson, in his Journal of Military Reconnaissance from Santa Fe to the Navajo country, gave a detailed description of the ruins in Chaco valley, also in the Rio de Chelly, and of the inhabited pueblos of the Zunis. Lieut. A. W. Whipple and W. W. Turner published, in the reports of the Pacific railroad survey a description of the same pueblos. H. M. Breckenridge, in 1857, maintained that Cibola was the well-known "Casa grande" on the Gila. R. H. Kerns, in 1854, and Henry Scofield, in their "History of the Indian Tribes in North America" [Vol. VI, p. 70], upheld the Zuni theory. In the year 1869, W. H. Davis published a book in Doylestown, Penn., entitled "El Gringo; also the Spanish Conquest of New Mexico," and agreed with the above writers. L. H. Morgan thought he identified Cibola in the "remarkable group of ruined stone structures" in the valley of the Chaco, as being the seven cities of Cibola, and published an article in the North American Review, in 1869, to that effect. H. H. Bancroft, in his "Native Races," adopted the Zuni theory. The same view was held by L. Bradford Prince, chief justice of New Mexico, in his historical sketches of New Mexico from the earliest records to the American occupation, in 1888 [131 pp.]

†Fremont's Peak, 13,570 feet; Long's Peak, 13,575 feet; Mt. Lincoln, 17,000 feet; Santa Fe, 6,346 feet; Albuquerque, 5,033 feet.

‡The square miles embraced in the Columbia river valley, 230,000; the Colorado river, 200,000; the Rio Grande, 210,000; the Great Basin, 282,000; the Mississippi river, 1,400,000.

||The country from the Gila eastward rises step by step and mesa upon mesa. Upon the edges of several of the mesas may be found interesting fortified towns. In the interval between Fort Defiance and the Rio Grande rises Mount Taylor which, like San Francisco mountain, has broken through the sedimentary strata and poured over them floods of lava, which are as fresh as if ejected yesterday. Between the headwaters of the Rio Gila and Colorado Chiquito is a very elevated tract known as the "mogollon escarpment."

a flat mesa, whose perpendicular cliffs rise to the height of from 300 to 400 feet. The ancient pueblo Taos consists of a compact fortress formed of terraces, seven stories high, and built on a rock overlooking a stream.

Venegas, Coronado, and all the early Spanish explorers in New Mexico, have described a number of many storied fortresses which are now no more.* Those mentioned with the exception of Zuni and the seven Moqui villages, are the only native fortresses which now remain.

Pecos was a fortified town of several stories. It was built upon the summit of a mesa which jutted out into the valley of the stream, and overlooked the valley for many miles. The Spaniards lived there until the



ISOLATED FORTRESS.

middle of the last century. A few natives remained and kept alive the sacred fires in the estufas. The wild Indians of the mountains finally attacked the place and left Pecos desolated.

There are many ruins situated northeast from San Francisco mountain, located on the summit of the mesas. They are mostly three stories high with a court common to the whole community forming the center. The first story or basement consists of a stone wall fifteen feet high, the top of which forms a landing, and a flight of stone steps leads from the first to the second story.

Further to the northwest, and nearer to Colorado, is a group of pueblos larger than those of the Moquis, but situated like them on the flat summits of mesas but containing estufas, reservoirs, aqueducts, terraces and walls

*The ruins may be classed under three heads:

1. Ruins of many storied strongholds.
2. Ruins, the foundations of which only remain.
3. Ruins of buildings constructed under Spanish rule.

Under the first class, which are east of the Rio Grande, there are four ruined villages which were fortified.

of buildings at least four stories high. No traces have been found of the former inhabitants. At Pueblo Creek are the remains of several fortified pueblos, crowning the heights which command Aztec pass.

The ruins on the Rio Verde are worthy of notice. The river banks were covered by ruins of stone houses and regular fortifications which do not appear to have been inhabited for centuries.

In this connection it may be well to recall the villages which were situated on the Rio Grande, and which belonged to the same system with those which have been described, but have so long been unoccupied, that they have been called by Mr. C. F. Lummis, the cities that were forgotten.



RUINED PUEBLO ON A MESA—WITH OUTLOOK.

These seem to have been fortified towns. They are called by the general name of Gran Quivira. They were occupied by the Spanish missionaries but were finally overthrown by the savages and are now in ruins.

Near Quivria Mr. Bandelier discovered a bold eminence which bears the remains of a pueblo in which the rooms were disposed in a circle around the top of the hill and two estufas, and not far from the village an artificial pond. He says:

What could have induced the Indians to settle and remain in a region where they had to forego the great convenience of a natural water supply? It was the result of being driven back from other points. The ruins on the Madano were all provided with artificial reservoirs. This was not a device peculiar to Quivira, but one that was generally adopted by the Pueblo Indians of that region. All over this arid region the villages relied upon such contrivances as they do to-day at Acoma. Every pueblo on the Madano stands so as to be easily defended and to afford excellent lookouts.

They are all specimens of that peculiar kind of Indian defensive posi-

tions in which the absence of obstacles to a wide range of view becomes a main element of security. The roving Indian seldom could have taken a pueblo by surprise, still less by direct assault against both the villages on the Medano. The villages were almost impregnable. Against persistent attacks on a small scale the sedentary Indian could not long hold out.

The same kind of fortresses is common in the region around Zuni, though the most of them are in ruins. There are two pueblos on the summit of "Inscription Rock." The Zunis claim that they were their villages but were abandoned previous to the appearance of the Spaniards.

General Simpson has furnished a plan and description of one of these ruins. He says:

These ruins presented in plan a rectangle of 206 by 307 feet, the sides corresponding to the four cardinal points. The apartments seem to have been chiefly upon the contour of the rectangle, though the heaps of rubbish within the court show that there had been here some also. The style of the masonry, though resembling that of the pueblos of Chaco, is far inferior in beauty of its details.

About 300 yards distant, a deep canyon intervening on the summit of the same massive rock, upon which the inscriptions are found, we could see another ruined pueblo, in plan and size similar to that I have just described. The situation of the ruins is a good one for defense and for observation, since they are perched on a plateau over 200 feet in height, the sides of which are everywhere steep and absolutely vertical on the north and nearly so on the east.*

There are ruins upon the summit of Thunder mountain called To-yo-a-lan-a, which rises 900 feet above the plain, in precipitous crags. Ascent is possible on four trails only, the most of which are of frightful dizziness. The mesa is four miles long and from one to two miles wide. The top is partly covered with low woods. There is tillable soil and permanent water in tanks, so that it could furnish room and subsistence for a moderate Indian population. The ruins mark the sites of six small villages. They date from the year 1680 and 1692, and were erected during the absence of the Spaniards when the Navajos threatened to destroy the tribe. Sacrificial caves, in actual use, are quite numerous, and hosts of legends and folktales cluster around the towering table-rock. The village, which was first seen by Coronado and which he had to take by storm, was called "Ahacus" by Fray Marcos, and is now called "Hauicu." It is an elongated polygon on a rocky promontory, overlooking the plains that stretch out on the south side of the Zuni river and about fifteen miles southwest from the present Zuni. The polygonal shape was a favorite one in the Zuni villages.

Mr. Bandelier speaks of many ruins of this type:

It implies a circumvallation of polygonal shape with one or more gateways. The circumvallation forms a building with a number of cells, the entrances to which were from the inside, while the outer front was probably perforated only with loop-holes. This polygonal house enclosed an

*See Journal of Military Reconnaissance, 1850, p. 221. Also Bandelier's Final Report, Part II p. 29.

open space containing estufas, and sometimes a cluster of other buildings, so that the whole consists of a central group surrounded by a ring of many storied edifices which form a defensive wall. The prevalence of the polygonal pueblo in the Zuni country must therefore be ascribed to other than physical influences, and it seems as if a protracted state of insecurity might be the cause of it.

Mr. Higgins also speaks of ruins on the summits of isolated mesas, and illustrates them by two very striking engravings.*

At several points upon the rim of the Grand canyon the razed walls of ancient stone dwellings may be seen. They are situated upon the verge of the precipice, in one instance crowning an outstanding tower that is connected with the main wall by only a narrow saddle, and protected on every other hand by the perpendicular depths of the canyon. The world does not contain another fortress so triumphantly invulnerable to primitive warfare, nor a dwelling place that can equal it in sublimity. It would be found upon one of the salients of Point Moran.

Scattered southward over the plateau other ruins of similar character have been found. Perfect specimens of pottery and other domestic utensils have been exhumed.

The most famous group and the largest aggregation is found in Walnut canyon, eight miles southeast from Flagstaff. This canyon is several hundred feet deep and some three miles long, with steep terraced walls of limestone. Along the shelving terraces under beetling projections of the strata, are scores of these quaint abodes. The larger are divided into four or five compartments by cemented walls, many parts of which are still intact. It is believed that these ancient people customarily dwelt upon the plateau above, retiring to their fortifications when attacked by an enemy.

Inferentially these mysterious people, like the Cliff-dwellers, were of the same stock as the Pueblo Indians of our day. How long ago they dwelt here cannot be surmised, save roughly, by the appearance of extreme age that characterize many of the ruins, and absence of the strange native traditions concerning them. Their age has been estimated at from 600 to 800 years.

III. Another method of defense was one which consisted in the erection of towers or citadels, some of which were square, others round. Mr. Lummis has described a "rectangular house" situated southwest of the Chaco group, called Pueblo Alto. It measured some 200 feet long from north to south and 100 feet from east to west. He says:

The walls on the west side are said to be still thirty, forty and forty-five feet high. Just in the center of this side is the distinctive wonder of the whole pueblo—a great tower, square outside, round within, with portions of its fifth story still standing. The walls still hold the crumbling ends of the beams to the successive stories, and the loop-holes in the two lower stories are plainly visible. There are at present no traces of water in the vicinity, but the pottery seems to be of the same kind as that found in the Chaco ruins.†

These ruins are near the extinct volcano called San Mateo, or Mt. Taylor, the summit of which is 11,391 feet high. The valley of the San Mateo is a narrow basin along the wooded northern slopes of the Sierras; bare hills extend to the north of

*These engravings were drawn by Thomas Moran, who, perhaps, sacrificed strict scientific accuracy to his artistic taste. They represent the scenery vividly, but the picture of Walnut canyon differs somewhat from the photographs which have been taken.

†See Randellier's Final Report II.

it, and to the east lies a bleak pass. The soil at San Mateo is fertile. Woods near at hand and a diminutive creek furnishes the water supply. Mr. Lummis speaks of the beauty of the pottery and the originality of decoration. There were bowls of indented pottery, one-half of the interior smooth and handsomely painted, covered with combinations of well-known symbols of Pueblo Indian worship. Shell beads, stone axes, metates and arrow heads were numerous.

In this region, a few miles north of McCarthy's, rises an elliptical mesa called the "Mesita Redonda." Its height is 113 feet. The rock is sandstone, its top flat. It measures 76 metres by 45 metres. On the summit is a structure consisting

of nineteen regular rectangular cells, built on three sides around what may have been a circular watch tower, the diameter of which is nearly 30 feet.

Extensive ruins are found below, also pottery of the ancient red and black type. All appearances favor the presumption that the remains on the top of the little butte and the more extensive ones at its foot formed but one settlement. It may be that the circular edifice was a watch tower, or it may have been the estufa belonging to the people who occupied the 19 cells built around it.

The Mesita afforded an excellent point for observation and a place of refuge in case of dire necessity. Below there is at least one estufa, and also a large round depression,

41 feet in diameter, which may have been a tank. It was an exceedingly favorable spot for an aboriginal settlement, for there was water near by and wood, and the soil was fertile.

Other towers which were used for lookouts as well as for fortresses are numerous. Mr. Bandelier says of them:

The frequency of round or circular structures have often been noticed by investigators. The interior is formed by a circular room and around this



TOWER ON THE MANCOS.*

*This Tower has been described by W. H. Holmes. See Chapter VI, p. 91.

is built a ring divided transversely by a number of cells. While the ordinary round-towers occur almost everywhere over the pueblo area, this more complex structure seems to be a feature peculiar to the extreme northwest of New Mexico and the adjoining sections of Colorado and Utah.†

Cliff houses and round-towers exist northwest of Fort Wingate. Two story watch-towers, of stone, were discovered in the vicinity of Zuni which were square instead of round. A stone staircase, built outside from the ground, leading to a small doorway in the upper story, characterized the "Round-towers." Some of those at Fort Wingate had the walls built in steps and terraces, receding from below upwards like the stories of pueblo houses. Transverse beams supported the free ends of a number of poles like spokes of a wheel, resting loose on the axle, the other ends were imbedded in the walls and the poles supported the usual layers of brush and earth, or making circular balconies. Such tower-like constructions are not always to be looked upon as strictly military. The square towers around Zuni are built for guarding the crops and not for the use of a small garrison. Nevertheless every one of the small buildings had contiguous to it a circular depression which the Navajos say was a tank. One of these had sixteen cells.

Not only were the towers near the enclosures but within the enclosures themselves, and often formed citadels. This is especially true of pueblos built in a checker-board pattern of irregularly alternating houses and courts. There are striking resemblances between these citadels, which form so prominent a feature in the walled towns of the far west, and those which are so common in the ancient "walled towns" of oriental and bible lands. There is also considerable likeness between the structures upon the mesas and the old "castles" which in feudal times crowned the summit of the hills and mountains in central Europe.

These pueblos are virtually closed on all sides, either by the walls of houses or by separate walls; they are very defensible, as there are but one or two entrances, and these either by a narrow passage between two buildings or a narrower one with re-entering angles between two court walls.

Each village contains one or more open spaces of large size, but they are irregularly located, the tendency being to cut up the whole plat into as many small squares as possible.

In addition to the court yards connected with these edifices, there are frequently enclosed spaces on the slope, which would not permit of the erection of buildings. These were probably garden beds, and were placed near the dwellings as a measure of precaution in time of danger. They were above the line of irrigation by the arroyos, but the remains of acequias in the bottoms prove that these were used for cultivation. They were without defense.

The type of village which includes a larger and more substantial structure grows more conspicuous as we ascend the course of Tonto creek; the checker-board-village-type is quite plain. A fine specimen of the kind is noticed at San Carlos, Wheat Fields, and Armours. A quadrangular wall 8½ feet thick surrounds the central mound and the space thus enclosed is connected with the main structure by walls of stone dividing it into squares and rectangles. It is still the checker-board-type; but the dwellings have mostly been consolidated into one central mass, from which enclosures diverge towards the circumvallation. Every village contained a larger and higher eminence, sometimes in the center and sometimes at the side.

There are indications in some places that the house was

†See Holmes report in Hayden's Survey in 1876, p. 388, and plates; also Morgan's "Houses and House Life," p. 191; also the chapter on "High Houses and Ruined Towers."

erected on an artificial platform, but the central building can not compare with the communal house. The ruins around Fort McDowell and Fort Reno are of this type. Remains of irrigating ditches are quite common—some of them as long as twenty miles. The width of the acequia is about two feet, and the depth about two feet. In addition to these canals, artificial tanks begin to appear. They are elliptical and the rim is formed of stones, or by an embankment of earth of considerable thickness. They run mostly parallel to the streams, but transverse acequias have also been discovered. I always found the tanks in the vicinity of ruins, and more or less distinctly connected with ancient canals.

Mr. Cushing says of these canals in the Salado and Gila valleys:

They were found varying in length from ten to eighty miles, and in width from ten to eighty feet. Each canal, whether large or small, was found on excavation to have been terraced, that is the banks of dirt thrown out had formed a greater canal containing a lesser, which in turn contained another. They were so filled up and leveled in the course of centuries, that they were scarcely traceable.

Among the Pueblo Indians such works are communal enterprises carried on by all the men of the village, and performed at stated times. The villages situated on the same irrigating ditch used the same acequia and were contiguous, yet they were independent of each other for a long time. There was no evidence of a confederacy.

In connection with this class of fortresses, the Great Houses on the Gila, and Salado and Sonora, are to be mentioned again. Father Ribas, the historiographer of Sonora, says that the villages consisted of solid houses made of large adobes, and that each village had, beside a large edifice, stronger, and provided with loop-holes, which served in case of attack, as a refuge or citadel. Such a place of retreat, the Casa Grande and analogous constructions in Arizona, seem to have been. The strength of the walls, the openings in them, their commanding position and height, favor the suggestion.

A wall of circumvallation to these villages shows that the enclosure and central area was a fortress.

Mr. Cushing claims that the central building was a temple. He speaks also of "pyral mounds" where had been buried a certain class of the dead of these cities, together with their numerous funeral sacrifices. Usually at the southern and western bases of these mounds were found great cemeteries containing from twenty to two, three, and even four hundred inhumate urns.

The same excavation which revealed these features of a pyral mound also revealed the contiguous enclosing wall of what proved to be typical, very extensive, many roomed dwellings. Not only from the discovery of looting devices and forms of pottery, of which each one of these great blocks of dwellings contained always a distinguishing few, but also from the fact that each had outside of its enclosing wall, its own pyral mound, its

great underground communal oven, and its still greater reservoir, fed by a special branch of the larger city viaducts or canals, it was inferable that each was the abiding place of a particular clan or gens.

First in the temples, in what remained of the second and third stories, afterwards in the enclosed communal buildings, we found sepulchres. Those in the temples were built of adobe, shaped like sarcophagi. These in turn had been carefully walled in and plastered over, in order that the living rooms that contained them might still be occupied.

The best specimens of a Cliff Fortress is the one which is called Montezuma Castle. It was first discovered by Dr. W. F. Hoffman in 1876, but afterward was visited and described by Dr. E. A. Means.

It contained all the elements of a permanent "home village" or pueblo, and of a cliff fortress. Its position is almost inaccessible, but its manner of construction, especially the arrangement for reaching the upper stories, gave it unparalleled security. Its upper stories were furnished with battlements, showing that it was intended to be a fortress, and the details of its construction illustrate the skill and sagacity with which the Cliff-dwellers erected their fortresses.*

Mr. Hoffman calls it an imposing "cliff fortress." The following are his words:

I say "fortress" from the fact that all the cliff-dwellings from this locality upward, along the stream to Montezuma wells, contain but a single room, the dimensions of which vary from four to eight feet square, and from three to five feet high, and appear like swallow nests instead of habitations. The fortress is about 35 feet in height, each story receding several feet. The horizontal length of the front wall is about 50 feet, the walls being built nearly out to the face of the escarpment. There is a square tower in the middle front of the lower wall, through which I found the only means of access.†

The roof of the second story forms a floor for a sort of parapet 4 feet high. Through this are several port-holes 3 or 4 inches square, on the inner side and over a foot on the outer side, through which arrows could have been very easily fired. Back of the parapet is a small opening leading into the rocks, which appears as if it might have been used as a store-room for food.

The door or opening, partially visible in the upper postern wall, is the one leading to the supposed hearth and store-room. Two rafters protrude from the middle of the wall, which evidently served as a partial hold, or support. The lintels over the doorways are generally of cedar, and are in as substantial a condition as when first placed there. The stones composing the wall are neatly and closely laid and fitted, and actually cemented together with mortar. The place has become more accessible by the breaking away of the rocks than it was when regularly occupied, when rope ladders were probably in use.

The description by Dr. Means corresponds to that given by Dr. Hoffman, but furnishes some additional facts. It is as follows:‡

Of the cliff fortresses, as distinguished from the pueblos, many excel-

*See Hayden's Report for 1876, p. 477.

†Mr. Holmes speaks of towers on the San Juan, which furnished the means of access to the cliff-dwellings.

‡"Cliff-Dwellings on the Rio Verde," by Edgar A. Means, surgeon U.S.A. Popular Science Monthly, 1890, p. 744.

lent examples are found in the verde region. One, in which I was the first white man to set foot, is built on the right wall of a deep canyon, between Hackberry Flat and the Rio Verde. The building known as "Montezuma Castle," on the right bank of Beaver creek, in sight of and three miles from Fort Verde, is the finest and is typical of its class.

This castle, doubtless a "fortress," is fitted into a natural depression, high up in a vertical limestone cliff, the base of which is 340 feet from the edge of the stream and about 40 feet above it. The casa, or fortress, is accessible only by means of ladders, its lowest foundation being 40 feet from the bottom of the cliff. After ascending three of these, a ledge is reached, upon which six cave-rooms open. On a ledge below this one, and 80 feet to the northeast, are two cave-dwellings neatly walled up in front, with a well-made window in each for entrance. One or two isolated chambers, walled in front and windowed, may be seen in the side of the cliff, where they are altogether inaccessible. These together constituted the settlement, or home village.

Ascending a fourth ladder, the "fortress" is reached. The foundation rests upon cedar timbers, laid longitudinally upon flat stones on the ledge. The projecting ends of these timbers show plainly the marks of stone axes, used in cutting them. The front wall is a little over two feet thick at the bottom and 13 inches at the top. The timbers are so placed that at the middle they project over the edge of the ledge. The fortress is entered at a projecting angle, through a window of sub-gothic form, measuring 3 feet 3 inches in height and 2 feet 4 inches wide at the bottom. The apartment is smoothly plastered within. The plastering shows the marks of the thumb and fingers and hand.

The roof is formed by willows laid horizontally across eleven rafters of ash and black alder; upon this a thick layer of reeds placed transversely, the whole plastered on top with mortar, forming the floor to the chamber above. The only means of entering the seventeen apartments above this room is a small hole in the ceiling, just within the entrance, measuring 13 by 18 inches, bordered by flat stones laid upon the reed layer of the roof. These stones are worn smooth by the hands of the Cliff-dwellers, in passing two and fro. There is a store-room separate from the one just described, on the first floor. It can only be entered through a small scuttle in the room over it. The upper, third and fourth stories are further back than the first, after the pueblo style. The outer wall is built on a ledge in the rear of the second floor. The second story is much more spacious than the first, as the roof of the latter brings the building to the level of the ledge, which extends laterally in each direction and serves as a floor for additional rooms. This story is composed of a tier of four rooms, bounded behind by a massive wall of masonry which rests on a ledge with the floor. This arrangement, besides giving more room to the stories above, secures the greatest amount of stability to the wall, which is most important to the structure. It is 28 feet in height, rises to the fifth story, around the front of which it forms a battlement $4\frac{1}{2}$ feet high, fortress like. It is slightly curved inward.*

The third floor comprises the most extensive tier of rooms in the structure, as it extends across the entire alcove of the cliff in which the Casa is built. The balcony above the second story has a battlement about it, supported by the wall of the room. The apartments of the fourth floor are rather neater in construction than the rooms below. The doorways are neatly executed, each having four good-sized lintel pieces,

The fifth story can only be reached by climbing through a small hole in the ceiling of the room below. This, the uppermost story, consists of a long porch, or gallery, having a battlement in front and an elevated backward extension on the right. The two rooms on this floor are roofed by the cliff, and are loftier than the lower chambers.

*The most of the walls which form the fortress in the cave villages are curved outwards. Such is the case in Monarch's Cave and elsewhere.

THE JESUP EXPEDITION COLLECTION.

BY HORTON I. SMITH.

An exhibition of the collections of the Jesup North Pacific expedition, made during the summer and fall of 1897, has been placed in the American Museum of Natural History. The plan of the expedition is a most comprehensive one, and of fundamental importance for the study of the relations of the American race to other races. It deals with one of the great questions, referring to the early peopling of the inhabitable parts of our globe.

The detailed plans for the expedition were intrusted to Dr. Franz Boas, who is in charge of the museum. He laid out the work in such a way that the north Pacific coast of Asia and America will be thoroughly examined by a number of expeditions, which are intended to extend over five years. During the past year, work was carried on in the southern part of the North Pacific coast of America, more particularly in the southern interior and on the coast of British Columbia. The party which conducted these investigations consisted of Dr. Franz Boas, Dr. Livingston Farrand, Mr. Harlan I. Smith, Mr. James Felt and Mr. George Hunt.

There were two special problems to which attention was paid during the past year. On the coast of British Columbia are the remains of villages which date back to great antiquity, the refuse of these villages being piled up in places to a height of twenty feet or more. Since these accumulations consist, to a great extent, of shells, fish-bones, and other refuse of the kitchen, which accumulates very slowly, these deposits present great antiquity. At the present time, there is a peculiar culture prevailing among all the tribes of the North Pacific coast. The first problem that was investigated was that of the development of this peculiar culture during the time represented by the deposition of these refuse heaps.

The other important question looked into was whether the personal appearance of the people changed during this period, so that one may assume that migration took place after the villages were first established. The study of these archæological questions was taken up by Mr. Smith. Among the specimens that he obtained, in his work there, is one group illustrating the culture of the prehistoric people of the interior of British Columbia. Most of these were obtained at Kamalloops, which is at present quite a flourishing town on the Canadian Pacific railroad. Opposite the town a considerable Indian settlement is situated. Mr. Smith, with some difficulty, obtained the consent of the Indians to dig in the old burial places. The Indians do not know to what people these burials belong,

but they do not like to see the bones of what may have been their ancestors, disturbed. For this reason the chief called a council in which the subject was very fully discussed. Finally the confidence of the people was gained by the help of a number of photographs of the museum, in which it was shown how the people visited the halls in order to see the wonderful works of the Indians, and how they were instructed, by means of lectures, in regard to the meaning of all these objects, and from that time on they rather helped than resisted any endeavor to obtain collections.

The finds at Kamloops consist largely of bone and stone implements; and some of the specimens that are now on exhibition in the museum show that the art of the prehistoric people was highly developed. There are a number of beautifully carved bone clubs, the handle of one of which shows an Indian adorned with a flowing feather head-dress. There are carvings representing animals; copper ornaments which were worn in the ears and in the hair, and probably also in the nose; large hand-mills and pestles, showing that the people gathered and dried various kinds of fruit, which were probably mixed with water, ground and boiled. The objects that were buried with the dead were wonderfully well preserved. The mode of burial of the ancient people evidently differed from the one practiced nowadays. A number of bodies had been cremated, particularly those of children, while in other cases the grave was surrounded by an enclosure made of stakes and fragments of a canoe.

The stone implements are found in great numbers scattered all over the country, and the Indians have curious beliefs concerning them. They think that they were made by the Raven, while he was traveling all over the world, performing great feats. They search for them, making new implements out of them. The stone implements that they were using until quite recently are of much smaller size and nicer shape than those found in the prehistoric burials. Quite a number of skeletons were exhumed, which seems to indicate that in personal appearance the past population was very much like that of the present day.

After finishing his work in the interior, Mr. Smith took up the investigation of the refuse heaps on the seacoast. The results obtained here are of great importance. The manufactured objects are only to a very slight extent chipped stone implements. The stone implements are made of slate by means of rubbing; but by far the majority of implements are made of bone and antlers. There are harpoons, arrow-heads, spear-heads, etc., similar in shape to those used on the coast until recent times. But the human remains indicate that a fundamental change in the type of the people inhabiting this region has taken place. At the present time the curious custom of deforming the heads prevails among the Indians. A

cushion made of cedar bark is placed on the head of the infant, and tied down so firmly that it prevents the growth of the forehead. It is removed after the first year, but then the head has attained a peculiar shape, which it retains through life. For this reason the Indians are called "Flatheads." But among the people whose remains were found in the shell-heaps, this custom did not prevail. Their heads are nicely rounded and seem to resemble in shape the heads found among the tribes of the interior. It seems, therefore, that Mr. Smith's archæological discoveries indicate that a wave of migration crossed the mountains, and descended to the coast. It is interesting to note that this conclusion, which has been derived from the archæological investigation, is corroborated by linguistic evidence. The language that is spoken now by the tribes of the coast is akin to the language spoken in the interior, which, of course, also indicates that at an early time these people must have been closely related.

But it seems that the refuse heaps disclose a still different type of man. The people who seem to have lived here at a still earlier time were also in the habit of deforming their heads, but in a manner different from that practiced at the present time. The method of deformation which they applied is still practiced by the Indians living in the extreme north of Vancouver island. It seems, therefore that the archæological investigation is disclosing here very fundamental changes in the location of Indian tribes, which must have taken place hundreds of years ago.

The other members of the party directed their attention towards the investigation of the customs and personal appearance of the Indians, with a view of determining their relationships. The exhibit shows some very interesting results of these investigations. In one case there is a series of masks collected in Bella Coola, which represent all the deities of that tribe.

The Bella Coola, from whom these specimens were collected, live on a deep fiord on the coast of British Columbia. They were visited by Drs. Boas and Farrand, who traversed the coast range on horseback, and reached the coast, descending the steep western slope of the coast mountains. On this journey Dr. Farrand visited one of the most primitive tribes of North America. They are called the Chilcotin. Until a few years ago they were a purely nomadic tribe (without any fixed habitation), while at present the larger portion of the tribe live in villages that are located on the Chilcotin river. Quite a number of families, however, prefer the old roving life. Their huts are built at long intervals on the eastern slopes of the coast range, and they come into contact with the whites rarely.

The expedition was very successful in collecting casts of the faces of the Indians, which represent quite exhaustively the different types of man inhabiting British Columbia. From these casts and accompanying photographs busts are being

made, a few of which are on exhibition now, which illustrate the personal appearance of these Indians.

Another collection of great interest was made near the northern part of Vancouver island, partly by Dr. Boas and partly by Dr. Farrand. It illustrates the industries, arts, and ceremonials of the tribes of that region. The collection embraces a series of beautifully carved masks, which are worn in ceremonial dances, and represent the spirits which are believed to be the protectors of the Indians. Other groups of masks represent the ancestors of families, and are worn in the feasts given by the chiefs.

Besides these collections, the party brought back a vast amount of scientific information bearing upon the customs, beliefs and languages of these tribes.

It is a matter of congratulation that the liberality of Mr. Jesup has made it possible to investigate the tribes of this interesting region before they are swept away by contact with civilization.

From the New York Evening Post.

THE HAND IN THE ALPHABET.—It was long held that the Phœnician alphabet was derived from the Egyptian, but it has been discovered that as early as the time of the exodus, Minæ was a cultured and prosperous realm, where people practiced the art of alphabetic writing. This has revolutionized the history of the alphabet, for instead of deriving the Minæan from the Phœnician's alphabet it became necessary to derive the Phœnician from the Minæan. There are certain sounds in the Hebrew which were preserved in special symbols in the language of Arabia. The earliest known name for hand is koph, and for foot is nun, but the character for hand and foot are not found in the Hebrew, and are found in the Minæan. The Hebrew borrowed the name from the merchants but did not adopt the character of the hand and foot in ancient alphabets. This is somewhat strange and has a bearing upon the history of the Hebrew alphabet. It is well known that the hand and the foot are very common in the glyphs of Mexico and Central America.

The hand is also a very common symbol among the pictographs among the Pueblos and Cliff-dwellers. It was used also by the Mound-builders. This would suggest that both the hand and the foot were primordial forms in the earliest alphabets, and that they became sacred characters and had a symbolic meaning. This makes it very important that the significance of the hand as a religious symbol should be studied. Those who confine themselves wholly to American symbols may not appreciate this so much as those who take a wider range of subjects.

EGYPTOLOGICAL NOTES,

BY WILLIAM COPLEY WINSLOW.

THE BEHNESE PAPYRI.—The remark that "we have only begun to scratch Egypt as yet," is now as true as it is witty. Witness the great but easy discovery of papyri by Messrs. Grenfell and Hunt at Behnesa. The former wrote: "As we moved northwards over the site, the flow of papyri soon became a torrent which it was difficult to cope with." Again: "On the first of these two days we came upon a mound which had a thick layer consisting almost entirely of papyrus rolls, . . . the difficulty was to find enough baskets in all Behnesa to contain the papyri. At the end of the day's work no less than thirty-six good-sized baskets were brought in from this place, several of them stuffed with fine rolls, three to ten feet long, including some of the largest Greek rolls I have ever seen."

Behnesa, a squalid hamlet of fellahs, is the site of the capital city Oxyrhynchus, whose mounds, never exceeding thirty-five feet in height, lie some eighty miles west of the Nile and 120 miles south from Cairo. The seventy men and boys had hardly dug a trench, when Mr. Hunt detected the Greek word for mote on a crumpled papyrus. It was the now famous papyrus containing the (new) "Sayings of Jesus." Another uncial fragment contained the first chapter of St Matthew's Gospel, now accepted as by far the oldest known fragment of the New Testament and of inestimable value, especially to orthodox christianity. "The papyri were, as a rule, not very far from the surface; in one patch of ground, indeed, merely turning up the soil with one's boot would frequently disclose a layer of papyri."

There are several hundred thousand of bits or fragments of papyri. I will classify some of the papyri likely to be of value. There are some three hundred literary pieces, classical and theological, ranging from ten lines to ten columns in length, mostly of the first three centuries. About half of these appear to be Homeric. The other half covers almost the whole field of Greek literature—such as fragments of epic, lyric, tragic and comic poetry, of oratory, philosophy, and of treatises on medicine, grammar, law, geography and metre—together with early Christian writings. There are about 2,000 non-literary documents, covering the first seven centuries, and relating to trade, taxation, civil and military affairs, customs, etc. They range in quality from an imperial edict down to the private memoranda of a peasant! The latter was bidden to "shell out," just as the poor fellah is to-day; and in one spot Mr. Hunt found 150

ostraka, from one of which I take an order, the translation being: "Give Ammon, the groom, one jar of wine for five days from first to sixth day of Pharmouthi."

There are some thirty Latin papyri, partly literary—a fragment of the first book of the *Æneid* being already translated. Coptic seems to have been little written at Oxyrhynchus, for only some forty to fifty Coptic documents were found in the heaps of fragments. These range from 500 to 600 A. D.

There are 100 well-preserved Arabic rolls, ranging from the seventh to the tenth century, and over 300 mediæval Arabic papyri.

THE THUCYDIDES PAPYRUS is of the first century and has been critically studied. It is a portion of the fourth book, and includes the famous, or infamous, surrender of the Spartan garrison on the island of Spahcteria to a party of Athenians. The few original readings are a distinct improvement upon our mediæval versions; a purer Attic orthography is also seen in a few instance. But the papyrus is essentially like that of our accepted text. We have, therefore, for the first time, positive proof that the texts of the first century and the middle ages agree. Fortunately, too, the papyrus contains a number of sentences, which certain critics have delighted to call accretions or corruptions. In the last *ANTIQUARIAN* I named the papyri that are to appear in the coming volume of the Egypt Exploration Fund, among them some lost poems by Sappho, and I need not repeat the captivating program.

PREHISTORIC RACES IN EGYPT.—Up to a very recent date the existence of a neolithic—certainly of a palæolithic—age in Egypt has been conjectured only. But implements of a palæolithic type are now well known and point to a late stone age before the use of metals. Nothing as yet of the transition period can be recorded with authority; and the neolithic and metallic age so commingle that to positively determine the remains of the former is sometimes a difficult task. M. de Morgan's brilliant work at Nagada is supplemented by that of M. Anelineau at Abydos. The conclusions of de Morgan may be summed up. The stone age people of the Nile are called Ghenni aborigines, to distinguish them from the invaders from Asia, *i.e.*, the Egyptians as they became called. The former are dolicocephalous and the latter are mesaticephalous; they belong to two different races, as is shown by Dr. Fouquet.

From the images found we know that the aborigines were not negroes, but a white race, with short, light hair, an oval face and almond shaped eyes. They wore pointed beards, and their women had wide arched eyebrows, broad hips and thick waists. They did not disfigure their bodies but made use of tattooing.

Their only dress consisted of bits of skin and furs, nothing more than a loin covering, and they do not seem to have known the art of weaving, and apparently did not know how to make thread and rope. As ornaments they wore bead necklaces and bracelets made of stone or shells from the Nile or Red Sea. Bracelets were also made of ivory, mother-of-pearl and flint. The last are truly wonders of workmanship. The process was very likely to make a flint disk, through the center of which a hole was bored with a sand drill and enlarged by pressure. Such bracelets have been found nowhere else in the world. They mark the highest point in the flint cutting industry.

The aborigines were great hunters and fishers. They had spears, arrows and harpoons. They had canoes adorned with curious distinctive emblems. Whether they were farmers is more questionable, as wheat and barley originated in Chaldæa, and though found in the royal tomb of Negadah, are wanting in purely neolithic stations, like Dimeh and others.

The best supply of natural flint is to be found in the cretaceous beds of the valley between Akhmin and Keneh, in which district, too, the flint-cutting industry seems to have reached its climax. M. de Morgan's observations regarding the various improvements are similar to those published last year, but he has found new objects of marvellous beauty—for instance, two knives, now in the Gizeh museum. Those knives are characteristic of Egypt, while other implements, such as polished celts, common in Europe, are very scarce in Egypt, where also gouges and chisels seem to be wanting.

It is on the left bank territory of the Nile, between Negadah and Kawamil, that the flint-cutting industry seems to have reached its greatest perfection. This place was the centre of an advanced civilization and became the headquarters of Egypt's invaders.

The royal tomb of Negadah did not contain any metal implements, but in the tombs of Abydos these begin to assume a great importance, and from what is known of the sepultures of the third dynasty it may be assumed that the use of flint was then almost abandoned. In the less ancient tombs, where metal occurs abundantly, the flint cutting is less perfect than in the older sepultures. The period of highest perfection in the cutting of these implements seems to have been shortly after the invasion. That flint implements were abandoned at the time of the third dynasty is proved by the absence of tools and flint relics.

But to attribute the whole mass of later as well as earlier stone implements to the neolithic age is an error. M. de Morgan is both impatient and brilliant, and here his impatient ardor to prove his points needs careful investigation. In the scenes of sacrifice of the twelfth dynasty, flint knives are used and flint-headed arrows are found in the tombs of the preceding dynasty.

It is seen in Petrie's books, *Kahun*, *Illahun*, *Tell-el-Amarna*, that knives and tools of stone were abundant in the twelfth dynasty, and sickles were set with flint flakes in the age of Thothmes. In the Middle Empire bronze was used but it was sufficiently scarce to be supplemented by stone when stone would answer. The axes found by de Morgan at Misht are identical with those found at Kahun, by Petrie. There assuredly was a neolithic age, and my own opinion is that it both precedes "the new race" (whatever that race was), and included it, certainly for a time. Then followed the "Egyptian conquest," by the invaders from the East, and the bronze age, still using stone or flint. History began with the organization after the conquest. It is evident that Egypt is affording ethnology a splendid field for research.

EGYPTIAN PROPER NAMES.—There could hardly be a harder philological nut to crack than this one. An *established* consensus is sorely needed. Prof. Erman again presents the "Berlin system" for transliteration; but for proper names its trouble is that it gives us just the Egyptian text, often a bare consonantal skeleton. For example, *Sbkhtp* (Sebekhetep). How to produce pronounceable names is the problem. Dr. Erman proposes a solution: 1. Substituting Greek forms for Egyptian where they exist—*e. g.*, Amenemus for Amenemhat. 2. Substituting Coptic for Egyptian where the Coptic forms correspond in grammatical construction. 3. Where neither Greek nor Coptic can be of use, by adopting conventional values for consonants and semi-vowels. But two objections at once occur: 1. This involves a knowledge of Coptic and its relation to Old Egyptian. 2. It involves a complete change, so much so that scholars could hardly drop the old ruts for a new track, although "the new race" of Egyptologists might acquire the "neo-text."

MONUMENTAL RECORDS, the new illustrated monthly journal, has made its bow, and is already a welcome as well as a needed visitor to many homes that either wish, or should know of, picturesque archæology. Dr. Baum, the editor, whose address is box 1839, New York City, has a clear and vivid conception that such a journal is sure to be favorably received. The illustrations are of a high order and the text instructively pertinent.

ARCHÆOLOGICAL NOTES.

BY THE EDITOR.

BIRDS THE BONES OF THE GODS.—A singular point is brought out in the study of the *Israel Stela* by Mr. F. L. Griffith. On it there appears this sentence: "I have not trapped birds, the bones of the gods." In spite of its strangeness this is a common conception, but in order to be understood must be applied to the souls of men. The Egyptians believe that the sacred hawks supplied the framework on which the gods and the ethereal spirits of deceased men could go from earth to heaven. Even the Dakota Indians have a myth about the shapeless souls which climbed up from the world below to the terraces of the earth above, and at the summit received the forms of birds. They were afterwards changed to human forms. What is most remarkable about this myth is, it is connected with a pictograph in which the sun, the moon and seven stars, or Pleiades, and the red star, and the tree, and river appear as well as the four terraces above the earth. It is a singular coincidence the pictograph is purely aboriginal. The conception of the souls becoming birds is oriental.

ANCIENT ARMOR.—The Milwaukee museum is to have one of the finest collections of armor in this country. The donor is Mr. Rudolph Nunnemacher, Jr., who has been engaged in making a collection of this class of curios for a number of years. The collection is said to be one of the finest private collections in the country. It contains between 3,000 and 4,000 specimens, representing the armor of all ages and all countries.

STANDARDS OF LINEAR MEASURE.—An article in the *School of Mines Quarterly* [January, 1893], by Edwin P. Clark, upon the "Standards of Linear Measure," has some good thoughts. The writer quotes from John Quincy Adams' report upon weights and measures in 1821, as follows: "For the measurements of all objects which you can lift and handle the fathom, the arm, the cubit, the hand's breadth, the span, the fingers are the instruments proposed to him by nature; while the pace and the foot are those which are given to him for itinerary distances. The lack of uniformity in measures of length is founded in the physical organization of man." In adapting the raiment to his body, he would find at once in his own person the supply of the standard of the measure of length, and the proportions and subdivisions of that standard.

Mr. W. M. Flinders Petrie says: "Most ancient measures have been derived from one of the two great systems—that of the cubit of 20.63 inches, or the digit of .729 inches, and both of these systems are found in the earliest remains." The distance from the point of the elbow to the end of the little finger, being sharply defined and readily applicable as a unit of length, seems to have been the most ancient and universal standard. This is known as the cubit. The parts are also taken from the digit, thumb, palm, hand, foot, pace, girth (which was the yard), and are as follows: digit, 1; palm, 4; span, 12; foot, 16; cubit, 24; step or pace, 40; fathom, distance between tips of fingers with arms extended, 96, which is 8 feet, spans, or 96 inches.

Units of measure were transmitted from one people to another in ancient times, and thereby a certain amount of uniformity arose. The cubit was the standard used in building the great pyramids, and is the unit of several Egyptian monuments. It is found at Babylonia, Assyria and Asia Minor. Ten ancient buildings in all give a mean of 20.63 inches. It was divided in to fifths. The Greek foot was three fifths of the cubit. Thirteen buildings give an average of 12.45 inches, which is the usual Greek unit. This foot originated in Babylonia. The digit was of wide extension during ancient times. It was found as a standard in Egypt, Asia Minor, Persia, Assyria, Nimrud or Nineveh.

There are 28 digits in a cubit, making the length of a cubit .729 inches. The hypothesis that the ancient system of measurement was founded upon the ascertained length of a degree of the meridian, and that the measurements of the great pyramid of Gizeh indicate that these units are purely imaginary. The first measurement of a meridian on record was by Eratosthenes 200 B.C., and so could not have been contained in the pyramid.

In this connection it may be well to notice that there are different units of measurements in different countries or else in the different parts of the same country. To illustrate, Mr. A. L. Lewis, the English archæologist, has reduced the great circles of Great Britain down to a uniformity of measurement with the multiple of a unit which measures 11.64 inches, while Mr. J. T. Bent and Mr. R. M. W. Swan have reduced the ruins of Mashonaland to a uniform measurement, the common divisor of which is a measure of 17.17 feet; three instances having a measure of 17.17 feet; three having double that, 34.34 feet; seven having 54 feet; three, half that, 27 feet; and two instances nearly twice 54, or 107.4-5 feet.

The division of the English circles of Stanton Drew is as follows: One circle measures 100 feet of 11.64 inches; a second measures 150 feet, about; a third within $7\frac{1}{2}$ inches of 380 feet. The length of a straight line from the center of the curve through

the great circle to the centre of the least circle, about 1,310 feet of 11.54 inches.

All the units I have spoken of were in use round about the Mediterranean from two to three thousand years ago, and may have come here at various times and in various ways, the first to be brought here being, perhaps, by no means the oldest; but it does not necessarily follow that the units I have mentioned in each case were actually used; I can only say that it suits the measurement, by working out in even numbers better than any other. The unit of measurement is, however, quite a secondary thing, and can, perhaps, never be proved, but only inferred; the great point to be established is that some of these apparently rude structures were in reality laid out in careful proportions, for some purpose, or with some idea, which we may hope at some time or other to discover."

A similar uniformity has been recognized among the circles and squares of Ohio. The writer has also noticed a very remarkable system of measurements among the effigy mounds of Wisconsin. Still the diversity is so great that it seems better to acknowledge the hit-and-miss way of taking the arm and finger, etc., as the unit of measurement than to hold that there was any definite and fixed standard.

MOSES AND THE PATRIARCHY.—The thought that Moses was more in sympathy with the ancient patriarchy than with the civilization of Egypt has been advanced by a certain writer. This may seem gratuitous to many; yet we must remember that the church in the wilderness was nothing more or less than a great patriarchal family, of which God was the father and the different tribes were the members. They were encamped around the central place, where was the altar of sacrifice, which typified the family hearth and the tabernacle, the central tent. The pillar of cloud symbolized the shekinah. The lustrations and ceremonies represent the washings and purifying or cleansing customs, which insured cleanliness among the people, and the whole system was one which grew out of the family government. There was no property in severalty. The patriarchal simplicity was, to be sure, disappearing, yet its autonomy had not been destroyed, nor had its sacred spirit ceased. The government was totally unlike that which existed in Egypt. The republican motto is now: "A church without a priest, a state without a king." Yet in the first great republic, "prophet, priest and king" were the offices which centered in the patriarch himself. They became afterward differentiated. The government was very different from that which prevailed when the king became a despot and was priest as well as king. The authority was such as came from the natural descent, rather than from either usurpation or erection. It was not a delegated authority nor one that was as-

sumed. There was no standing army, no police, no elections, no force. Parental descents were the sources of power and the bond of unity. Education alone did not suffice; great mental ability did not avail. Wealth was not a substitute for religion. Art cut scarcely any figure. Philosophy did not assert itself above true wisdom; did not cloud the vision. There was no such dramatizing of religion as appears among the wild tribes. Superstition had no power. It was the most healthful and at the same time the most natural of religious systems. The fatherhood of God and the brotherhood of man were both recognized. Men did not resort to the temple nor to the halls of justice to enforce them, but they were wrought into the very fibre of the people, and were essential elements of religion. The twelve tribes marched with a wonderful force through the wilderness because they were a unit in thought, in history and in religion. Fear of them was felt throughout the entire land. They differed from the tribes which surrounded them, but which were hostile to one another, each one having his own habitat, each his own chief, and resembled the Bedouins of the present time. Few nations have had an origin similar to this; no nation ever had a religion like it. There are nations where the tribal state is continued; others which have kept alive the memory and influence, though they have grown out of the tribal state. But the patriarchal religion was founded upon the tribal life. The elders were the heads of the houses, and represented the tribes very much as the sachems in American tribes represent the clans. There was a reverence felt for them which is not felt for rulers at the present time.

BIBLE NAMES IDENTIFIED.—Dr. A. H. Sayce has been continuing, or following up, the cuneiform text, and has been able to identify a number of names which are familiar to most Bible readers. The following sentences are from the tablets of Tel-el-Amarna: "From Ninnetriya the great king, the king of the land of *Missari* (Mizraim): To the Hittites from the land of Eigaid: I sent to thee wood for a chariot. By the *Irsappa*, the messenger, one brick of gold weighing twenty mannas I sent."

Upon the Tel-el-Amarna tablet the name of *Iutna* has been recognized, and identified with Carchemish, the name of a Babylonian king, which is compounded of two words signifying the sun god and the moon god, shows that the Bible custom of applying names of divinities to individuals was common in Babylonia. On the Babylonian tablets of the age of *Khammurabi*, one name, "Betani," which is similar to the Biblical "Bethuiel," and the "Bet Ilu" of the Tel-el-Amarna tablets.

TOMB OF KING MENES.—A letter from Professor Sayce announces the fact that the royal tomb, discovered by M. de Mor-

gan last spring, at Negada, turns out to be that of King Menes himself. Dr. Borchardt has just found his name on an engraved plaque of ivory disinterred from the tomb. On other objects only the *ka*-name Aha is met with. Among the objects found in the tomb are small vases of obsidian, turned on a lathe; the obsidian appears to have come from the Ægean, as the nearest source of it to Egypt is the island of Santorin, the ancient Thera. An ivory dog, also found in the tomb, is one of the finest specimens of Egyptian art that has come down to us. The body (or mummy) of the king was buried in the Babylonian fashion, but fragments of it are now in the Gizeh museum. Three of the kings whose remains have been discovered at Abydos, by M. Amélineau, have been identified, by Dr. Sayce, with Usaphaes, Mielidos, and Semempses, of the first dynasty.

DR. SELAH MERRILL has been reappointed United States Consul at Jerusalem; a post which he has formerly filled with distinction.

THE NEW BOOK OF THE DEAD.—Dr. E. A. Wallace Budge, keeper of the Egyptian and Assyrian antiquities of the British Museum, has just issued, through the house of Kegan, Paul, Trench, Trubner & Co., a new edition of the Book of the Dead in three volumes. The third volume is illustrated by three large *fac similes* in full colors and eighteen plates illustrating the Palæography from B. C. 3000 to A. D. 200, all at the cost of £2 10s.

THE BIBLICAL WORLD.—*The Biblical World* for March has an illustrated article on Capernaum by Hon. Selah Merrill, D.D., LL. D. This is a most excellent magazine for clergymen and Bible students. It represents no fund and is confined to no particular line; is not wholly archæological, but contains enough for practical purposes. It deserves extensive patronage.

THE LITERARY DIGEST.—Mr. James Wickersham's article on the "Chinese and Mexican Calendar," in the November and December number of this magazine has been quoted by the *Literary Digest* with favorable comments.

HIEROGLYPHS.—The "Pictorial Origin of the Hieroglyphs" is the subject of an interesting article by Rev. J. C. Ball in the January number of the *Proceedings of the Society of Biblical Archæology*, London. Mr. Ball is one of the best cuneiform scholars in the world.

EDITORIAL.

THE GRAND CANYON OF THE COLORADO.

[We have given considerable space in this number to a description of the Great Plateau of the southwest, and illustrated the scenery by a series of beautiful engravings which have been kindly loaned us by the Santa Fe Railroad. The frontispiece, which represents the Grand Canyon of the Colorado, was drawn by Thomas Moran, the celebrated artist. There have been a number of descriptions of this canyon. The best of them have been furnished by the geologists, Major J. W. Powell, Mr. Dutton and others.]

Dr Newberry, who accompanied Lieut. Joseph C. Ives on his exploration of the Rio Colorado from the Gulf of California to the head of navigation, 350 miles, and then crossed the continent, traversing the country on the 35th parallel, was one of the first geologists who ever wrote a description of the Grand Canyon.

His description is graphic, and at the same time is full of the geological facts which came from his general knowledge of geology, and his great power of generalization. We shall, therefore quote from it extensively. He says:

"The entire Colorado basin consists of a series of table lands, piled up one above another, and covering the whole country. In elevation, they vary from 4,000 to 7,000 feet, and reach in some places a height of 8,000 feet above the sea. They succeed each other in a series of steps. To what cause is due the mesa, or table land plateau of the country? This much we can fairly infer from the observations already made; that the outlines of the North American continent were approximately marked out from the earliest palæozoic times. Many thousand feet of sedimentary strata were converted into dry land, by the gradual upheaval of the plutonic rocks, upon which they were deposited. Gradually they were raised, without much disturbance, to their unequal positions, though lines of more powerful upheavals can be traced in the increased heights of the table lands, while here and there volcanic forces have thrust up huge masses of igneous rock through the sedimentary crust, forming mountains more or less isolated and of great beauty, which contrast strongly with the eroded mesa lands, among which they rise. Such are the San Francisco mountain, Mt. Taylor and Bill William's mountain.

"The plateau of the Colorado itself has been raised to an average of 7,000 feet. It extends in a north-northwest direction from a point southeast from San Francisco mountain across the Little Colorado into Utah, and includes the country traversed by Grand and Green river, as well as a more considerable part of that crossed by the Colorado, Chiquito and the San Juan.

"Further from their source these two rivers and their tribu-

taries, in their passage over the table lands of the great central plateau, have cut their way in channels which deepen continually as they advance, and also present fewer and fewer open valleys as they progress, to break the narrow, sunless perpendicularity of their gigantic walls.

"In the case of the Colorado, this penetrative tendency culminated in a canyon 3,000 to 6,000 feet deep. Over the plateau the Colorado river flowed for at least 300 miles of its course, but in the lapse of ages its rapid current has cut its bed through all the sedimentary strata, and several hundred feet into the granite base on which they rest.

"For three hundred miles the cut edges of the mesas rise up abruptly, often perpendicularly, forming walls 3,000 feet to over a mile in height. This is the Grand Canyon of the Colorado, the most magnificent geological section, of which we have any knowledge.

"The plateau itself, like the great canyon of the Colorado, is bounded by high perpendicular walls which belong to a vast system of erosion and are wholly due to the action of water. Probably no where in the world has the action of this agent produced results so surprising as regards their magnitude and peculiar character.

"By a glance at the map it will be seen that this great watershed made up of the San Francisco group, the Mogollon, and the spurs of the Rocky Mountains which throw the water into the Colorado from the south, southeast and east, forms a semi-circle imperfectly parallel with the course of the Colorado into which the drainage falls."

Dr. Newberry thus speaks of the Moqui country and the district beyond:

The mesa is geologically and physically the highest which we actually passed over on our route. We seemed to be rising step upon step and mesa upon mesa, until we reached this plateau. At the Moqui villages the strata forming great tablelands began to rise toward the east. Near Fort Defiance, the summit has an altitude of 8,000 feet. Here they show the disturbing influence of a more westerly axis of elevation, namely that of the Rocky mountains. In the interval between Fort Defiance and the Rio Grande, the great volcanic mountain, Mount Taylor, like San Francisco mountain, has broken through the crust of the sedimentary rocks and poured their floods of lava over the surface. Beyond this is the valley of the Rio Grande, which runs in a deep gorge between the folds of the mesa, the tributaries to which have cut deep seams, leaving many abrupt tongues of land high peaks, which are called "portreros," among which the Cave-dwellers made their homes. To the east of the Rio Grande rises another plateau which is creased by the wearing of the Pecos river, then come the foothills of the Rocky mountains.

It was across this great plateau that the Spaniards made their way in 1540, and discovered the Grand Canyon.

Professor Winthrop has translated the reports which were made of this expedition by Castaneda, also a letter from Mendoza to the King, and from Coronado to Mendoza, all in the

year 1540.* He also furnished a description of the appearance of the cavalcade. The following is the description :

It was a splendid array as it passed in review before Mendoza on Sunday morning, February, 1540. The young cavaliers curbed the picked horses from the large stock farms of the viceroy, each resplendent in long blankets flowing to the ground. Each rider held his lance erect while his sword and other weapons hung in their proper places at his side. Some were arrayed in coats-of-mail, polished to shine like that of their general, whose gilded armor, with its brilliant trappings was to bring him many hard blows a few months later. Others wore iron helmets, or visored head pieces, of the tough bull hide for which the country has ever been famous. The footmen carried crossbows and harquebuses, while some of them were armed with bow and shield. Looking on, at these white men, with their weapons of European warfare, was the crowd of native allies, in their paint and holiday attire, armed with the bow and club of the Indian warrior. When all of these started off the next morning, in duly ordered companies, with their banners flying. Upwards of a thousand servants and followers, black men, red men, went with them, leading the spare horses and driving the pack animals bearing the extra baggage of their masters, or herding the large droves of "big and little cattle," of oxen and cows and sheep, and maybe swine, which had been selected by the viceroy to assure fresh food for the army on its march. There were more than a thousand horses in the train of the force, besides mules loaded with camp supplies and provisions, and carrying half a dozen pieces of light artillery--the pedreros or swivel guns of the period.

Coronado entered the wilderness on St. John's eve, and in the quaint language of Hakluyt's translation of the general's letter, "to refresh our former travellers, the first days we found no grasse but worser way of mountains and badde passages." The first few days of the march were very trying; the discouragements of the men increased with the difficulties of the way, but they proceeded until they came in sight of the Seven Cities. The inhabitants had assembled in a great crowd in front of the place, awaiting the approach of the strangers. Coronado prepared for an assault on the city. The natives showered arrows against the advancing foes, and as the Spaniards approached the walls, stones of all sizes were thrown upon them. The courage and military skill of the white men proved too much for the Indians. They were driven from the main portion of the town. Food, which they needed a great deal more than gold and silver, was found in the rooms. During the night the Indians packed up what goods they could and left the Spaniards in undisputed possession.

The first expedition toward the east was sent out August 20th, in charge of Alvarado, who reached the river Tiguex (the Rio Grande), September 7, and spent some time in visiting the villages, making headquarters at Tiguex, near the site of the present town of Bernalillo. Alvarado sent to the natives the names of eighty villages, which he had learned from the Spaniards, and reported that these eighty villages were the best that had yet been found. He then proceeded to Cicuye, or Pecos, the most eastern of the settled villages. The first winter spent in the pueblos of New Mexico was a severe one, but the strangers were comfortably domiciled in the villages of the country, in which the owners left a plentiful supply of food. The natives assumed a hostile attitude, and were subdued only after a protracted struggle. The army started on its return from Tiguex to Cicuye, and reached Mexico in the spring of 1542.

~~Coronado found no gold in the land of the "seven cities" or~~
~~in the land of the "seven cities" but his search added very much to the geographical~~
~~knowledge of the Spaniards, and resulted in the discovery of one~~
~~of the most stupendous objects on the American~~

~~continent.~~

continent, and, in fact, on the globe, namely, the Canyon of the Colorado,—a canyon which will never cease to excite the admiration and wonder of tourists and all who make the effort to see it.

RELICS FROM THE NORTHWEST COAST.

We have in this number descriptions of the relics found on the ancient village sites of Ontario, and the kitchen middens of the northwest coast. These relics form an interesting series—a series which seems to represent a particular stage of progress and a unique social status. What that status was is not so easily defined, yet, if we take the classification given by Mr. L. H. Morgan, we should say that it represents the middle stage of savagery; a stage which was occupied by all the hunter tribes, especially those situated north of the Great Lakes. The lowest stage does not seem to be represented except by the hyperbo-reans, who were fishermen, and it is a question whether they ought not to be classed with the hunters. All of these tribes evidently belonged to the stone age, but perhaps that part of the stone age which intervened between the paleolithic and neolithic, though so far as the date can be ascertained they came quite late in the neolithic age, but the grade of culture is earlier and more primitive than any which has been identified elsewhere.

The large majority of the relics are from bone and from horn, and if we take the material for our guide we might be free to introduce a new division and call it the "bone age." The characteristics of this age might be described as follows:

(1) The age was one of considerable limitations and only likely to have appeared in cold climates, where the cereals were generally lacking; where agriculture was the people seem to have been in the lowest part of the stone age.

(2) They gained their subsistence by hunting as well as fishing, but were nevertheless sedentary and made their homes in villages, and suggested the thought that the people of the kitchen middens were also villagers.

(3) The relics resemble those which are found in the caves of the reindeer period in Europe, but there are no remains of reindeer or other extinct animals; consequently the people must have been in the neolithic and not in the paleolithic age.

(4) There was but little commerce and contact with extra limited tribes, though there were occasional migrations, which brought the people from the interior to the sea coast.

(5) There was scarcely any quarrying of stone, for their weapons or tools. The material of which they were made was

such as could be picked up on the surface, or gathered from the debris of their camps.

(6) There was but little pottery made, and that of an inferior sort. In some parts of the country, especially on the northwest coast, wood was used instead of pottery for all of the vessels, utensils, domestic ware and boxes, as well as canoes and paddles were wooden.

(7) In the interior, there were no totem poles, and very few masks have been discovered, these being confined to the Pacific coast and the region west of the mountains.

(8) There was a social life which was the natural result of sedentary habits. The long winters were spent in the villages, but there were many dances and feasts, which required much decorating of the persons, and the wearing of masks. The people which best represents this grade of culture and social status is the great Tinnah stock, a stock which spread from the Atlantic to the Pacific, and lay like a great block across the upper part of the continent, being divided only by the range of mountains, which extend far to the northward. The Athapascans belong to the same general family, possibly the Algonquins were once connected with them, but they, in their migrations southward, became separated from the parent stock, adopted new customs and reached a new status. We cannot classify these relics with those of the Eskimos, nor with those of the Algonquins, any more than we can with their languages.

DUALISM.—CONTEST BETWEEN GOOD AND EVIL.

The common opinion with those who are unacquainted with archæology and ancient history, is that the distinction between good and evil, which is so sharply drawn in modern times, was always so, that man in his earliest condition and primitive state was as sensitive to this point as in his later and highest state. The study of the lower races, especially the uncivilized tribes in America and Africa, does not bear us out in this opinion, and no more does the study of the ancient systems of the east. The scriptures, to be sure, speak of the knowledge of good and evil in connection with the tree which was planted in the Garden of Eden side by side with the "tree of life." The two trees constituted a dualism of thought and condition.

The very next chapter speaks of the banishment of the first pair from the garden and the refusal of access to both trees. The only inheritance was that which came from the remembrance of the sin and the consciousness of the loss which came from the banishment from God's presence.

The question arises, whether there is any such record in the

mythology or history of any other nation, whether there is any parallel to it in the sacred literature of the east. There is an article in the "Journal of the Transaction of the Victoria Institute," written by Sir Monier Williams, D. C. L., on the Dualism of the Brahmanical and Zoroastrian Philosophy, in which are quotations from Rig-Veda hymns:

In the beginning there was neither naught nor aught;
Then there was neither sky nor atmosphere above;
Then there was neither death nor immortality;
Then was there neither day nor night, nor light nor darkness;
Only the Existent One breathed calmly, self contained;
Naught else than that there was, naught else above, beyond.

In ancient Brahmanas, as well as in Upanishad, it is affirmed that "the one being was not happy, being alone;" he caused his own Self to fall in twain, and the idea of a second principle, as necessary to the act of creation, is vaguely implied. "In the beginning there arose in that one being a desire, which was the primal germ of mind and the subtle bond of connection between entity and nullity." A still older idea was the supposed marriage of "Heavenly Father with Mother Earth" for the creation of God's men, and all creatures.

This is the form which dualism assumes among nearly all primitive races in which nature worship prevails. This is personified in the myths of America, which represent the sky as the father and the earth as the mother, though there is perfect harmony between the two. Afterward there comes the contest between the two brothers which represent the east and the west, the dawn and the darkness, who contended with one another before they were born. The birth of the younger one resulted in the death of the mother; but the form which it assumed in India was represented by the phallic symbol—a symbol which was rare in America.

It is strange that with all the loftiness of thought, that there should be so many symbols throughout the entire east, especially in India and China, which to our minds convey impure thoughts, and that the generative powers were made objects of worships—idols in fact. This symbol did not prevail in America to any great extent. It appears among the architectural works of the Mayas in Central America, and on this account many think they discover the traces of Buddhistic influence. But, even among these tribes, there was not any such abundance of the phallic symbols as prevailed in India or China.

Mr. Williams says: "I think I am justified in saying that a kind of dualistic woof everywhere underlies the monistic and pantheistic warp of Indian philosophy. Such an assertion is borne out by ocular observation, for it is certain that the idolatrous worship of the Lingam and Yoni united in one image,

symbolizing the union of creative principles, meets the eye in every part of India. All Sanskrit literature, too, teems with the description of the battle going on between good and evil demons. Krishna, a form of Vishnu, is seen bruising the head of the malignant serpents. Kāliya and Siva trample, during a wild dance, the prostrate body of the arch-fiend *Tirpura*. We read, too, in the *Gathas*, of the Persians, that Zoroaster began his mission by declaring that: 'In the beginning there were two spirits, each active,—the good and the bad.'

"I will declare the two primeval spirits of the world, of whom the better one thus spoke to the evil one, 'Neither our minds, nor our doctrines, nor our understandings, nor our beliefs, nor our words, nor our actions, nor our laws, nor our souls agree.' The creative energy was called Ahura mazda's beneficent spirit (Spento Mainyus), and the destructive force was called his maleficent spirit (Angro-Mainyas, afterward corrupted into Ahriman), but only because the idea of evil is connected with dissolution."

This dualism appeared late in history. The question is, what was earliest conception. Was it polytheistic, monistic or dualistic? We have to go for this to the cuneiform inscriptions in Chaldæa.

The inscriptions from Telloh reveal it, perhaps, better than any other documents accessible to the public: *First*, that the genealogy of the gods was established, and established even in many minute details as early as the time of the patesis of Shirpurla. *Second*, that in this genealogy the order Anu, Bel and Ea was fixed. A glimpse of this fact afforded by other early records also. *Third*, that Anu, Bel and Ea were clearly recognized as standing at or near the beginning of the genealogy. They are distinctly parent gods. These three matters are of importance in the history of religion.*

Another interesting point is in reference to the supremacy of certain gods. It is claimed by some that monotheism was reached in Peru as well as in Babylonia. There is considerable doubt in reference to this. The opinion of Wilkinson and others was that the worship of Saturn or Uranus as the chief god, and was equivalent to the worship of one god, as he was placed above, as Zeus, and supposed to reign supreme in the heavens. Wilkinson holds that the earliest form of religion was monotheistic, and that Uranus was supreme.

In India, each of the Aryan families claim their own chief god, and there is no supreme Dyaus, or etymologically equivalent supreme form in Teutonic or Slavic mythology. In Rome there is a Mars-piter as well as a Ju-piter. In India itself *pita* is said of Dyaus no more than of other gods. Moreover, the instances where Dyaus is called father makes it evident that he is

*See Gods of Shirpurla, by Sir John D. Davis, in Proceedings of American Oriental Society

not regarded as a Supreme Father, but as a father paired with Mother Earth. Now there is no advanced earth-cult in the Rig-Veda. At most, one has a poem to Earth, called Mother, as a matter of course; but no worship of earth as a great divinity over the gods is found. This is just the position taken by Dyaus. He is, as the visible sky, not the Father, but one of many "father"-gods. That he fathers gods means nothing in the hyperbolic phraseology of the Rig-Veda. The Dawn and Cyrrus are his sons, but Dawn may be sired by Sky without much praise. Indra destroyed Dyaus, though the latter is called his father. In invocations Dyaus is grouped as one of the many gods, or more often as one of the pair "Sky and Earth," Father and Mother. Dyaus is called the Great Father, just as it is said that Dyaus is the name of Indra's strength, as is shown by the following passages: "Dyaus is my father, my mother is the Earth;" "Father Dyaus;" "Mother Earth;" "Brother Fire;" "Kind Earth;" "Father Dyaus, grant us place." Often it is only in connection with the nourishing Agni (fire) that Dyaus is lauded. "Thou, O Agni art our Prometheus, our Father." "Thou, O Indra, art our Prometheus and like a father; so kind is father." Varuna is father, Yame is father, and Soma is father, and Agni is father in two or three passages.

They that claim an original supreme Aryan Father Sky, must point to him on early Aryan soil or in India. They cannot do this. There is no evidence whatever that Dyaus, in the Rig-Veda, is a decadent supreme. The testimony shows that the Slav raised "Bhaga," and the Teuton raised "Wotan Odin." The Greek raised Zeus out of a group of gods to be chief. To the Hindu, Dyaus was never supreme, but only one of many protectors, whose fatherhood is not more pronounced than is that of other gods. The contest is better represented by the myths in reference to the state of the dead.

The Gods of Shirpula, according to Prof. John D. Davis, of Princeton, received homage by reason of their being the mothers, brothers or sisters of the principal divinity. Families of gods, or groups of families, were worshiped. A quaternion in the city of Babylon, consisted of the tutelary divinity of each of the four towns, and his family. These four groups were bound together by the mutual kinship of the central members. No deity outside of the group is honored with a house. Beside them was a great and terrible god, called Shitlamtandua, who was the ruler in that realm to which every soul sooner or later goes.

It is the rule of the Rig-Veda that the spirits of the departed live in the top of the sky and Vishnu is the first god to represent the sun home of souls—earth souls, star souls, moon souls. He is a mystic god, the keeper of the souls of the dead.

BOOK REVIEWS.

CONTRIBUTIONS TO THE SCIENCE OF MYTHOLOGY. By Rt. Hon. F. Max Muller, K. M. Longmans, Green & Co.; New York and Bombay, 1897.

There are three schools of mythological study. The first has for its object the superficial study of the myths in order to identify the originals of the statues bequeathed by the great sculptors of antiquity; the second considered the ancient gods and goddesses as political creations, similar to King Arthur, Faust, Don Quixote, Werther. It classed the ancient mythology, with the Niebelungen in Germany and the Edda songs; the third has for its object the study of the religions of the earth, and the comparison of the concepts which are formed in reference to the various divinities. These religions may be divided according to the stages of development, starting with the concept of the gods as agents of "nature" or "nature powers."

They pass to the henotheistic and polytheistic stages as necessary preparations for the monotheistic stage. It is perhaps inevitable that the chief of the old gods, whether Zeus, Indra or Ormuzd, should have been identified as the Supreme Being which we call God. In this point the mythologists differ from the theologians and the religionists of the orthodox school. It has generally been held by the latter that many heathen and pagan gods were idolatrous perversions of the one true God, that all mythology was the result of a decadence or apostasy from the primitive worship of one God. On this point Max Muller, the author of these two volumes, has a ways taken sides with the mythologists, though he was led by the study of the Aryan religions to make the worship of the "bright heavens" the earliest form, but totemism, fetichism, and demonism were local "cults."

He speaks of this primitive religion as if it must be the earliest in time, whereas the uncivilized races exist to the present day, and some not only exhibit the most primitive, or at least the rudest types of religion, but also the earliest which have ever existed, for totemism, or animal worship, is prevailing now far more extensively than it did in the earliest ages of the world. The student of history claims that the earliest period was the most advanced in many respects; for Chaldea, Egypt, China, not to speak of the classic lands, start off in the full bloom of an early civilization. Their religion corresponds with their social status. There are limits, to be sure, of a prehistoric stage, but this author maintains that fetichism and totemism never existed as a religion at all, and opposes the theory which De Brosses and Comte advanced, that there was an universal primitive fetichism, holding that totemism was a corruption of a term; that the name belonged originally to rude emblems of animals placed by red Indians in front of their clearings or settlements, as the arms of a city used to be placed over the gateway of its walls. With Wilkinson, he maintains that animals were worshipped, or deified, because they represented certain attributes of a divinity,—the bull representing strength, the owl wisdom. Animal names were used also as metaphors. India was called a cow, a horse a swan, a bird merely in a poetical sense. Herbert Spencer's theory of a primitive ancestor worship he does not agree with, and says a study of the Vedic literature would have shown him that ancestorship pre-supposes Deva worship or nature worship. The Eskimos, however, are known to have deified ancestral spirits, making them demons who inhabited the water, and demonism was the religion of these rude fishermen, as totemism was the religion of the hunters, and ancestor worship the religion of the semi-civilized tribes in the northwest. He denies that the custom of taboo-

ing animals, or forbidding them to be used as food, was a survival of totemism. The wheel, or circle, may have been a fetisch, though it represents the sun, for the sun symbol was often placed as a charm upon the breast, showing that the spirit after death was akin to the sun.

The true problem in mythology is stated in the following language: "We want to know how these so-called gods came to exist at all, and what was the meaning of all the facts and circumstances related of them? After they had been superseded by the true God, was there no substance left, no real personality behind their personal adventures? The Jewish prophets who aspired after the true God, and were no longer satisfied with simply a god above all gods, nevertheless, clung to the name of Jehovah. We have advanced beyond the Jews as our God has advanced beyond Jehovah, even as Jehovah has advanced beyond Elohim of the Gentiles; but there is a reality to Jehovah with us and the continuity of thought is manifest."

"These sentences furnish the key to the whole problem according to the theory now held. Nearly all serious students of mythology are agreed on this fundamental principle, that the gods were originally personified representation of the most prominent phenomena of nature."

The chief objection to the explanation is that the heathen pantheon is so unreal, and it would be unscientific to take the imaginary "culture heroes," or the nature divinities, as the representatives, or anticipative type of the God we worship.

If we are to trace back the personal divinities to fossil specimens at all, we should like to know whether they are true representations? Is the God of revelation the god of mythology? We think not, for natural science refutes the supposition. The creator of the world is not male and female; nor is he a demon, or the spirit of an ancestor. Science, some say, may not teach the personality of God, as revelation does, but it is as we have said, more in accord with revelation than it is with mythology.

It is very interesting to trace the resemblance between the myths and symbols of the different tribes and races, and so recognize the different grades through which all mythology passed, learning by these means about the various rites and ceremonies which attended each form, and bring out the fundamental elements of hierology. Still it is well to take this book as an aid, for its range of vision is very broad. It takes in the historic races, such as the Aryans, Semitics and the so-called Turanians, and shows that the conceptions are very similar.

The Finns held exactly the same view of the four gods who superintend the sky, the earth, the water and the fire, as the North American Indians. The Aryans held the same view of the personal divinities as the Semitics and the Mayas. There were variations according to surroundings, but not enough to make ethnic distinctions.

The elements, the nature powers, the heavenly bodies, the dawn, the darkness, storms and clouds, were personal beings, which must be appeased, or at least directed by them. They dimly apprehend the personality of God. What Wordsworth said of the peaks of a Swiss mountain, hidden behind the low clouds, that you felt it to be there though you could not see it, applies with equal force to the Infinite, hidden behind the low clouds of finite things.

This actual sensation of a beyond in all things, whether great or small, seemed to me the true foundation, or the *sine qua non* of religion, because it is the nature of all religion to be transcendental, *i. e.*, to go beyond the senses. This, if I understand the various religions of the world rightly, was the canvas on which each of them drew the outlines of their gods and heroes; nay, the whole picture of their religion and philosophy.

THE KALEVALA—The Epic Poem of Finland into English. By John Martin Crawford: Vols. I and II: The Robert Clarke Company, 1898.

The Kalevala is the book which suggested to Longfellow the style of the charming book, *Hiawatha*, accordingly it seems, when we come to read it, like meeting an old friend, or like coming back to the scenes of our youth and recalling the associations of the past. Finnic literature is not

familiar to American readers except as it is presented in this book. There is, however, a simplicity and *naïveté* about it that is very charming. It is very clean and free from the vulgar associations which sometimes come to modern Russian literature.

The Finns belong to the great *Turanian* or *Ugric* stock, and are allied to the Accadians, but all that magic and strange mythology which abound in the early Accadian literature are absent from the *Kalevala*. It is more like Homer's *Iliad* and the *Odyssey*, in that it furnishes pictures of houses and lands and domestic life, with ancient bards and famous singers, enchanting songs to the moon and fir trees, the Great Bear and the day stars. The blacksmith "knocking with his copper hammer," the maiden covered with golden necklaces and robed in finest raiment, the "whip adorned with jewels," "the fleet-footed courser which makes the snow-sledge creak and rattle," show the "age" which it represents.

It is not the Stone, Copper or Bronze, but the Iron Age, for the metal artist.

"Quickly breaks the plow in pieces,
Throws them back within the furnace,
Lets the wind attend the bellows;
Let the storm-winds fire the metals;
Fiercly vie the winds of Heaven;
East wind rushing, west wind roaring.
South wind crying, north wind howling;
Blow one day and then a second;
Blow the third from morn till evening,
When the fire leaps through the windows;
Through the door the sparks fly upward;
Clouds of smoke arise to Heaven;
With the clouds the black smoke mingles,
As the storm winds apply the bellows."

The translation is in wonderful accord with the subject and fitly represents the style of the book, though the original language is unfamiliar. Nature divinities are represented as interested in human affairs and helping in the love scenes, and in the tragedies. We miss the old *Nokomis* and the hero *Hiawatha*, and the maiden *Minnehaha*, and the scenes are strange and far away, and yet, they bring the Finnic people from their distant northern homes very near to our American hearts.

SEX WORSHIP. By Clifford Howard, Washington, D.C., 1897.

This book seems to be extensively advertised, and is probably making its way, like a slimy snake, into the libraries of gentlemen, who hardly feel free to expose its true character. It is only another of those books which have been tabooed by the polite public, and are held in secret by those who read them. It has not even the elevation of thought which the old Hindus and pagans sometimes reached when they spoke of the phallic symbol as the sign of the generative power. To make the sexual instinct a "divine passion" is not to be commended, even if it was at the basis of the "sacred mysteries" of old.

THE ILIAD OF HOMER. Translated by William Cullen Bryant. Two volumes in one. Houghton, Mifflin & Co., Boston.

THE ODYSSEY OF HOMER. Translated by William Cullen Bryant. Houghton, Mifflin & Co., Boston.

Bryant's translation of the *Iliad* and the *Odyssey* brings us as near to the style, spirit and mind of the great poet, as though we were reading the Greek itself. We almost forget that there is any change of language, and it seems more like reading the original and drawing from memory of our own college translations. The great achievement is, that it is put into poetry which is as beautiful as that which charmed the ears of the Hellenic people.

There is a great advantage to modern students in such reproductions, for they are like the half-tones which are taken from photographs: they bring the scenes of the past very near to the present, and make us familiar with classic thought and customs, without the tedious process of learning the language. There is another advantage: they bring back the poetry which was likely to be banished from the minds of students, by the crowding out of the dead languages and the bringing in of the natural sciences. They are already producing a reaction in favor of the imaginative and picturesque, and are likely to preserve the culture which has come from the study of the classics.

THE SPANISH PIONEERS. By Charles F. Lummis. [Illustrated]; A. C. McClurg & Co., 1893.

This work should be read in connection with the various reports on the Great Plateau and the people who then dwelt there, for it gives a history of the early explorations. The best review of it will be that which comes from quoting the authors language about the exploration of the Spanish:

"After the discouraging experiences of Coronado the Spaniards for many years paid little attention to New Mexico.

"When ill reports of Coronado had been forgotten, there began another Spanish movement into New Mexico and Arizona. In 1581 three Spanish missionaries started from Santa Barbara in Mexico, with an escort of nine Spanish soldiers under command of Francisco Sanchez Chomuscado. They passed up the Rio Grande to where Bernallillo now is, and there the missionaries remained until assassinated by their treacherous flock.

"In the following year Antonio de Espejo, a wealthy native of Cordova, started also from Santa Barbara with fourteen men, to face the deserts and the savages of New Mexico. He marched up the Rio Grande to a point above where Albuquerque now stands. He visited the cities of Sia, Jemez, lofty Acoma Zuni, and the far off Moqui towns, and traveled a long way into northern Arizona. Returning to the Rio Grande, he visited the pueblo of Pecos, which was then inhabited, went down the Pecos river into Texas, and thence crossed back to Santa Barbara.

"In 1590 Gasper Castano de Losa, lieutenant-governor of New Leon, made an expedition into New Mexico, but without the consent of the Viceroy. He came up the Rio Grande, but at the pueblo of Santa Domingo was arrested, and was carried home in irons.

"In 1595 Juan de Onate, who may be called the colonizer of New Mexico, and who was a native of Zacetacas, Mexico, and owned rich mines in that region, made a contract with the viceroy of New Spain to colonize New Mexico at his own expense. He made all preparations, and fitted out his costly expedition which had cost him the equivalent of a million of dollars. He took with him four hundred colonists, including two hundred soldiers, with women and children, and herds of sheep and cattle. Taking formal possession of the country, he moved up the Rio Grande to where the hamlet of Chomito now is, and founded San Gabriel, the second town in the United States. He was successful in putting down a revolt at Acoma, and in 1604 marched with thirty men from San Gabriel across the desert to the Gulf of California. In 1605 he founded Santa Fe, the city of the Holy Faith of St. Frances; and in 1606 he made an expedition to the far north-east.

"New Mexico at the beginning of the seventeenth century, after the Spaniards had spent a hundred years of ceaseless exploration and conquest, had hundreds of towns which Spanish missionaries were attempting to civilize.

"The Rio Grande valley, in New Mexico, was beaded with Spanish settlements, from Santa Cruz to below Socorro, 200 miles; and there were also colonies in Taos, in the extreme north of the territory. There had been expeditions, which had penetrated the staked plain, Llano Estacado, to the southeast and others to the far northwest." It is supposed that the region of the Cliff-dwellers was reached.

"There were then 1300 Spaniards on the Rio Grande, all living in Santa

Fe or in scattered farm settlements. The life of the colonists was a daily battle with nature, for New Mexico was ever a semi-arid land. They were surrounded with danger, for there were frequent incursions of the cruel Apaches, and there was no rest from the attempts of the Pueblos at insurrection.

"In 1580 the great revolt of the Pueblo tribes occurred. Thirty-four Pueblo towns were engaged in it. It was led by a dangerous Tehua Indian named Pope. Secret rumors had gone from pueblo to pueblo, and the murderous blow fell upon the whole territory simultaneously. Over 400 Spaniards were assassinated, including 21 of the missionaries. Antonio de Otermin was governor of New Mexico. He was attacked in his capital of Santa Fe, and 120 Spanish soldiers soon found themselves unable to hold it against their swarming besiegers. After a week's desperate defense, they fled, taking their women and children with them. They retreated down the Rio Grande, and reached the pueblo Isleta in safety, but the village was deserted. The Spaniards were obliged to continue their flight to El Paso, Texas, which was then a Spanish mission.

"For ten years New Mexico was deserted by the Spaniards, though frequent invasions were made from El Paso. In 1692 Diego de Vargas marched to Santa Fe and thence to Moqui with only 89 men. He visited every pueblo in the province, meeting no opposition, but when he undertook to colonize, the Indians gave him the bloodiest reception. Then began the siege of the black mesa of San Ildefonso. De Vargas also stormed the impregnable citadel of the Portrero Viejo and the beetling cliff of San Diego de Jemez. These costly lessons kept the Indians quiet until 1696, when they broke out again in revolt, but were soon subdued. Then came a dismal hundred years of ceaseless harassment by the Apaches, Navajos and Comanches, and occasionally by the Utes.

The Indian wars were constant, but the explorations by the Spaniards were frequent. They extended into Texas and settlement soon followed. The Spanish colonization of Colorado was slow, and they had no towns north of the Arkansas river. In Arizona, a Jesuit mission was established and continued from 1689 to 1717. Father Franciscus Eusebius Kuehne made four journeys on foot from Sonora to the Gila, and descended that stream to its junction with the Colorado."

The foregoing is a brief summary of the early pioneering of America, and the only pioneering for more than a century, and the greatest for nearly another century.

BOOKS AND THEIR MAKERS DURING THE MIDDLE AGES.—A Study of the production and condition of literature from the Fall of the Roman Empire to the Close of the Seventeenth Century. By George Haven Putnam; Vol. II: 1500 to 1709 A.D. G. P. Putnam's Sons, New York and London, 1897.

As a specimen of book making this is a model. The title pages in two colors; the chapter headings are embellished in the Old English style; the leaves are rough edged; the paper is soft, and is antique laid. The topics treated are the earlier printed books of France. William Caxton, the Korbergers, Erasmus and his books, Luther as an author, the Elzevirs of Leyden and Amsterdam.

The last part is given to the Beginning of Property and Literature. One does not need to be a bibliomaniac to appreciate this work, and to desire to secure it. Any one who has literary inclinations will value it. It is a good book for the family circle and should be in every gentleman's library.

BOOKS RECEIVED.

THE CRITICAL PERIOD OF AMERICAN HISTORY [Illustrated Edition]. By John Fiske. Houghton, Mifflin & Co., Boston. 1898.

AULD LANG SYNE. By the Rt. Hon. Prof. Max Muller [with a portrait]. Charles Scribner's Sons. New York: 1898.



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OSIRIS.—RESURRECTION AND THE PRINCIPLE
OF LIFE.

BY ELLEN RUSSELL EMERSON.

"The birds hasten to thee,
The pigeons bring to thee
Their offerings.
The first fruits of Ra,
Thoth hath put them on all sides."

—*Tablet of Ramses II, (Edward Naville, trans.)*

I. A glance at Egyptian text reveals a constant application of figures of birds used as a means of expression; these figures greeting the eye in papyrus or on monuments in an ever varied illustration where water birds and land birds, denizens of lakes and rushes, or of woodland and field, are represented flying, deploying their wings, on perch or within a nest in careful emphasis and where not less than fifteen species are noticeable in figurement of rites and their explanation, so numerous were they, indeed, Herodotus called the Egyptian writing a "bird language." And these birds are descriptive emblems. Each bird represented is a "Bird of God," which, possessing a talismanic force by means of consecration, is an essential part of the Thoth word, or scripture; necessary as an alphabetic letter it is equally necessary as an emblem, and indeed so great the importance attached to the emblematic bird, in the text for a proper interpretation, the same bird is often represented in the vignette illustrative to the meaning intended. The idea conveyed,—as will be apprehended when known that the Book of the Dead sets forth a scheme of resurrection,—is of too much moment to depend on superficial interpretation, and therefore the utmost painstaking, the reiteration and duplication of emblem; a duplication which gives strength to expression and magnifies the talismanic forces stored up in emblematic expression according to the avowed belief of Egypt. A writing originating from deity, taught by the lord of wisdom, (Thoth), the scriptures of the tombs and temples assume to represent the destiny of man, how great then

the importance of proper interpretation! And as a means of proper interpretation what method more secure than an understanding of the character of the principle emblems employed, an analysis of which is invoked by their delineation in the vignette?

The principle emblems, as has been said, are the figures of birds; and these birds* are: Vulture, hawk, eagle, dove, goose, owl, swallow, lapwing, ibis, heron and ostrich; eleven birds in all, and are placed in the list according to the order of their mention in the analysis, for it is impossible to classify the birds in accordance with their habits, without doing violence to the interpretations intended, an interpretation that includes the gods since the birds are descriptive of the divinities, of whom they are emblems. Of the gods there are two authentic lists, the one called the Theban code, the other the Memphite code; six gods in the first and seven in the second:

Theban Code:

Amen Ra, king of the gods.
Mentu, his son.
Shu, his son.
Seb, his son.
Osiris, son of Seb.
Horus, son of Osiris.

Memphite Code:

Ptah, the father of the gods, (architect of the world).
Ra, son of Ptah, (fire, Being).
Shu, his son, (air).
Seb, his son, (earth).
Osiris, his son, (Being that has existed).
Set, son of Seb, (unbeing).
Horus, son of Osiris, (coming into Being).

The Memphite code assumes to explain the origin and substance of the gods. The father is the architect and the sons, or gods, are fire, earth and air, and these: "unbeing," "coming into being," and "being," the cosmogonical elements, substance of the gods, plastic to the hand of Ptah the "architect," are necessary to "being," and they are indeed universally personated in creation myths as in the Memphite code.

The lesser gods of the two codes are called the "limbs of Ra" in Egyptian myths, but each god is a "generator" and an active constituent in re-creation since the elements which are impersonated are assumed to be necessary to immortal being, the scheme of resurrection in no detail representing being as destitute of a

*For the purpose of satisfactory authentication, the birds of Egyptian text were submitted to the inspection of experts in Ornithology, among whom is gratefully mentioned Mr. Henshaw, Secretary National Historical Society, Boston, Mass.

physical plane; the gods themselves, indeed, are *psychic physico* beings, and (it is important to remember), as such they are resurrection fathers, elemental gods they are active in the process whereby is accomplished immortal birth, the ruler Amen-Ra, however, in no case absent, for he was both cause of and component of being.

Without departing from primitive ideas expressed by our Ojibwa priests' chant:

"I am the living body,"

the Egyptian concept made use of the sun as a symbol of Ra, it was a means of manifestation of the hidden Ra,—that is of Amen-Ra. The sun was a mask as in the concept of the Aztec priest who pictured the planet so hidden.* A manifestation the sun was but one of many forms of being; there was, as stated by one of our Indians to a Jesuit father,† a power behind and ruling that body and at the same time the whole sidereal heavens. But the Egyptian Overruler, "behind the sun," had an appointed abode; Ra's seat is in the north; and to Mentu, his son, was appointed the ruling, (as a subordinate), the opposite heavens. Thus the south and the north were important points in the heavens; the one guarded by the son, the other, the seat of the Overruler, a fact that should not escape attention, for in this appointment is assumed a subtle relation between the two poles, north and south, whence originate an active and re-active force, governing each elemental god whose immanence in the substances, fire, air, water and earth, constituted them equal rulers to the end of creation and re-creation.

These two hemispheres, divided by the sun during the day, appear also to be divided by the milky-way by night. In the north is the Polar star, which might well be a symbol of the Overruler, a central magnet around which the sidereal heavens turn. It is the north wherein is born immortal being, while the south is represented in Egyptian writing to be the place of dissolution. It is upon these several appointments, north and south, that duality represented terrestrially by Upper and Lower Egypt was maintained, a duality personated by Horus, type of "coming into being," and Set, "unbeing," for these two gods were ascribed to the two hemispheres north and south, as were Ra and Mentu: that is, the place of Ra is the place of Horus, and Mentu's place is Set's. In possession of this fact the conclusion follows that the Egyptian regarded the two poles as influential in the unmaking and making of being.

Much is said of the "principle of Ra" in the scriptures of Egypt, and it is evident that the seat of that principle was believed to be in the north. This division of the heavens, north

*See Illustrations, Masks, Heads and Faces, also Indian Myths, by the Author.

†Relations des Jesuites, etc.

and south, controls the whole arrangement whereof the scheme of resurrection is unfolded; also it appears to have governed the construction of the Mastabas, looking to the north, as it were, as the place of the resurrection of the dead.

This concept is presented in the Book of the Dead in such arbitrary detail that failing to follow its varied ramifications the mind fails to comprehend adequately any part of the series illustrative thereof, but if on the contrary it is heedfully kept in mind, it becomes a basis of insight of the most valuable character. On this theory of duality of which the north and south hemispheres are examples, the priests have built a scheme of resurrection that was intended to be, it would seem, an actual temple of reason, the details of which are arranged in complete order, representing sidereal influences, the energy of divine power, and the intimate connection of human destiny with the Overruler. In this scheme all detail appears to have been valued as the mosaicist values the trifling fragment whose color will perfect the harmony of his picture, for there is no lack of emphasis by way of reiteration and recapitulation of the least part, as well as the greater, of the scheme. And it is not too much to asseverate that what Egypt builded in its four thousand years of civilization in the way of religious conception, has a foundation in the bedrock of human consciousness, be it primitive, pagan, or christian.

II. Primarily, an active exercise of energy is the paternal, while the means whereby that activity performs its functions is maternal; therefore it came to be a method of expression to present the paternal as secondary to the maternal. As for instance, the Overruler Ra is represented as the son, and at the same time the consort of the celestial mother, whose form is the sidereal heavens and whose starry body over-arches the earth as does the milky-way,—a stellar bow protective of life like the rainbow goddess of the Moki Indians.

Exercise of energy suggested an impulse occasioning activity to these ancient metaphysicians, and the impulse deified was assumed to be feminine. It was a feminine power in the celestial regions that was incentive to both the action of the "principles" in the region of the north, ruled by Ra, and also a feminine power accomplished the re-creation of the dead, as will be seen in the famous Osirian drama, the authors of which, as in their description of the generators, Ra and his sons, assuming the maternal to be a primary principle. A very suggestive fact, supplying added data to the explanations of the Memphite code, and revealing that some impetus to the gods of fire, air, water and earth, is necessary to energize the "unbeing" into "being" in the belief of the Egyptian; it also places a feminine principle in the relation of impulse to force, of soul to body. If the feminine deities were impulse to creation, they were also quickeners of the

dead, the importance of which function suggests the necessity of providing another list in addition to those of the Theban and Memphite codes, which shall afford a means of reference to those who are unfamiliar with the goddesses of the Egyptian pantheon.

Of this list, as in the two codes given, where are two gods, Ra and Ptah, who have parallel claims as generators, it may be said that there are two goddesses who hold parallel claims in the capacity of mother goddesses; these being: Hathor and Neith, mothers to Ra. But the position of these two goddesses is not unlike several others of the list, as will be seen in the explanations given:

Maut, consort of Ra and mother of Being.

Tefnut, daughter of Maut and Ra.

Nut, celestial mother.

Sekhmet, consort of Ptah.

Isis, consort of Osiris.

Nephthys, dual of Isis and consort of Set.

Sati, consort of Kneph: reproductive energy.

Ma, directress of the gods.

It is essential to a comprehension of the place of these goddesses, in the scheme of resurrection, to remember that severally they supply an impulse to renewal in those elements which the several gods, with whom they are consorted, personify. It is carefully explained, for instance, in the symbolic language of Egyptian scripture, that Hathor is the eye of Ra, and also that from the eye proceed the gods; therein is the germ of being. Again, it is explained that Sekhmet, or her dual, Tefnut, is divine impulse. Nut is represented to be the nourisher of Ra, in capacity of celestial mother; Sati is complement of divine energy; Maut is its emanation; Ma, the directress of all the gods of Egypt, is truth. An apotheosis of motherhood which has given the gracious title of mother of God, to Mary the mother of the Christ, is very ancient; but I have failed to find in the mythology of any other people as metaphysical an apotheosis as that found in Egyptian scriptures. An impersonation of the stellar heavens, and a goddess of truth, and thirdly, a divine impulse to being, the feminine principle, is given in the resurrection scheme an important rôle.

To the student familiar with Greek and Roman mythology it will be of interest to note that Maut, the consort of Ra, and mother of being, was identified with Cybele, while Hathor, mother of Ra, became identified with Aphrodite. Neith was found to correspond in attribute with Athênè; and Isis was claimed to be of the same element as Ceres, an identity that carries with it another most interesting analogy by which Osiris, in Egypt the representative type of the resurrected man, figures as Bacchus. To modern acceptance and identification of the Egyptian "lord of the dead" with the god of the so-called

Bacchic revels would seem sacrilegious, if the earlier Greek idea of Bacchus were not remembered; and the same censure might be passed upon the identification of Hathor with Aphrodyte, if, also, it is not apprehended that the ancient Greek had in mind a personification as pure as did the Egyptian. It is Greece, of the decadence, in which Bacchus is a drunken reveller, and Aphrodyte queen of that revelry.

That there existed an earlier and more hieratic interpretation of Hellenic divinities is attested by an acceptance of Neith, of Egypt, as identical with Athênè, goddess of wisdom, and Sati, the consort of reproductive energy (Kneph), with Hera, queen of heaven. Frivolity by no means entered into the characterization of these Egyptian goddesses, and it may be equally certain that the religious genius of Greece held large sway over the Hellenes in those days when the goddess of worship was hidden in the temple, demanding worship for the unseen; that concealment a representation of the unapproachableness of the divine rulers of the universe. Primitive religion, trustful and reverential, sprang from the heart; a later growth, more intellectual than reverential, dragged forth the divinity to the gaze of men, the result of which was that travesty leading to the downfall of belief which is seen in the caricature of Egyptian paintings of the Roman period; and in Grecian drama, offspring born of a dying nation, whose dissolution may be traced to irreverence toward the ideal and unseen. There is no obloquy more secure to destroy than that which befalls through mockery, and it is a question whether more harm is accomplished by means of a mistaken personification of an ideal than a total extinction of idealization, a result certain to follow the degeneracy of spirit, of which irreverence is foster mother.

As the goddesses of Egyptian worship were presented in hierarchal heedfulness to their purport, strict, severe, and without farther adornment than the insignia of their principle and element, these impersonations were calculated to suggest only that which was set forth by the insignia. Attribute was first of all object of impersonation, and to express the attribute, the Egyptian did not trust to the unclothed image of the human form. The face was often masked, and in most cases the body clothed, and in all cases the principle and attribute set forth appealed to the mind. The god, or goddess, was not a typically beautiful man or woman, if their attributes *were* intrinsically human, and therefore they did not contribute to a sensuous delight in pure form, as might the statues of Grecian divinities. The insignia of both gods and goddesses of the Egyptian pantheon were of various character, and there was a wide following of bird and beast in their retinue that *provided an escape from the anthropomorphic image*. Amen-Ra might dwell in the eagle, Osiris in the heron, and Isis in the hawk, for "the Egyptians," states Tacitus, "repre-

sented the mind by figures of animals," and if the mind, also, their deities! The representative emblem descriptive of maternity, its application inclusive of all emblems presenting the resurrection goddesses, was a vulture. The singularity of this selection was occasion of criticism among the Greeks, and when it is discovered that individuality was claimed to be inherited from the mother, as it is her function to nourish the embryo during its development into human form, the criticism appears to be well founded, this bird being a bird of prey. The preservation of individuality is essential to resurrection from the dead into immortal being, did the Egyptians believe that the form given by aid of the mother was necessary to individuality of being? And if they did, why should they select for the generic emblem of maternity a bird whose habits appear to be the opposite to preservation of form?

An explanation of personality, as understood in Egypt, is of peculiar interest in this connection. It is said in the Book of the Dead:

My heart from my mother! My heart from my mother! My heart necessary to my transformations. Do not rise up against me; do not bear witness against me; do not oppose me among the circle of the gods, and do not part with me before the keeper of the scales. *Thou art my personality; in my bosom divine partner protecting my flesh.* [LXIV.]

Again it is said:

Let the Tuat open for I go out to-day a pure spirit. The pure spirits make me live and bring to me my foes chained by the circle of the gods. *Is united with me the individuality I received from my mother by that.* I rise on my feet; a golden staff in my hand; I cut the flesh; I live. [LXV.]

III. The change at the event of death is represented to be accomplished after the manner of a birth, and of the righteous dead it is said that he is "able of being born a second time." The offspring born a second time is a son of Ra, a "son of the sun," and of all those elements of being typified by the gods named in the Memphite code, as also of the resurrection mothers, the goddesses of the principle of life. The celestial man, the son of Ra, was represented to be immediately under the influence of the sidereal forces. The Egyptian scheme of resurrection, indeed, includes the heavens as party to the change from dissolution to re-creation and new birth, and therefore it transpires that it is a voyage, rather than death, which is described when representing what happens to the dead; a voyage to the stars.

This notion suggests what might have been the Egyptian devotee's feeling respecting the night; as Shelley insisted, to him night disclosed what day veiled, or more accurately, night is celestial day wherein exist the gods, luminous in their spheres of energized forces; the two, however, are as two halves,—the one psychic, (heaven), the other physical, (earth),—a duality that is represented in the division of the heavens, north and south, ex-

plained above. This duality, it may be observed, is conceived as the means whereby the unseen is manifested in the seen. The vulture is in particular an emblem descriptive of Maut, who is stated to be the "consort" of Amen-Ra, and also she is the "mistress of darkness." Ra and "consort" presents the idea of light uniting itself with darkness, as Ra is a god of light and recalling the identification by the Greeks of Maut with Cybele, (their impersonation of Hades), it might be said that the goddess of Egyptian impersonation is a divine shade embosoming light.

The Egyptian scheme of resurrection assumes that assimilation into the body of a divinity of light, provided security to immortality, that light being truth. Osiris is born again as Horus, the god of light; the latter divinity representing resurrected humanity, as the former humanity, "coming into being."

Several illustrations of the process whereby Osiris again comes into being, are given in the Thoth scriptures; one of which is that of a dead sun, which deprived of radiance, seeks a rekindling flame. This journey of an impersonated sun is remarkable for its variety of description and the suggested knowledge of the sidereal heavens, that serves a good reason for the term "Watchers of the Night" given to the savants of Egypt. Many particulars of the journey recall the famous myth of the "Voyage of Jason," the argonaut in search of the golden fleece. Osiris is identified with Orion, in the course of the narrative, and it becomes of interest to turn from a study of the Egyptian texts, that are fraught with references to the stars, to those luminous spheres of light constituting the constellation whose mysterious association of suns is still an object of contemplation. On our early maps of the heavens, this constellation is outlined as the figure of a warrior ascending toward the zodiacal way, apparently having alighted at the southwest side of Via Lactea from the Argo Navis followed by his dogs Canis Minor and Canis Major, while a dove hovers near the ship, a branch in its beak, (Columba Noachi). The warrior (Orion) has in one hand a club, in the other the skin of a lion, that king of the forest who was consecrated in Egypt to Amen-Ra. As Orion ascends he holds up the lion's skin with a threatening gesture, emphasized by the upraised club, so presenting himself before the face of Taurus, which animal is apparently careering along the zodiacal way. The lion's skin is a sign of special significance, as it discloses that the hero starts out in his battle with a talisman from Amen-Ra. The environment of these mythical figures is a serpent with up-lifted head and forked tongue, on whose back are two birds, together with a sacred basin, and a spiral horned beast (the Monoceros), while at Orion's feet is a hare, a symbol of Osiris. This assemblage of animals is a combination of descriptive emblems used in primitive myths, and in particular in the language of the Egyptians. It is of special import that Cancer and

Gemini, which appear on the zodiacal way above those named, are equally associated with the scene of combat. The Gemini were identified in the Roman period with Shu and Tefnut, offspring of Amen Ra. Ascribable emblematically to the elements of principalities engaged in the re creation of Osiris, (representing in his person all mankind), both these figures and the animals are of peculiar interest. It has been said that the lion was sacred to Amen-Ra, but it is necessary to add that the bull was an emblem of Osiris, and the skin of the lion of Amen-Ra is raised by Osiris *against himself*—that is himself represented by Taurus! Armed with a club and a talisman, Osiris is demanding the bull to halt in its onset,—but upon what? Leo, the lion in the way, the emblem of Amen-Ra, or to be more explicit, the avatar of Amen-Ra; as was also the bull the avatar of Osiris, who is often mentioned in the Book of the Dead as the "Bull of Amenti," (or the Taurus of the heavens, as it might be interpreted). The picture of Leo is not less descriptive than other parts of the scene, for the king of the forest faces the raging bull with lashing tail and open mouth, and upon its side is the sickle, a sacred symbol, also, in the language of correspondence. The meaning of the emblems conspire to relate the great act of the Osirian drama. This act is an effort on the part of the hero to secure his, and all mankind's divinization. The bull's onset typifies unbridled passion, antagonistic to celestial power. The two, the lion and the bull, are, the one celestial, the other terrestrial. If the terrestrial is not made to halt, and brought under the control of the influx of celestial principle, typified by the talisman used by the hero in the conflict, the order of the zodiacal way is destroyed.

The battle of Osiris, thus figuratively shown to be between his higher nature, represented by Orion, and his lower nature, symbolized by Taurus, is followed by his complete disappearance. But Orion wears upon his thigh an Egyptian cross; that is, the sacred head of a ram represented as the hilt of a sword, so arranged as to form the upper limb of a cross. The ram's head cross of Egypt denoted celestial force, and wearing this amulet, Orion's disappearance was to be regarded as simply a phase in the order of the universe. And if Orion's reappearance was secured, so also Osiris', after death; or in other words, man's death or disappearance is a phase in his existence in accordance to the order of the physical universe.

The security to the dead of resurrection, as it will be apprehended, is dependent on Orion's restraining the onset of his lower upon the higher, or Ra nature. It will be remembered that when Orion disappears, Scorpio is seen in the heavens; the situation of the two constellations being so ordered that they are never in the same hemisphere. This battle, waged in behalf of self-government, assumes that Osiris' lower nature dies. Accord-

ing to Ovid, the scorpion is commanded by Juno to sting Orion, and so produce his death.

Terrestrial events, among the ancients, were attributed to the influence of the forces governing the stars, and it was the orderly movements of the constellations that implied a Ruler, as the Aztec king said, "outside the sun." What more natural than to take the grand constellations, Orion, Taurus and Leo, as a representation of the conflict between physical and psychic forces; these constellations in their association with the changing season, the coming winter and consequent dormancy of vegetable life typifying the epoch of death, a period of contest between antagonistic elements, a final victory on the part of the principle of life, resulting in rejuvenescence and awakened life? The splendor of the constellations, assumed to be engaged in this contest, is commensurate with the importance of the theme. Appropriating that common allegory of the seasons associated with the primitive story of the battle of the gods, of winter and summer, the authors of the Orion myths have given the world one of the most beautiful similes representing the power of good over evil; transferring the scene of contest from the earth to the starry heavens, the myth is no longer a story of heat and cold, but of good and evil contending in the soul. Admirably fitted as the constellations are for the use to which they are applied when considered in their zodiacal relations, it would seem that the authors of this myth could be none other than originators of the imaginary outlines given the constellate groups, which in their several details carry out the celestial allegory. True, in respect to Orion and Leo and their environment, also true in respect to other prominent constellations, as for instance, the Virgo, goddess of justice and her scales, in advance of the warrior; for according to the Thoth scriptures Osiris is to be tried in the judgment hall, and his heart weighed in the scales of truth. It is after the battle this august event occurs, and as if to refer the reader to the constellate groups, used as illustration, in the hand of Osiris is pictured the sickle, or crook, that is portrayed upon the constellation of Leo.

The condition of Osiris, when setting out for the flame of life, is described graphically: "His face is the face of an old man." Want of radiance suggests the loss of the "golden fleece," and Osiris' voyage in search of that radiance, is in this particular like the voyage of Jason. Presumably his journey was upon the Via Lactea, whence he disembarked from the Argo Navis to do battle with Taurus. The Via Lactea is mentioned by Ovid, (*Metamorphoses*, Book I,) in the following significant lines:

"A way there is in heaven's extended plain,
Which, when the skies are clear, is seen below,
The ground work is of stars through which the road
Lies open to the Thunderer's abode."

The Thunderer here mentioned is Zeus, identified by the Greeks with Amen-Ra, and who in this description is identified with Cepheus, who sits above the Via Lactea. Cepheus, represented to be an African king, is environed in the astronomical map, by a serpent on whose folds the ancient Thuban, Egypt's polar star, rests. In the hand of Cepheus' consort, Cassiopeia, are the emblematic sheafs of maize, typical of ever renewing life.*

In order to comprehend the full purport of Ovid's description, it is necessary to recall the fact that thunder, and gods of thunder, were the generators of life in mythical stories. Associated with the vernal epoch, thunder became the descriptive title of the giver of life. Jovis, (*Tonans*), Zeus, Amen-Ra, and the thunder gods of China, Thibet, Mexico, Peru and North America, are each vernal generators. But how has it happened that the description of Ovid places the thunder god in the abode wherein is placed Cepheus, the African king, and also, wherein is the seat of Amen-Ra?

Had he in mind the Osirian myth?

It is of peculiar interest to note that the writer declares that the starry way is a road to the Thunderer's abode, since the voyage of Osiris is to the north and along the starry way; and it is not improbable that Ovid, like many other Greek and Roman writers, inserted the ethical beliefs of Egypt in what now appears to be the imagery of poetic thought, for, read apart from the statements of the Book of the Dead, the lines quoted from Ovid appear to express some poetic fancy; whereas, analyzed by means of a comparison with the Osirian drama, a profound meaning is discovered,—a meaning that will be more fully explained in another section of this analysis.

IV. The death of Osiris, marked by the rising of Scorpio, in the Orion illustration, was celebrated by the Egyptians in a ceremony described as the "burial and resurrection of Osiris." The period of interment of the body (an interval of three days) being passed in the midst of appropriate rites, which, according to Plutarch, were conducted with great pomp. This burial service was a typical ceremony, and represented both a proper burial service for man and his resurrection, and it was copied in burial ceremonies performed for the kings of Egypt.

The resurrection of Osiris depended upon his absorption of an influx from Ra,—which the language of the text very strongly emphasizes:

"Double Lion is thy name; Amen-Ra, I invoke thy name; see that I absorb thee."

One of the qualifications that is required of Osiris is that he should have Ra's heart, an at-one-ment that raised Osiris to an

*See Masks, Heads, etc.

equality with Anien-Ra as a generator of life. The process by which Osiris possesses himself of Ra's heart, is that of being born a second time. The second birth is illustrated by way of a picture of the celestial mother, Nut,—a stellar figure of the Via Lactea, presumably,—in whose open mouth an extinct sun is entering, and which, by means of traversing the hidden assimilative functions, makes its exit, a new-born and radiant sun. This resuscitation of the radiance of a sun, emblem of Osiris, by means so remarkable, is an example of the power impersonated by the mother goddess. Ra's birth is dependant on this power, and it is by following his evolution that Osiris arrives at the desired at-one-ment, when he may claim: "I am Osiris; I am Ra mutually." A claim entirely consistent when it comes to be understood that at second birth the forces that originated in the "principles of Ra" are renewed.

Mutuality of power gave rise to the misleading expression applied now to this god and then another, of the "Only One," for oneness has been wrongly supposed to mean superiority when it referred alone to oneness of principles,—principles bound together as closely as steel to magnetic iron, their very essence magnetic, for Amen-Ra was a Jovis Tonans!

The authors of the Osirian drama dwelt upon this mutuality attained by the second birth, in a text that furnishes to the student valuable suggestions by way of the figures and emblems that are used to give it an authoritative expression, but which are here omitted on account of space; quotations, however, will be given in the section [V.] to follow, this analysis, from the text originally translated by M. Periet.

THE SCAPE-GOAT.

BY DR. C. JOHNSTON.

According to the 16th chapter of the book of Leviticus, which contains regulations for the ritual of the Great Day of Atonement, Aaron is to take two goats and place them before JHVH. Lots are then to be cast, one for JHVH and one for Azazel. The goat selected for JHVH is to be offered as a sin-offering, while that selected for Azazel is to be sent into the wilderness, laden with the sins of the people.

The word "Azazel," which occurs nowhere else in the canonical books of the Old Testament, has occasioned great difficulties to the commentators, both ancient and modern, and has given rise to a variety of interpretations. It has been explained, for example, as the name of a mountain, or a desolate region in the desert. It has been referred to the goat itself, and explained as a compound of אֵז and זֵז whence the name,

"scape-goat" in our authorized version, derived through Jerome's rendering "caper emissarius," from the rendering of Symmachus "tragos aperchomenos, aphiemenos." Other versions explain it from the Arabic "ázata," as meaning "complete removal, dismissal." Against all these explanations, however, there are weighty objections, and the context clearly shows that Azazel can only be a personality. JHVH was to receive the first goat, Azazel the second.

In the apocryphal book of Enoch, written probably about 180 B. C., Azazel appears as the leader of the angels, who, by their unions with the daughters of men, begot a race of giants, who filled the earth with violence and bloodshed. In later Jewish writings, Azazel is one of the four arch-demons, and in some cases is even identified with Sammael.

It seems clear, then, that, in the mind of the writer of Leviticus xvi, Azazel was a demon or evil spirit inhabiting the desert, and this is the view of most modern commentators.

Traces of this practice of vicarious expiation are to be found elsewhere in the Bible. In Levit. xvii, v. 7, we read: "And they shall no more offer their sacrifices to the satyrs after whom they go in faithlessness;" and II Chron. xi, v. 15, contains the statement that Rehoboam "ordained him priest for the high places, and for the satyrs, and for the calves which he had made." The Hebrew word, translated "satyrs" in these passages, means "he-goats," and was the appellation of certain goat-like demons, supposed to inhabit the wilderness. They are also mentioned in Isaiah xiii, v. 21; xxxiv, v. 14. The practice of making the goat carry away the sins of the people finds its parallel in Leviticus xiv, vv. 7, 53, where a bird is made to carry away the contagion of leprosy. It is most interesting to note that both instances are derived from the Priestly Code, compiled in Babylonia about 500 B. C., and Professor Haupt, in his paper on "The Origin of the Pentateuch," read before the American Oriental Society, in March, 1894, has pointed out that the priestly code is influenced by Babylonian institutions. "We can trace," he says, "the Babylonian prototypes, not only for certain Jewish rites, but also for certain technical terms of the Levitic priestly language. The term 'qorban,' 'gift' or 'offering,' is a Babylonian loan-word; the euphemism 'clean place' for 'unclean place' or 'dumping ground,' [Levit. iv, v. 12; vi. 11] is also found in the cuneiform incantations [IV R² viii, 43; xiv No. 2, Rev. 2]." Professor Haupt's remarks are most suggestive, and a thorough investigation of the subject would doubtless yield important results.

The idea of conveying away sin or affliction which lies at the base of the practice of the scape-goat is a familiar one in the cuneiform religious and incantory texts. For example, in the penitential psalms published IV R² x, it is the wind which is to carry away the sins of the suppliant:

Lord! cast not down thy servant.
 He sinks in the waters of the swamp;
 Grasp thou his hand.
 The sin I have sinned turn thou to grace:
 The transgression I have committed let the wind bear away.
 Rend asunder, like a garment, my manifold offenses.

In another text [IVR² lix, No. 2, Rev. 10 ff.], various agencies are invoked:

Look upon me my goddess, receive my supplication;
 Let my sin be forgiven, mine offense forgotten.
 Let my curse be broken, my bond remitted;
 Let the seven winds carry away my sighing;
 Let me render asunder mine affliction, let a bird carry it up to heaven;
 Let a fish take away my trouble, the river bear it away.

In these instances, just as in the passages cited from Leviticus, evil is looked upon as something tangible, to be removed by physical means.

In Assyria and Babylonia the belief in demons was universal, and misfortunes of every kind, especially diseases, were considered as their work. These malevolent beings floated upon the wind, and roamed the face of the earth. They lay in wait for the wayfarer, even in the streets of the city, and crept stealthily into the houses by night. As expressed in an incantatory text [IV R² i, 30-35]:

They pass from house to house:
 No door can keep them out:
 No bolt can turn them back.
 Through the door they creep like serpents;
 Through the hinge they slip like a draught of wind.

Solitary wastes were, however, their favorite abode, as is shown by many passages. Nor were their attacks directed against mankind alone. An interesting text [V R, 1, 43-53b] describes the beasts of the field as suffering from the ravages of a demon:

Towards heaven he spreads out his net,
 Like a wind he strikes down the bird of the air;
 The ibex he seizes by its head and its horns;
 The he-goat, the wild goat of the mountains he grasps by their horns;
 The wild ox of the fields he brings low;
 The beasts of the field he overthrows.

But the power of these evil spirits could be overcome, and sufferers from their malevolence could be relieved by means of magical formulæ, and hence the large number of incantations having for their object the expulsion of demons. One of these texts seems to bear directly upon the subject in hand. It is one of the few unilingual Sumerian texts found in the library of King Sardanapallus, and is published at the end of the second part of Haupt's *Akkadische und Sumersche Keilschrifttexte* [pp. 105-106]. It may be translated as follows:

AN INCANTATION.

When the great Lord goeth forth to the field, when the great Lord of Ea goes forth to the field, he seizes the beasts that pasture in the field.

From the goat, the wild goat, the ibex he drives far away their leaders. The gazelle of the field and her fawn he seizes: the gazelle together with her fawn he catches. Like the wind he storms, like lightning he flashes. Ea beheld and graciously expelled him. Marduk perceived him and went into the house to his father Ea, saying: "My father, the evil spirit has come forth from the under world. I do not know what this man shall do in order to be relieved?" Ea answered his son Marduk: "My son, what dost thou not know? What can I teach thee further? Marduk, what dost thou not know? What can I teach thee further? But what I know, thou shalt know. Go, my son Marduk! Let Nergal, son of Samas, shepherd of all that exists, bring thee a gazelle of the field. Let Nin-igi-langa-bu, the great langa of heaven, bring thee a bow fashioned by pure hands. Place before Samas the gazelle that comes from the field, and give the bow to the king, son of his god. When he comes forth from the house of purification, let him smite the gazelle before Samas. When the king shoots at the gazelle with the bow, may the curse, the disease, the affliction, the spell, and all evil agency that was in his body at sun-rise, like the (arrow from the) bow be removed from his body. When the king shoots at the gazelle with the bow, may the evil spirit, the evil demon be appeased. Let loose the gazelle into the field. When the gazelle goes forth into the field, when it sinks down in the field in a clean place, may the curse, the disease, and the evil spells that were in his body sink down. May he become pure and clean."

The analogy which this text bears to the institution of the scape-goat as described in Leviticus would seem to be obvious.

SPANISH AND AMERICAN EXPLORATIONS.

BY STEPHEN D. PEET.

The Spaniards, notwithstanding their long residence and extensive acquaintance with the Pueblo territory, never discovered the cliff dwellings, or if they did, they never made a record of them. There was an expedition towards the northern part of the territory and beyond, which led very near to them, but did not result in their discovery. It was conducted by two Franciscan Friars, Dominquez and Escalante, who in 1776 started out from Santa Fe for the purpose of discovering the route to Monterey, and to California and the sea.

The party consisted of the two priests and five soldiers. They took the road to Abiquieu and the Rio Chama, and reached a point called Nueves on the San Juan, three leagues below the junction of the Navajo. They crossed the San Juan, passed down the north bank, north of the Colorado line, and found themselves on a branch of the San Juan some distance north of the Mancos canyon, and on the 12th day of May encamped on the Dolores. This part of their route was in the neighborhood of the cliff dwellings, but they did not seem to have gained any knowledge of them. The beginning of their route was the same as the old Spanish trail from Santa Fe to Los Angeles. They afterward took a route which was about the same as the Spanish trail from Santa Fe to the Salt Lake,—the same trail that Captain Macomb followed in his survey. On the 23rd of May they left the San Pedro and passed north-

east to the Rio San Francisco, and camped in a rancheria of Utes, and sought to secure a guide to the Lagunas, or Timpanagos, where they had been told to look for Pueblo towns. Pursuing a northwest course they crossed the San Raphael, or Colorado, where were signs of buffalo. They crossed the San Benaventura, which was the boundary between the Utes and the Comanches, at a place called Santa Cruz. From this point they went westward and came in sight of the Lake of the Timpanagos, now named Utah Lake.

There were here no town builders like the Moquis and Zunis, as the priests had been told, but there were many wild Indians. These Indians gave the priests a kind of hieroglyphic paintings on deer skin to show them their desire to adopt the christian faith. The Utes dwelt in huts made of osiers. They made their utensils of the same material. The Comanches lived in huts made from grass and earth,—the latter of which forms the roof. The Utes wear clothes made from the skins of bears and antelopes.

The party abandoned the hope of reaching the sea, and they turned southwest and reached the Beaver river, which is now called Escalante river. They returned by way of the Moqui villages and reached Santa Fe after an absence of about four months.

These various explorations by the Spaniards, bring to view the territory which was occupied by the pueblos; a territory which is now divided up into four states, New Mexico, Arizona, Colorado and Utah, and is traversed by two great rivers, the Rio Grande on the east and the Colorado and its branches on the west, and in a general way is bounded by four others: Pecos on the east, Dolores on the north, Colorado on the west, and the Gila on the south.

The Rio Grande was the river on which the largest number of inhabited pueblos were found, as it was the river on which the largest number of Spanish missions were established. These missions resulted in the erection of large churches in all the prominent places, many of which are still standing, though in ruins, and are often mistaken by tourists and travellers for prehistoric structures. The history of these churches will be appropriate here.

Mr. C. F. Lummis has written a chapter on church builders. The following are extracts from his very interesting book, "The Spanish Pioneers:"

The first church in New Mexico, at San Gabriel, was founded in September 1598, by the ten missionaries who accompanied Juan de Onate. In 1608 a church was erected at Santa Fe.

In 1617, three years before Plymouth Rock, there were already eleven churches in use in New Mexico, viz: at the dangerous Indian pueblos Pecos and Galisteo, on the east; one in the far north at Taos, two at Jemez, one hundred miles west of Santa Fe in an appalling wilderness, and others at nearly all of the large towns. It was a wonderful achievement, for each lonely missionary so soon to have induced his barbarous flock to build a big stone church and worship there the new white God.

The churches in the two Jemez pueblos had to be abandoned about 1622, on account of the harassment by the Navajos, but were occupied again in 1626. At Zuni, far west of the river and three hundred miles from Santa



RUINED CHURCH AT PECOS.



Courtesy of A. C. McClurg & Co.

CHURCH AND PUEBLO ON THE ROCK OF ACOMA.

Fe, the missionaries had established themselves as early as 1629, and in the same period they built three churches among the wonderful cliff towns of Moqui. Down the Rio Grande there was a similar activity. At the ancient pueblo of San Antonio a church was founded in 1629, and another at the pueblo Nuestea Senora, now Socorro. The church in the pueblo of Picures, in the northern mountains, was built before 1632, and the one at Isleta, in the center of New Mexico, was built before 1635; one at Nambe in 1642.

In 1662 a church was built at El Paso del Norte, a dangerous frontier mission, hundreds of miles from Spanish settlements in Old and New Mexico.

One can see from the windows of the train on the Santa Fe route, a large adobe ruin. It is the old church of the pueblo of Pecos,* whose walls were reared 275 years ago. The pueblo was the largest in New Mexico, but was deserted in 1840. Its great quadrangle of many storied Indian houses is in utter ruin, but above their gray mounds still tower the walls of the old church.

The missionaries also crossed the mountains east of the Rio Grande and established missions among the Pueblos who dwelt on the edge of the Great Plains.

The churches at Cuarai, Abo and Tabira are the grandest ruins in the United States, and were built between 1660 and 1670, and about the same time as the churches at Tajique and Chilili. Besides all these the pueblos of Zia, Santa Ana, Tsuque, Projoaque, San Juan, San Marcos, San Lazaro, San Cristobal, Alameda, Santa Cruz, and Cochiti, had each a church by 1680. A century before our nation was born, the Spanish had built, in one of our territories, half a hundred permanent churches, nearly all of stone and some of them of immense proportions.

This great zeal in building churches, taken in connection with the oppressions of the Spanish, resulted in the frequent murdering of the missionaries, and finally in the revolt of 1680. It was almost a habit with the natives to kill the missionaries. It was not the sin of one or two towns but nearly all, for twenty different towns, at one time or another, murdered their respective missionaries. Some towns repeated the crime several times. Up to the year 1700, forty of these quiet heroes in gray had been slain in New Mexico,—two by the Apaches, but the rest by their own flock.

This plan of building massive churches and bringing the natives, who had been for centuries accustomed to the worship of the "rain god" in their estufas or subterranean chambers, to the severe tasks of erecting and supporting them, was in violation to the traditions of the people and contrary to all their habits.

The celebrated Dr. Flinders W. Petrie has said:

The civilization of any race is not a system which can be changed at will. To alter such a system, apart from its condition*, is impossible. Every civilization is the growing product of a very complex set of conditions, depending on race and character, on climate, on trade, and every minutia of the circumstances. Whenever a total change is made in government it breaks down altogether, and a resort to a despotism of one man is the result. We may despotically force a bold and senseless imitation of our way on another people, but we should only destroy their light without implanting any vitality in its place. No change is beneficial to the real

*We have given a plate which illustrates the size and shape of the church which remains in ruins at Pecos, of which Mr. Lummis has given a description. It has been kindly loaned to us by Messrs. A. C. McClurg & Co.

The Rock of Acoma, which is also represented in the plate, is surmounted by an ancient pueblo, in the midst of which is another massive church building which rises above the walls of the pueblo and is the most prominent object in the landscape.

Mr. C. F. Lummis, in his volume "Poco Tempo," has given several cuts of the churches at Tabira, Abo and Cuarai.

character of a people except what flows from conviction, and a natural growth of the mind.

Such a system, the product of such extreme conditions, we attempt to force on the least developed races and expect from them an implicit subservience to our illogical law, and our inconsistent morality,—the result is death: we make a dead house and call it civilization. Scarcely a single race can bare the contact and the burdens, and then we talk complacently about the continued decay of savages before white men.

It was inevitable that frequent revolts should occur, and that full submission to the dominion of the Spanish should never take place, though there was an ostensible practice of the religious rites and ceremonies, yet the old pagan or aboriginal system continued and survives to the present day.

It is a singular fact that, notwithstanding the efforts of Spanish missionaries to civilize and christianize the natives, there was a very rapid decline in the population and a decrease in the number of the inhabited pueblos. This has been accounted for, in part, by the incursions of the savage tribes who dwelt upon the borders of the pueblo territory,—the Navajos, the Apaches, the Utes and the Comanches,—offshoots of the Athapascan and Shoshonian stock, which originally came from the north. These tribes had beset the region, especially the western and northern part, before the arrival of the Spaniards, and had compelled the people who were dwelling in the pueblos and were cultivating the soil in the valleys of the San Juan and elsewhere, to build their houses in the cliffs as a matter of defense. They afterward drove them from their retreats and compelled them to find refuge among the tribes farther south. The date of this migration of the Cliff-dwellers is unknown, but it was probably before the arrival of the Spaniards. The attack of these wild tribes was so persistent that all the north and western part of the Pueblo territory had been abandoned, and the great villages which were situated in the valley of the Gila, as well as the cliff dwellings on the San Juan, the Rio de Chelly and the Rio Verde, as well as the pueblos on the Chaco, were in ruins.

The Spanish writers make no mention of villages situated in these valleys, nor did they send any missionaries there or build any churches. It seems that only a very small portion of the pueblo territory was occupied at the time of the arrival of the Spanish, and even that became decimated and some of it depopulated while the Spaniards were occupying it. It has been questioned whether there was a decrease in the population, but we have evidence furnished by the Spanish explorers themselves. In 1582 Antonio de Espejo made his expedition up the Rio Grande. In his report he gives the list of villages reached and the population of each.

The population of these towns was very much over estimated by Espejo, but the number of inhabited pueblos* was in great

*The sixty inhabited pueblos which were discovered by Coronado were reduced to about thirty.

contrast with those mentioned by the American explorers.* Not one of these villages probably contained over 1,000 people. The population, estimated by the Spaniards at from 25,000 to 250,000, is not now over 10,000.

The following table, kindly furnished by Mr. F. W. Hodge, shows the population after the Americans had occupied the country:

PUEBLOS.	Reli- able. 1850	Reli- able. 1864	Cen- sus. 1880	PUEBLOS.	Reli- able. 1850	Reli- able. 1864	Cen- sus. 1880
Acoma.....	350	491	582	San Felipe.....	800	427	501
Cochiti.....	254	229	300	San Ildefonso....	500	161	189
Isleta.....	751	786	1037	San Juan.....	568	385	373
Jemez.....	365	346	474	Santa Ana.....	399	298	264
Laguna.....	749	988	970	Santa Clara.....	279	144	187
Nambe.....	111	94	81	Santo Domingo,..	666	604	930
Pecos*.....				Sia.....	124	103	113
Picuris.....	222	122	120	Taos.....	361	361	324
Pajoaque.....	48	20	18	Tesuque.....	119	101	94
Sandia.....	241	197	150 [†]	Zuni†.....	?	?	1547

*Moved to Jemez 1840.

†Population 1,470 in 1805.

Later figures from Census Report—including Moki.

There was nothing in the Spanish regime which secured defense to the people against their enemies. Only when there was a revolt among the Pueblo tribes themselves, did they bring in the force of arms to protect themselves. The people had learned to economize in wood and water, and had ways of erecting their own buildings and irrigating their own villages, which were well adapted to a semi-arid region. They gathered the rain water which fell upon the surface into reservoirs, led it through the center of the villages, afterwards conducted it through the gateways into other reservoirs, and there used it to irrigate their fields.†

They sometimes built their houses on mesas, which were reached by single pathways, as may be seen in the village of Acoma, which, with Isleta and Oraibe, are the oldest pueblos in the region and the only ones that remain in the same sites as they did when discovered by Coronado. They were thus able to endure the attacks of the savages, though

*Bandelier says: "The villages of that time (first half of the sixteenth century) were on an average much smaller than those of to-day inhabited by Pueblo Indians, but there was a greater number of them. The aggregate population of the Pueblos in the sixteenth and seventeenth centuries did not exceed 25,000 souls."

Mr. Cushing says: "At the time of the Spanish conquest the Pueblo Indians numbered, all told, more than 30,000. . . . The total population of the modern towns is about 10,000."

Not one of these villages contained over 1,000 people.

Mr. M. L. Miller says: "The population of Taos in 1864 was 361. The number of the Pueblo Indians at the time of their discovery has been variously estimated. The largest estimate is that of Antonio de Espejo, whose total figures for all the Pueblos would give about 250,000." From this number the estimates run all the way down to 23,000. Vetancurt gives the figures for the year 1660 at a little over 23,000.

†The ruins of Pecos which are presented in the two plates illustrate this, as do the inhabited villages of Taos.

they allowed tribes, such as the Queres* and Navajos, to drift in from the outside regions, who adopted the Pueblo style of building and conformed to the common mode of life.

The Pueblos had a system of worship which was peculiar to the region. They worshipped the nature powers and the "rain god"† under the symbol of the serpent, and had many ceremonies which were founded upon this system. Every part of their domain, including the rocks, the springs, the mountains and lakes, were sacred to their divinities. Even their method of reckoning time was by watching the sun in its course, and noticing its position over certain heights.

It was not strange that the people revolted. They were obliged to carry heavy timbers long distances to put into the massive churches erected in every village where there was a mission. The difficulty of this task can be imagined when we look at the picture of the great church which overshadows, by its height, the pueblo on the summit of Acoma.‡ The old clan life, and the rule of the Caciques, was interfered with. Time honored institutions and customs were broken up. The rule of the priests was substituted for that of the hereditary chiefs and "medicine men."

It was not altogether owing to the attack of the savages that the pueblos were deserted; but to the oppressions of the Spaniards, which continued for three hundred years, the only relief to which was the Mexican war in 1846 and their transfer to the American power. To this the Pueblo tribes gave their adherence at the first, and have ever since manifested the most friendly feeling.

When the Americans began their explorations there was very little of the territory inhabited. All this is, however, in great contrast to that which has occurred since the Americans began to occupy the country.

The American exploration may be divided into a number of periods which followed one another, according to succession or order of time; each of which has produced important results.

The first series began with the capture of General Pike and his trip across the country to Mexico, and ended with the trading expeditions of J. W. Gregg.§

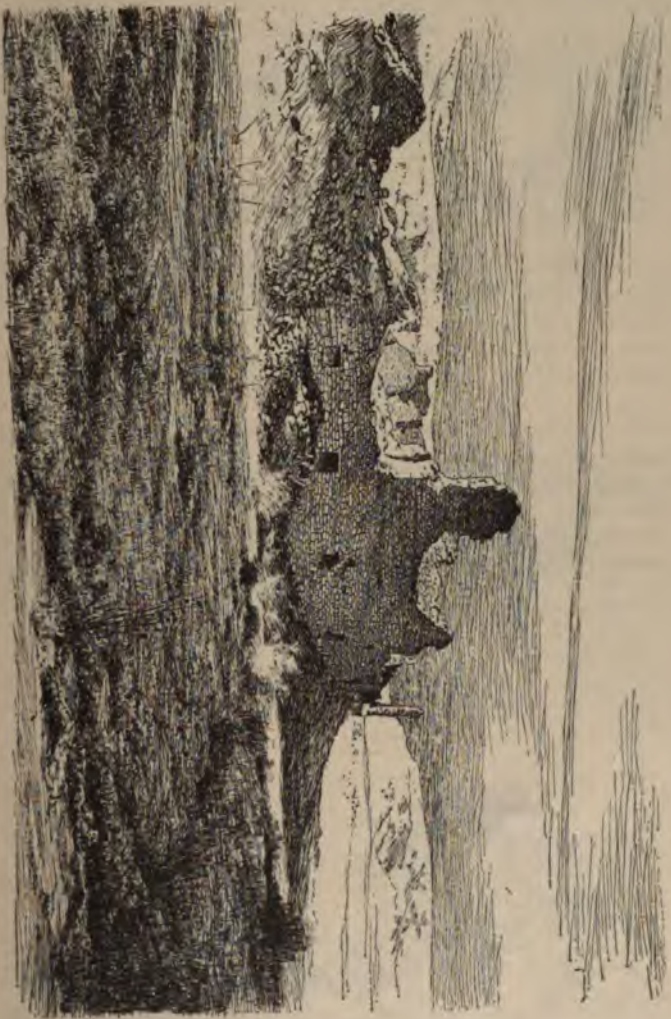
*The Queres, according to Mr. C. F. Lummis, made their homes among the potreros west of the Rio Grande, and were the cave-dweller of this region. They are said to have erected the stone effigies, which were probably their totems, thus showing that they were originally totemistic animal worshippers and not sun worshippers like the Pueblos. One branch of them built the village on the summit of the rock Acoma. Another branch occupied Santa Ana, Santo Domingo, San Felipe and Cochiti on the Rio Grande.

†See book on Myths and Symbols.

‡See Plate.

§Acoma, Laguna, Zuni and the Moqui pueblos were about all the villages west of the Rio Grande which were inhabited.

§From "Pike's Narrative" we learn that James Pursley fell in with some Indians on the Platte river and passed over to the Grand river and descended, in 1805, to Santa Fe. In 1812 an expedition under McKnight, Beard and Chambers succeeded in reaching Santa Fe. In 1821 Capt. Howell, with four trusty companions, went to Santa Fe. In 1822 Santa Fe trade began; Col. Matmaduke, Lieut.-Governor of Missouri, made one of a party who went with twenty-five wheeled carriages to Santa Fe.



RUINED PUEBLO ON THE CHACO.



RUINED PUEBLO AT PECOS.

The second began with the expedition sent out by the government under the charge of Colonel Washington and Lieutenant Simpson,* to examine into the condition of the Navajo Indians, but included the expedition under General Sitgreaves and Lieutenant Ives, who were to report on the navigability of the Colorado river, but ended with the preliminary survey of the Pacific railroad under Major Whipple.

The third series began with the organization of the Geological surveys under Prof. F. V. Hayden and Major Wheeler, and included the explorations† by W. H. Holmes, W. H. Jackson, Oscar Loew, Prof. E. D. Cope and Dr. W. H. Hoffman. This exploration resulted in the discovery of the cliff dwellings in the Mancos canyon, the shelter caves, the Montezuma canyon, ancient pueblos on the McElmo and the remarkable fortress called Montezuma Castle.

The fourth series began with the organization of the Ethnological bureau,‡ and includes the expeditions sent out under the auspices of the Archaeological Institute of America, conducted by A. F. Bandelier, the Hemenway expedition, and the reports made by F. H. Cushing, J. Walter Fewkes and Dr. Washington Mathews.

The fifth series consisted of explorations of private individuals who have visited the regions of the Cliff-dwellers, among whom are F. H. Chapin, Dr. Beardsall, L. F. Bickford, Mr. Nordenskjold, C. F. Lummis, W. K. Moorhead and Lewis W. Gunkel.

Each one of these expeditions marks an era in the history of

*This brought to light the wonderful ruins in the valley of the Chaco and the Rio de Chelly, the Rock Inscriptions at Zuni, and furnished an account of the inhabited pueblos of Zuni, Laguna and the villages on the Rio Grande. The expedition under Captain Macomb was attended by Prof. J. S. Newberry. They passed up the Colorado river, reached the Grand Canyon, crossed the plateau to the Moqui villages, and from there to the Dolores and to the river Chama, but did not reach the ruins in the valley of the Chaco. This party traversed about the same route which had been previously followed by J. W. Gregg, by way of the Canadian river and the Shawnee settlements, Walnut Creek to Albuquerque and from thence to Laguna, Zuni, Rio Pascado, Rio Verde, Aztec Pass, Bill Williams' Forks to the Colorado river. A special report was made by Lieutenant Abert, which gave the names of the Indian tribes and their number.

†The results of this exploration were very remarkable and should be mentioned "seriatim" [1.] The Cliff Dwellings, situated high up on the sides of the cliffs of the Mancos canyon, were discovered by W. H. Jackson. The cliff villages, such as Echo Cave on the Mancos, on the Rio de Chelly, on the San Juan, were described by W. H. Holmes. [2.] The ruined pueblos situated on the McElmo, the Dolores and the Hovenwep, the most of which were of the honey-comb pattern. [3.] The cavate houses, with towers above them and walled up caves, which were used for caches or store rooms for grain. [4.] The cliff fortresses, called Montezuma Castle and that of Montezuma Wells, discovered by Dr. W. H. Hoffman. [5.] The single houses situated at a distance from water, discovered by Prof. E. D. Cope. [6.] The ruins of pueblos on the Animas, described by Lieut. Rogers Birnie. [7.] The Rock Inscriptions which were discovered in the Shelter caves. [8.] The pottery and other relics, described by E. A. Barber and W. H. Holmes. [9.] The revisiting of the ruins of Chaco canyon by W. H. Jackson. [10.] The account of the Pueblo languages by A. S. Gatschet, and the classification of the tribes according to languages, by Oscar Loew.

‡This bureau was established in 1879 after the famous exploration of the Grand Canyon of Colorado by Maj. J. W. Powell. The general review of the field explored has been published by Major Powell in various magazines, and in a recent book called the Canyon of Colorado, published by Ford & Vincent.

[Mr. L. F. Bickford has described the ruins on the Chaco and on the Rio Verde in the Century magazine for October 1890. Dr. Mearns, surgeon United States army, described the ruins on the Rio Verde and the fortress called Casa Blanco in the Popular Science Monthly for October 1890. Dr. J. F. Beardsall describes the cliff dwellings in Mancos canyon in the Bulletin of Geographical Society, republished in the American Antiquarian. Messrs. Moorhead and Gunkel furnish descriptions of the shelter caves and cave villages in the Butlers-wash and other canyons in the Illustrated American, also in THE AMERICAN ANTIQUARIAN.]

the pueblo region since the time of American occupation, which is distinguished not so much for the changes among the pueblos themselves, as by the progress of the country in all that makes for peace and prosperity. Very little was known at the outset about the country except that it was overrun by savages. It was only the regions beyond and the gold mines of California that at first interested the people, but it was afterward found that the country was rich in minerals and only needed enterprise and energy to bring out its resources. There was great danger in traveling and it was not safe for Americans to settle there. It was not long before the government subdued the hostiles and brought the whole country under the strong power of law.

Interest was awakened when it was discovered that there were so many ruins hid away in the valleys and the deep canyons, and America began to appear like an ancient country. A vast amount of information concerning the Indian tribes, and especially the Pueblos, began to come in, and the Indians instead of proving to be mere vagrants hardly worthy of notice and only to be exterminated as soon as possible, were shown to have had a remarkable system of government, a wonderful amount of mythology and folklore, and also elaborate ceremonial and religious rites, which were worthy of the closest attention.

The study of the architecture, languages and the customs of the Pueblo Indians, were owing to the personal interest in archæology which some of the explorers felt, and the reports were altogether voluntary, but the contributions have increased in number and value as time has passed on. It is with this point in view that we shall quote freely from the reports of the different explorers, taking those which were early and late and arranging them so as to bring out the facts in reference to particular localities.

The various parties which explored the region began at the east side and went westward in the opposite direction from that taken by the Spaniards. They reached first the inhabited pueblos situated upon the Rio Grande, and only came upon the ruins as they approached the western borders. Some of the expeditions took the central route and followed the old trail which was the continuation of the Santa Fe trail; consequently they came first to the pueblos which were already known, such as San Domingo, Acoma and Zuni. Still some of the earlier explorers were able to reach the ruined pueblos and cliff dwellings which were totally unknown, and made reports which were very startling.*

*Sitgreaves came upon ruins of stone houses which he says were evidently remains of a large town, as they recur at intervals for an extent of eight or nine miles,—but probably the same as visited by Cushing, Walter Fewkes and others,—situated upon the Rio Gila, and his guide Lereux passed from the Gila over to the Rio Verde and discovered some of the cliff dwellings which have so recently been described by Mr. Mindeliff.



THE ESTUARY AT 7A08.



SCENE ON THE RIO DE CHELLY.

The descriptions furnished by the different exploring parties form a most suggestive series of discoveries.

1. We begin with the easternmost district, namely, that on the Rio Grande; a district in which there were many inhabited pueblos. These have furnished the chief data for reconstructing the pueblos farther west, which are in ruins, and for deciding as to the state of society which formerly existed throughout the entire region. The American explorers have done far more in this direction than the Spaniards did, notwithstanding their excellent opportunities, and the information as to the inner systems and hidden rites which were practiced in the estufas, and many other things, is constantly being secured.

The first one to describe the pueblos of this region was Mr. Josiah Gregg, who visited the pueblos of Taos, Pecos, Isleta, San Domingo and Felipe and described their peculiarities. After speaking of the villages and their acequias, or irrigating ditches, and the population in the villages, and the ancient mines, and ruined cities called La gran Quivira, and the traditions concerning them, he describes particular places. He says:

Ancient ruins are now to be seen scattered in every quarter of the territory. Of some, entire stone walls are yet standing, while others are nearly obliterated. Each pueblo is under the control of a cacique, chosen from among their own sages and commissioned by the governor of New Mexico. The cacique, when any public business is transacted, collects together the principal chiefs of the pueblo in an estufa and laying before them the subject of debate, which is generally settled by a majority.

The Pueblo villages are generally built with more regularity than those of the Mexican, and are constructed of the same materials as were used by them in the most primitive ages. A very curious feature in these buildings is, that there is most generally no direct communication between the street and the lower rooms, into which they descend by a trap-door from the upper story, the latter being accessible by means of ladders. Even the entrance to the upper stories is frequently at the roof.

Though this was their most usual style of architecture, there still exists the pueblo of Taos, composed for the most part, of but two edifices of very singular structure—one on each side of a creek, and formerly communicating by a bridge. The base story is a mass of near four hundred feet long, a hundred and fifty wide, and divided into numerous apartments, upon which other tiers of rooms are built, one above another, drawn in by regular grades, forming a pyramidal pile fifty or sixty feet high, and comprising some six or eight stories. The outer rooms only seem to be used for dwellings, and are lighted by little windows in the sides, but are entered through trap-doors in the roofs. Most of the inner apartments are employed as granaries and store-rooms, but a spacious hall in the centre of the mass, known as the estufa, is reserved for their secret councils. These two buildings afford habitations, as is said, for over six hundred souls. There is likewise an edifice in the pueblo of Picuries of the same class, and some of those of Moqui are also said to be similar.

Some of these villages were built upon rocky eminences deemed almost inaccessible; witness, for instance, the ruins of the ancient pueblo of San Felipe, which may be seen towering upon the very verge of a precipice several hundred feet high, whose base is washed by the swift current of the Rio del Norte. The still existing pueblo of Acoma also stands upon an isolated mound, whose whole area is occupied by the village, being fringed all around by a precipitous cliff.

Several gentlemen have visited this pueblo (Taos) since the time that Mr. Gregg made his expeditions, and have given descriptions of it.

The best description is given by Mr. L. H. Morgan. He says:

The two structures stand about twenty-five rods apart on opposite sides of the stream and facing each other. That upon the north side is about 250 feet long and 130 feet deep and five stories high; that on the south side is shorter and deeper and six stories high. The present population is about 400, divided between the two houses. Upon the east side there is an adobe wall connecting the two buildings and protecting the open space. The creek is bordered on both sides by ample fields and gardens, which are irrigated by canals drawing water from the stream. The first stories are built up solid; those above are built in a terraced form; several stories are reached by ladders, the rooms are entered by trap-doors. The lower rooms are used for storage and granaries, and the upper for living rooms, the families living above owning and controlling the rooms below. Several rooms were measured, and found to be in feet 14x18 20x22 and 24x27, the height of the ceiling from 7 to 8 feet. In the second story they measured 14x23, 12x20 and 15x20. The back rooms have usually one or more round holes made through the walls, from six to eight inches in diameter, these furnish the apartment with a scanty supply of light and air. The ground rooms are usually without doors or windows, their only entrance being through the scuttle-holes which are in the rooms comprising the story above. The rooms located in the front part of the house receive the light from the doors and windows; the back rooms have no other light than that which goes through the scuttle-holes or holes in the wall, and they are always gloomy.

The representation of a room in this pueblo is from a sketch by Mr. Galbraith, who accompanied Major Powell's party. There are fire-places in this room, a modern invention. [See plate.]

There is room in each of the two buildings to accommodate 500 people. They were occupied in 1864 by 361 Taos Indians. From the best information attainable, the original buildings were not erected all at one time, but added to from time to time.

The description which is furnished by Mr. M. L. Miller, who has spent a summer at Taos, is especially worthy of notice. He says:

The question of location is, apart from another question, whether the people are to-day living in the same buildings which the Spaniards saw. Mr. Bandelier positively states that, 'with the exception of Acoma, there is not a single pueblo standing where it was at the time of Coronado, or even sixty years later, when Juan de Onate accomplished the peaceful reduction of the New Mexican Village Indians.'

Taos appears several times prominently in opposition to the Spaniards; the last time when the people gave any trouble was at the time of the Taos rebellion in 1847. The ruins of the church in which the people made their last stand against the whites are still at Taos. There are also ruins near Taos which indicate that there has been a rebuilding of the pueblos even here.

Of the high houses at Taos there are two, the north house is five stories high and the south but four stories. [See plates.] The two main houses sheltered the entire tribe originally, but later small groups of buildings have been built within the old wall and outside. Mr. Lummis speaks of the houses as pyramids, and so they appear, for they recede by four or five great steps to the top. The ground floor covers, according to Mr. Davis, about three or four hundred feet by one hundred and fifty feet for each building. In ancient times the larger door-ways of the upper terraces were probably never closed except by means of blankets or rabbit skin robes hung over them in cold weather. Examples have been seen where a slight

pole of the same kind as those used in the lintels is built into the masonry of the jambs.

One of the most curious, and at the same time most characteristic features of an Indian pueblo, is its kiva or estufa. At Taos they are circular structures built almost wholly underground and entered by a single opening in the roof. There is no other opening in the room save a small hole at one side to secure a draft for the fire. The subterranean position of these rooms is significant. Mr. Cushing says: 'When the ancestors to the people were living in the caves and cliffs, the women built the houses for the protection of themselves and their children, but the men built sleeping places outside of the caves in front of the houses. The semi-circular form of the villages, to be seen in several of the ruined towns, has not continued in any of the existing pueblos, but the kivas are still subterranean.'

'At Taos there are seven kivas, four on the south side of the creek and three on the north side. Some of these are on the outside of the old town wall and others are within the wall. The kivas outside the town wall have the openings surrounded by a wall of adobe about two feet high; one descends by a ladder, the two poles of which extend high up in the air.'

There are many pueblos in the valley of the Rio Grande which, like Taos, have continued to be inhabited. These were visited by the early explorers, General Simpson, Major Whipple and Dr. Oscar Loew, their situation noticed, their population given, and their peculiarities described. Major Whipple secured a map from an Indian on which the pueblos were located, and which represents their mythical home or "place of emergence."

The most remarkable pueblo is that of Pecos,* situated on the Pecos river. This was inhabited at the time of the arrival of the Spaniards and continued to be inhabited until the year 1840, though its population decreased until only twelve were left; these abandoned the site and went to live at Jemez. The best description of Pecos is given by Mr. A. F. Bandelier; the points which he makes are as follows:

1. It was admirably situated, had an extensive view over the surrounding country.
2. The buildings which surmounted the mesas served as a defense, as the walls formed an obstruction to a storming foe and a permanent abode for the defenders.
3. The inclosure surrounded by the buildings served as a reservoir and held the water precipitated on the mesas, which could be conducted to the fields below and made useful for irrigating.
4. The different parts of the house were conformed to the configuration of the rocks, but were all connected so as to be occupied by the different families and clans, and serve as a joint tenement house.
5. Ingress and egress must have taken place, not horizontally "in and out," but vertically "up and down."
6. The surmise is that the family apartments were arranged not longitudinal or in transverse rows but vertically; the rooms of each story communicating with those above and below by means of trap-doors and ladders,—the stores for each family being in the lower story.
7. According to the ground plan and sections it appears that the east wing had five stories, the north two, the west three, and the south four.
8. It was the largest aboriginal structure of stone within the United States, and would even bear comparison with any of the aboriginal ruins of Mexico and Central America. There seems to have been a wall of circumvallation with a total length of 3,220 feet, and about six feet and six inches high on an average.
9. There is but one entrance to it visible, on the west side at its lowest level, where the depression runs down the slope making the bed of a

*Of the two plates which illustrate the ruins, one has been kindly loaned by Mr. C. F. Lummis, the other is reproduced from Bandelier's report to the Archaeological Institute. These ruins have been described by Josiah W. Gregg and Mr. W. W. H. Davis.

rock streamlet. Here the wall thickens to a round tower built with stones, leaving a gateway thirteen feet wide. 10. There is not in the whole building one single evidence of any great progress in mechanics. Everything done and built within it can be made with the use of a good fair eyesight only, and the implements and arts of what was formerly called the "stone age." This does not exclude the possibility that they had made a certain advance in the mechanical agencies. They may have had the plummet or even the square, but these were not necessary. 11. The structure itself, in its general plan and mode of construction, reminds one of an unusually large honey-comb. 12. Not a vestige of the former cultivation is left, but the platform with a pond in the center explains their mode of securing the water for irrigation, and gives a forcible illustration of the communal living. The Pecos Indians not only lived together, built their houses together, but raised their crops in one common field, irrigated from one common water source which first gathered its contents within the inhabited surface of the grounds, led into a reservoir below and so distributed to the fields. 13. The aboriginal ruins in the valley of the Pecos indicates three epochs, successive probably in time. Some of the manufactured ware seemed to have been made by people distinct from the Pecos tribe, though it is similar to that which is met with in the cliff dwellings of Mancos canyon.



ORNAMENTAL WALL AT PENASCA BLANCA.

II. The region in which the most interesting ruins are found is that which is situated beyond the water-shed at the headwaters of the streams which flow into the Colorado, and so to the Pacific. It may be divided into four or five separate districts, each of which is drained by a different river, and presents a different class of ruins. Into this region the American explorers entered at an early date and discovered the most remarkable prehistoric structures in the United States; the most of them in ruins, but a few still inhabited. The inhabited pueblos had been visited frequently by the Spaniards, but the ruins do not seem to have attracted their attention, at least they are not described. In this we see the contrast between the two classes of explorers. The Spaniards, true to their antecedents, sought first for gold, next for religious propogandism. The Americans sought for information and for the improvement of the country. The result is that we have from the Americans a most remarkable series of reports.



PUEBLO AT TAOS.—NORTH BUILDING.
Courtesy Mr. M. L. Miller.



PUEBLO AT TAOS —SOUTH BUILDING.

Courtesy Mr. M. L. Miller.

It is our purpose to give an account of these discoveries, taking the districts in the order of their discovery as well as that of geographical location; giving credit to each exploring party,—making a special mention of the first discoverers. We shall confine ourselves at the present to the ruins found on the Chaco river. This region was visited by Lieutenant Simpson in 1849, W. H. Jackson in 1874, and J. T. Bickford in 1890, and described by each in turn. The following is Lieutenant Simpson's description of the ruins, beginning with those of Pintado, the easternmost of the group:

We found them to more than answer our expectations, forming one structure and built of tabular pieces of hard, fine-grained, compact, gray sand-stone (a material unknown in the present architecture of New Mexico), to which the atmosphere has imparted a reddish tinge, the layers or beds



HUNCHO PAVIE RESTORED.

being not thicker than three inches, and sometimes as thin as one-fourth of an inch, it discovers in the masonry a combination of science and art which can only be referred to a higher stage of civilization and refinement than is discovered in the works of Mexicans or Pueblos of the present day. Indeed, so beautifully diminutive and true are the details of the structure as to cause it, at a little distance, to have all the appearance of a magnificent piece of mosaic work. [See p. 78.]

On the ground floor, exclusive of the out-buildings, are fifty-four apartments, some of them as small as five feet square, and the largest about 12x6 feet. These rooms communicate with each other by very small doors, some of them as contracted as two and a half by two and a half feet; and in the case of the inner suite the doors communicating with the interior court are as small as two and a half by three feet. The principal rooms, or the most in use, on account of their having larger doors and windows, were those of the second story. The system of flooring seems to have been large transverse, unhewn beams six inches in diameter, laid transversely from wall to wall, and then a number of smaller ones, about three inches in diameter, laid longitudinally upon them. On these was placed brush which was covered with a layer of mud and mortar. The beams show no signs of the saw or axe. On the contrary, they appear to have been hacked off by some very imperfect instrument. At different points about the premises were three circular apartments, sunk in the ground, called estufas, where the people held their religious and political meetings.

Thirteen miles from our last camp we came to another old ruin called Pueblo Weje-gi.

Further down the canyon we came to another pueblo in ruins, called Hongo Pavie. These ruins show the same nicety in the details of their masonry as those already described. The ground plan shows an extent of exterior development of 1,872 feet, and a number of rooms upon the ground floor equal to 72 feet. The structure shows but one circular estufa, and this is placed in the body of the north portion of the building, midway from either extremity. This estufa differs from others, having a number of interior *counterforts*. The main walls of the building are, at the base, two and three-fourths feet through, and at this time show a height of about thirty feet. The ends of the floor beams, still visible, show that there was, originally, at least, a vertical series of four floors. The floor beams, which are round, in transverse section, and eleven inches in diameter, as well as the windows, which are as small as 12x13 inches, have been arranged horizontally, with great precision and regularity.

Continuing down the canyon one and three quarter miles further, we came to another structure in ruins, the name of which, according to the guide, is Pueblo Chettro Kettle, or, as he interprets it, the "Rain Pueblo." These ruins have an extent of exterior circuit, inclusive of the court, of about 1,300 feet. The material of which the structure has been made, as also the style of the masonry, is the same as that of the ruined pueblos already described,—the stone a sandstone, the beams pine and cedar, and the number of stories at present discoverable is four, there having been originally a series of windows (four and a half by three and a half feet) in the first story, which are now walled up. The number of rooms on the first floor, most all of which were distinguishable, must have been as many as 124. The circular estufas, of which there are six, have a greater depth than any we have seen, and differ from them also in exhibiting more stories, one of them showing certainly two and possibly three, the lowest one appearing to be almost covered up with *debris*. In the northwest corner of this ruin is found a room in almost a perfect state of preservation.

Two or three hundred yards down the canyon we met another old pueblo in ruins, called Pueblo Bonito. The circuit of its walls is about 1,300 feet. Its present elevation shows that it had at least four stories of apartments. The number of estufas is four, the largest being sixty feet in diameter, showing two stories in height, and having a present depth of twelve feet. All these estufas are, as in the case of the others I have seen, cylindrical in shape and nicely walled up with thin tabular stone. Among the ruins are several rooms in a very good state of preservation, one of them being walled up with alternate beds of large and small stones, the regularity of the combination producing a very pleasing effect. The ceiling of this room is also more tasteful than any we have seen, the transverse beams being smaller and more numerous, and the longitudinal pieces which rest upon them only about an inch in diameter and beautifully regular.

Two miles further down the canyon, but on its left or south bank, we came to another pueblo in ruins, called by the guide Pueblo de Penasca Blanca, the circuit of which, approximates, 1,700 feet. This is the largest pueblo, in plan, we have seen, and differs from others in the arrangement of the stones composing its walls. The walls of the other pueblos were all of one uniform character in the several beds composing it; but in this there is a regular alternation of large and small stones, the effect of which is both unique and beautiful. The largest stones, which are about one foot in length and one-half foot in thickness, forms but a single bed, and then, alternating with these, are three or four beds of very small stones, each about an inch in thickness. The general plan of the structure also differs from the others in approximating the form of the circle. The number of rooms at present discoverable on the first floor is 112, and the existing walls show that there have been at least three stories of apartments. The number of circular estufas we counted was seven.

MAP SHOWING DIFFERENT PUEBLO DISTRICTS.

The following map shows the districts represented in the territory visited by the American explorers. They are as follows:

- I. The first includes the district on the Rio Grande.
- II. The second is situated upon the Chaco, where are the remarkable ruins represented in the cuts, and which are described in this book by Lieutenant Simpson, W. H. Jackson, J. T. Bickford and others.
- III. The third is in the valley of San Juan, the McElmo, the Hovenweep, the Mancos, the Montezuma and other streams, and is characterized by the ruins of the cliff dwellings.
- IV. The fourth is situated upon the Rio de Chelly, where are the remains of ancient pueblos,



cliff fortresses and cliff villages which resemble those on the Mancos and San Juan. It includes the district drained by the Rio Verde on which are the remarkable series of cavate houses, irrigating ditches, ancient boulder sites, stone pueblos and the two cliff dwellings called "Montezuma Castle" and "Montezuma Wells." It includes also the cavate houses and pueblos found in the ancient cones about the San Francisco Mountains.

V. The fifth district is situated upon the Gila River and its tributaries, and includes the ancient ruins of Casa Grande and the scattered villages and irrigating ditches which have been described by Mr. F. H. Cushing and others of the Hemingway expedition.

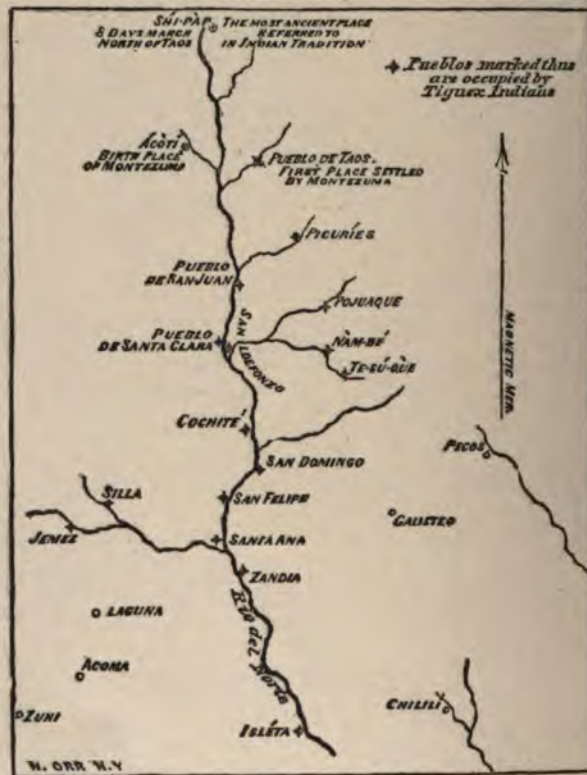
VI. The sixth district is situated upon the southern border of the pueblo territory and embraces the cavate houses among the poteros west of the Rio Grande, also the ancient ruins of the deserted villages and ancient Spanish settlements along the northern borders of Texas.

VII. There is one other district not represented on the map which is situated in Sonora, Mexico, and contains the ancient ruins of the Casas Grandes described by Mr. Bartlett and others.

INDIAN MAP OF THE RIO GRANDE.

The following map is the one which was secured by Major Whipple from an Indian. It represents the inhabited pueblos on the Rio Grande, which have been described by Mr. Bandelier as follows:

"Acoma is a regular three-storied village since every one of its long buildings contains three floors, of which only the upper two are inhabited; but Isleta has lost the pueblo character completely. As to the plan of the villages it varies according to topography and surroundings. San Ildefonso forms a hollow quadrilateral; Jemez, Santa Clara and San Felipe are each a double quadrangle with two squares; Santa Domingo, San Juan,



Santa Ana and Acoma, consist of several parallel rows of houses, and have from one to three streets. Zuni is one gigantic building very irregularly disposed, traversed by alleys called streets, and interspersed with several interior squares. Taos has two tall houses facing each other, one on each side of a little stream and communicating across it by means of a wooden foot-bridge. The same is the plan of the houses of Pecos. The material of which the houses are constructed varies—Acoma is of stone and rubble; Isleta, San Domingo and Cochiti are of adobe. Very often one of the same pueblo will display both kinds of material. There are still occasional traces of the ancient custom by which the women were required to rear and plaster the walls, while the men were to attend to the wood-work, the cutting of the beams and poles."



Courtesy of Chicago School Supply House.

SCENERY ON THE RIO GRANDE.



RUINS OF PECOS.

THE MONGOL-MAYAN CONSTITUTION.

BY JAMES WICKERSHAM.

Out of their ancient numerical philosophy the Mongolian people evolved a system of government based upon the square plan of the cardinal points. "The Chinese believed the earth to be a plane surface,—straight, square and large,—measuring each way about 5,600 *li* (1,500 miles), and bounded on the four sides by the 'four seas,' . . . it was supposed that the city of Loh was in 'the center of heaven and earth,' the middle of the Middle Kingdom."* Herein was the germ of the quadriform constitution of the Mongolian nations; the emperor, the "Son of Heaven," ruled the four quarters from the sacred center.

The Mayans believed the earth to be flat and square; in the Popol Vuh it is called "the quadrated earth, four pointed, four sided, four bordered."† Peru, Araucania, the Muyscas, the Quiches, Tlascala, Michoacan, Mexico and Zuni were tetrarchies divided in accordance with, and in the first two instances named after the cardinal points; Zuni was the center of the earth to that people, Tenochtitlan to the Aztecs, while the word Cuzco meant "navel" and was the center to the Peruvians. In each of the American nations the government was based upon the supposed quadrangular form of the earth, their capital, in which resided the "Son of Heaven," occupying its center.

To each cardinal point the Chinese and each of these American nations assigned a deity, a color, an element, a season, and other common elementary powers, principles and functions of nature. Their years were divided into quarters fixed by the solstices and equinoxes, the natural and regular recurrence of which controlled the times of their solemn national religious festivals, and vividly impressed them with the idea that their quadriform system was in accord with the most striking manifestations of nature. Their cycles were divided into quarters, and to each of these was assigned its appropriate deity and other parts of a quadriform religious system. The very heavens were divided into four parts and each part assigned to a cardinal point, and thus the cardinal points became the basis of a common system of astrology; with the Chinese "the seven winter mansions of which Aquarius is the center are assigned to the north, and the seven summer mansions of which Leo is the center are assigned to the south, . . . the vernal mansions go to the west, and the autumnal ones to the east."‡

*The Chinese Classics, Shu-King, Vol. II, Part I, p. 90-94: Chalmers.

†A Primer of Mayan Hieroglyphics, p. 47-48: Brinton.

‡The Chinese Classics: Shu-King, Vol. III, Part I, page 90-94; Chalmers.

China was divided into four parts and each quadrate was given in charge of a separate set of officials; the chief of the four mountains stood at the head, or center, of these four groups of officials. It is recorded in the Chinese Book of Rites that "the Son of Heaven sacrificed to heaven and earth; to the rulers of the four quarters; . . . the feudal princes sacrificed to the rulers of their several quarters."* Brinton in speaking of these four groups of officials in the American nations says: "It was a necessary result of such a division that the chief officers of the government were four in number, that the inhabitants of town and country, that the whole social organization acquired a quadruplicate form."†

In the canons of Yaou and Shun, the most respected of the Chinese classics, the ancient quadriform system of their government is vividly described. "In five years there was one tour of inspection, and four appearance of the nobles at court. They set forth a report of their government in words. This was clearly tested by their works. They received chariots and robes according to their services."‡ The emperor in making his tours of inspection visited each quarter, the east, south, west and north, going from and returning to his capital, the center.

In the second month the tour was to the east.

In the fifth month the tour was to the south.

In the eighth month the tour was to the west.

In the eleventh month the tour was to the north.

The nobles made their "four appearances at court" during the four years following that in which the emperor made his tour of inspection.

In the first year they came from the east.

In the second year they came from the south.

In the third year they came from the west.

In the fourth year they came from the north.

The tours to the cardinal points were undertaken by the emperor to correct abuses in government, to correct the calendar and the weights and measures, and to note with what fidelity and exactness the laws were obeyed, and the sacrifices and ceremonies performed. At the appearances of the nobles at court their reports and accounts were examined and each was rewarded according to his services. This simple yet comprehensive plan became the unwritten constitution of China, upon which the foundations of her long existing government were laid.

This unique constitution was carried to Peru, Central America and Mexico, and is graphically described by Cushing in his Zunian sociology. The seven cities of Cibola were respectively assigned, in pre-Spanish times, to the four cardinal

*The Religions of China, p. 150; Legge.

†The Myths of the New World, p. 86; Brinton.

‡The Chinese Classics: The Canon of Shun, p. 37; Legge.

points, the zenith, nadir and center. Each separate pueblo was also divided into wards, each of which was assigned to its proper cardinal point. "Thus one division of the town is supposed to be related to the north and to be centered in its kiva or estufa, which may or may not be, however, in its center; another division represents the west, another the south, another the east, yet another the upper world and another the lower world, while a final division represents the middle and synthetic combinations of them all in this world."* He points out that the Zunis are divided into clans and that these are also assigned to the cardinal points and that to each group also belongs a color, an element, and other natural powers, principles and functions, none of which belong to any other group. Each member of each clan or society thus knew his proper place in the local system, and was kept in his proper quarter of their social fabric by a constitutional provision which fixed his place at the moment of his birth.

Zuni, like Loh in China, and the Aztec and Peruvian capitals, was the center of their world, and the cardinal points from its center divided the land into quarters. "By this arrangement of the world into great quarters, or rather as the Zunis conceive it, into several worlds corresponding to the four quarters and the zenith and the nadir, and by this grouping of the towns, or later of the wards (so to call them) in the town, according to such mythical division of the world, and finally the grouping of the totems in turn with the divisions thus made, not only the ceremonial life of the people but all their governmental affairs as well, are completely systematized. Something akin to written statutes results from this and similar related arrangements, for each region is given its appropriate color and number, according to its relation to one of the regions I have named or to others of these regions."†

The nineteen clans and societies of Zuni were assigned, three to each of the cardinal points, the zenith and nadir, while the last and most sacred of all was assigned to the center. The following table gives the outline of what Cushing aptly terms

THE ZUNI MYTHO-SOCIOLOGIC ORGANIZATION.‡

DIRECTION	SEASONS.	COLORS.	ELEMENTS.	ACTIVITIES.	VISCERA.
North.	Winter.	Yellow.	Air.	War and destruction.	Right fore foot.
West.	Spring.	Blue.	Water	War Cure and Hunting.	Left fore foot.
South.	Summer	Red.	Fire.	Husbandry and Medicine.	Right hind leg
East.	Autumn	White.	Earth.	Magic and Religion.	Left hind leg.
Middle.		All col'rs			Heart.

*Thirteenth Annual Report Bureau of Ethnology, p. 367; Cushing.

†Thirteenth Annual Report Bureau of Ethnology, p. 369; Cushing.

‡Thirteenth Annual Report Bureau of Ethnology, pp. 367-373; Cushing.

It is impossible to give more than a very abbreviated outline of these systems in this paper; a detailed statement shows much more clearly their great similarity; compare with the Zunian, however, a portion of the Chinese, remembering that the latter like the former are divided into clans:

THE CHINESE MYTHO-SOCIOLOGIC ORGANIZATION.*

DIRECTIONS.	SEASONS.	COLORS.	ELEMENTS.	ACTIVITIES.	VISCERA.
North.	Winter.	Black.	Water.	Strengthening.	Kidneys.
West.	Autumn.	White.	Metal.	Destroying.	Lungs.
South.	Summer.	Red.	Fire.	Penetrating.	Heart.
East.	Spring.	Blue.	Wood.	Nourishing.	Liver.
Middle.		Yellow.	Earth.	Harmonizing.	Stomach.

Instead of comparing this scheme to written statutes Cushing might have recognized in it, as Major Powell does, the deeper meaning of the civil and religious constitution of the Zunians.† It is even more than that, for it guides their thought and mental growth; their calendar and sciences are built upon this foundation, and their life, religion and destiny are guided by this unchanging law, which they find controlling them at birth and which to change has brought their destruction as a nation and rapid extinction as a race.

The domestic relations among the Buddhists are controlled by this Asiatic constitution, and Major Powell has recently stated an interesting parallel between the Buddhistic and American schemes. He says: "I quote from the Sigalowada Sutta, a table of aphorisms published by Rhys-Davids in his book on Buddhism, which might be duplicated as a method of schemitization in many of the tribes of North America. The scheme in which aphorisms are arranged is by regions." The quotation from Rhys-Davids affords satisfactory evidence that the two systems have many points of resemblance. It reads: "The teacher was staying at the bambu grove near Rajagriha; and going out as usual to beg, sees the householder Sigala bowing down, with streaming hair, and wet garments, and clasped hands, to the four quarters of the heaven, and to the nadir and the zenith. On the teacher asking the reason why, Segala says that he does this 'honoring, reverencing, and holding sacred the words of his father.' Then the teacher knowing that this was done to avert evil from the six directions, points out to him that the best way to guard the six quarters is by good deeds to men around him,—to his parents as the east, his teacher as the south, his wife and children as the west, his friends and relatives as the north, men devoted to the religious life (whether Brahmins or Buddhist mendicants) as the zenith, and his slaves and dependents as the nadir."† Then

*The Middle Kingdom, Vol. II, p. 75; Williams.

†Fifteenth Annual Report Bureau of Ethnology, pp. 118-121; Powell.

follows a list of commandments and rules by which the daily life of the Buddhist is guided, arranged upon the cardinal point system.

According to the authority of Zelia Nuttall the domestic relations and governmental affairs of the Aztecs were regulated upon this plan. "In the center of each town there was a large market place to which broad, well kept roads led from the four quarters, and it was imperative that all adult members of the community should assemble there on the market days. I find strong indications that these invariably fell on the days bearing the year names. It is well known that these symbolized the four quarters and the elements as follows:

Acatl (reed),—east, water.

Tecpatl (flint),—north, fire.

Calli (house),—west, air.

Tochtli (rabbit),—south, earth.

It is impossible not to realize how admirably the periodical collection of tribute and the assortment of choice products for the market, according to reason and necessity, could be regulated by means of the rotation of the above symbolic names applied to the market days. Thus on each of these day signs respectively, at convenient intervals, the tribute from the subjugated tribes to the east, north, west or south of the City of Mexico might fall due, and thus the produce from each quarter would arrive regularly at set intervals."*

The Incan empire was known to its inhabitants as "tavan-tinsuyu" which meant the "four quarters of the world." Prescott tells us that "The kingdom, conformably to its name, was divided into four parts, distinguished each by a separate title, and to each of which ran one of the four great roads that diverged from Cuzco, the capital or navel of the Peruvian monarchy. The city was in like manner divided into four quarters; and the various races which gathered there from the distant parts of the empire lived in the quarter nearest to its respective province. The capital, in fact, was a miniature image of the empire."† Like Peking, Cuzco was divided into two parts, founded upon the origin of the population, and Peru, like China, had a separate set of officers for each of its four quarters, but all guided by boards or councils at the capital. Prescott further says of the division of Cuzco into quarters, "The streets were long and narrow. They were arranged with perfect regularity, crossing one another at right angles; and from the great square diverged four principal streets connecting with the high roads of the empire."‡ Garcilasso, a descendant of the Incan family, explains the reference to the "four quarters of the world," the name of the empire, as indicating the

*Note on the Ancient Mexican Calendar System, p. 21; Nuttall.

†Conquest of Peru, Book I. Chapter II; Prescott.

‡Conquest of Peru, Book III, Chapter VIII; Prescott.

four cardinal points, by which the empire and their cities were divided, and as indicating a constitutional method of arrangement in their architecture and social organization.

A comparative view of the ground plans of Peking and the capital of Mexico affords a most satisfactory means of demonstrating their exact similarity. The great *teocalli* stood at the center of the Aztec capital. It stood in the center of the sacred quadrangular enclosure, surrounded by a stone wall nine feet high; within this wall also stood some forty Aztec temples devoted to the service of the gods; Cortez was conducted to this sacred enclosure and to the summit of the great central *teocalli* by Montezuma's priests, and Prescott gives us a most graphic account of the view from this point. "They could distinctly trace the symmetrical plan of the city, with its principal avenues issuing, as it were, from the four gates of the *coatepantli* and connecting themselves with the causeways, which formed the grand entrances to the capital. The regular and beautiful arrangement was imitated in many of the inferior towns, where the great roads converged towards the chief *teocalli*, or cathedral, as to a common focus."* Bancroft is more definite in his description of the plan of the capital: "Four grand avenues, paved with smooth hard crust of cement, ran east, west, north and south, crosswise, forming the boundary lines of four quarters; at the meeting point of these was the great temple court."† Within the sacred walls of the central part of the city of Tenochtitlan stood the Tlalxico, the "navel of the earth;" like Cuzco and Peking, the Aztec capital was also divided into four wards on the cardinal point lines.

Peking, the capital of China, may be accepted as the model in this quadrangular plan of municipal organization. It is a walled city, its walls facing the cardinal points. Like Mexico and all Mongolian capitals it has a central sacred enclosure,—the "Carnation Prohibited City." Within this walled quadrangle are built the palaces and sacred edifices, including a principal *teocalli*. The walls around this sacred inner city face the cardinal points; at the central part of each wall is a battlemented gateway, from each of which springs one of the great streets toward the north, south, east and west. Within this sacred enclosure are, as in Mexico, temples, altars and places devoted to governmental and religious uses. Its principal feature, however, is the grand *teocalli*, "an artificial mound, nearly one hundred and fifty feet high, and having five summits, crowned with as many temples. Its height allows the spectator to overlook the whole city, while, too, it is itself a conspicuous object from every direction."‡

*Conquest of Mexico, Book IV, Chapter II; Prescott.

†The Native Races, Vol. II, p. 561; Bancroft.

‡The Middle Kingdom. Vol. I, pp. 66-71; Williams.

Peking is divided into four wards or quarters; from the central gates at the cardinal points grand avenues cross the capital north and south, and east and west. This division into four wards was made to secure good local government, as it was in Mexico and Cuzco. "The government of Peking differs from that of other cities in the empire, the affairs of the department being separated from it, and administered by officers residing in the four circuits into which it is divided. Their duties consist in having charge of the metropolitan domain, for the purpose of extending good government to its four divisions."* The old system is in vogue in Peking to-day; the cardinal points, colors and elements are as potent in their schemes of government and religion as in more ancient days. The emperor yet represents "Heaven" and his empress yet represents "Mother Earth;" the royal color is yellow and that of the nobles red; the very *teocallis* in Peking are painted the color belonging to the quarter in which they are respectively situated; "the north, east, south and west altar, are respectively black, green, red and white, and the top yellow; the ceremonies connected with the worship held here are among the most ancient practiced among the Chinese."†

In another important particular the walls of Peking and Mexico afford astonishing proofs of relationship. Over the gates of each city were battlemented turrets filled with war gear and soldiers for the protection of the gates. Bancroft says of those over the walls of the Aztec capital: "At the center of each wall stood a large two story building, divided into a number of rooms, in which the military stores and weapons were kept. These faced the four chief thoroughfares of the town, and their lower stories formed the portals of the gateways which gave entrance to the court yard."‡ Exactly similar turrets surmount the gateways of the city of Peking, Seoul and other Mongolian capitals; they were in each case filled with munitions of war and soldiers. They also built out overlapping walls to protect the city gates in Mexico and China; the great wall of China also finds a counterpart, in purpose and architecture in Mexico, in the wall separating the Tlascalans from their Aztec enemies.||

The arrangement of cities after the cardinal points plan was the rule not only in America but in China. Mukden, the metropolis and ancient capital of Manchuria, was a walled city like Peking. "Main streets ran across the city from gate to gate, with narrow roads, or *hu-ting*, intersecting them. The palace of the early Manchu sovereigns occupies the center."§ The Man-

*The Middle Kingdom, Vol. I, p. 82; Williams

†The Middle Kingdom, Vol. I, p. 70; Williams

‡The Native Races, Vol. II, p. 573; Bancroft.

§Native Races, Vol. II, p. 568; Bancroft.

§The Middle Kingdom, Vol. I, p. 192-193; Williams.

churian city of Kirin is also divided into four quarters; "Two great streets cross each other at right angles, one of them running far out into the river on the west supported by piles."* Peune, another large city, is similarly divided; "It consists of two main streets, with the chief market at their crossing."* This plan is the rule in the cities of northern China; the large cities are walled and divided by cross streets emerging from the city gates at the cardinal point.†

In their fundamental or constitutional methods, then, the Chinese and Aztec-Mayan people agreed in these particulars: they each believed the earth to be flat and square; they each believed their capital to be the center or "navel" of the earth; each nation was divided into four quarters and the "Son of Heaven" ruled the world from the center; great roads sprang from central gates toward the cardinal points, and each land was thus divided into quarters. This division of the land into quarters was the constitutional basis of their government, religion, astrology and civilization. Peking, Mexico and Cuzco were divided upon this plan, into four wards, each of which had a separate set of officials assigned to its government. The "Carnation Prohibited City" of Peking finds its exact counterpart in the sacred inner city of Tenochtitlan; each of these sacred inner cities was surrounded by square walls facing the cardinal points; at the center of each of these walls a battlemented gateway pierced the wall, from whence a principal street connected with the great roads of the empire; a *teocalli* stood in the center of each inner city; surrounding the great *teocalli* stood altars, temples and palaces devoted to a multiplicity of gods of the same identical character. Everything in the domestic, religious and governmental affairs of the Chinese and the Axttec-Mayan people was ruled by this "Quadriform Constitution."

*The Middle Kingdom, Vol. I, p. 192-198; Williams.

†Coxe's Russia, p. 316-17.

EGYPTOLOGICAL NOTES.

BY WILLIAM COPLEY WINSLOW, SC. D.

TOMB DISCOVERIES follow each other in quick succession. That of Menes is followed by the discovery of the tomb of Amenophis II, of Thothmes III and Osiris. M. Loset proves equally as energetic as his predecessor, M. de Morgan, the director-general of antiquities. That apparently worn field for the excavator, Thebes, yields to his divining-rod the long-lost tomb of Amenophis, the Memnon of the Greeks. Interest will be intense to know what is recorded in the tomb containing the royal surname, Aakhepern-Ra, and the proper name Amenhotep. He was no mean warrior, as his campaign against Arabia, Nubia, Phœnicia, Ninevah, and elsewhere witness. Perhaps he vainly imagined his statue of himself, called Memnon by the Greeks, would give a sunrise chant of his own glorification written on the wall at Amada:

The king returned home with his heart full of gratitude towards his father Amon. He had with his own hand struck down seven kings with his battle-ax, who were in the territory of the land of Thakhis. They lay there bound on the forepart of the royal ship, the name of which was Ship of Amenophis II, the Upholder of the land. Six of these enemies were hung up outside on the walls of Thebes, their hands likewise. Then the other enemy was carried up the river to Nubia, and was hung upon the wall of the city of Napata, to make evident for all time the victories of the king among all the people of the land of the negroes; since he had taken possession of the nations of the south and had made captive the nations of the north as far as the ends of the whole extent of the earth on which the sun rises and sets, without finding any opposition, according to the command of his father, the sun-god, Ra, the Theban Amon.

Thus has he done, the King Amenophis II. May he have for his portion a stable, bright and healthy life, and joy of heart to-day and forever!

It will be remembered that among the royal mummies found in 1881 at Deir-el-Bahari was that of Thothmes III; whose obelisk stands in Central Park, New York. M. Loset now finds his tomb, that of Egypt's greatest warrior. It is deplorable that we must patiently await the records upon its walls, although we may guess that they, too, delineate his belligerent acts.

But the discovery of the tomb of Osiris, as claimed by M. Amelineau at Abydos, is of transcendent interest and archaeological value. There are some attendant circumstances which show that the tomb (if extant) is located at this site, and unfortunately there is but one inscription there bearing his name—"Osiris the Good Being"—so that I think further proof is required to absolutely establish so important a claim. But I had better quote from Amelineau's letter to the *Journal Egyptian*, which is a fair

account to expect from an enthusiast, as most of the excavators are:

Two years ago I had already begun a very important work, if we consider only the number of cubic metres of sand removed, and my diggings on one side had stopped at a point three or four metres from a large tomb. During my previous excavations I had found a great number of traces of Osiris worship, but they could be explained by the general devotion that people of Abydos as well as other parts of Egypt had for the god of the dead, who was also called sometimes 'the Universal Lord,' because men are all submitted to death's law. During the whole of last year my time was devoted to works which I did not expect would last so long, and it was only this year that I was able to resume what was left uncompleted.

The hill under which was hidden Osiris' tomb is about 180 metres in length by 160 metres in width, and is here and there seven or eight metres high. It was composed of millions upon millions of small jars and earthen vases, and also some large ones mixed up with sand and few rare pieces of stone. From the first days of the excavations, in December last, pieces of pottery of all shapes, entire or broken, were found, bearing inscriptions written in hieroglyphic or hieratic signs. Large numbers of pieces mentioned the name of Osiris and were due to the priests, while a smaller number of pieces bore the name of Amon-Ra. A few of these inscriptions mentioned the house of Osiris. Among Egyptians a term generally used to designate tombs was 'eternal houses.' These discoveries impressed me so strongly that as far back as December 2d I recorded in the diary which I kept of my excavations, the belief that I was going to come across Osiris' tomb. If my discoveries had only related to a general worship I would not have found the double (Ka) name of King Menes among the *debris*: I would not have found that the worship of the dead buried under the hill had lasted until the end of the Egyptian empire. In spite of all these proofs I lacked yet the details given in the Egyptian texts.

The tomb was in shape a large rectangle, and on the four sides of it were series of tombs which would number about 200. Moreover, the necropolis, known in the country under the name of *Om-el-Gaab-el-Gharby*, contained the sepulchres of persons of very high rank, among them kings, the *steles* of which I discovered two years ago. So this first point was settled. On Jan 1st, appeared this fortunate staircase mentioned by the text. The next day I discovered a unique monument. It was a granite monolith in the shape of a bed decorated with the head and legs of a lion. On this bed was lying a mummy bearing what is known as the white crown, holding in his hands, which came out of the case, a flagellum and a pastoral cane. Near the head were two hawks, and two more were at the feet. The dead was designated by the inscription: 'Osiris the Good Being.' The hawks were labelled: 'Horus, avenger of his Father,' and the goddess Isis is also designated by her name.

This monument is one metre .70 in length and about one metre in width and height. The tomb itself has the shape of a dwelling, with a court-yard in front. It contains fourteen rooms, and the staircase, five rooms to the north, five to the south and four the east. The western face was open. The extremities, south and north, were closed by a wall on the east side. The tomb was about thirteen metres in length, twelve metres in width, and one-half metre in depth. There were evidences of fire in it. I found at the bottom of the rooms indisputable proof of the work of spoliators. This fact of the tomb having been destroyed by fire has rendered sterile a great part of my labor. This is to be lamented, and the case is hopeless, for what is lost is lost forever.

CLAY VASES of an early period are found by Amelineau at Abydos; one is inscribed Boethus, the first king of the Second Dynasty. The names on these vases are usually *Ka* names,

sometimes enclosed with a crenellated border, which Prof. Sayce hints represented the palace or fort in which his majesty resided.

HIERATIC TEXTS.—Among recent Hieratic translations is Prof. Erman's of a Middle Kingdom papyrus at Berlin. It is a long and argumentative dialogue between a man weary of this life and his soul. It is a question of life or death; which, after all, is preferable? Which gets the better of the argument is uncertain; but such records tell us that man felt or thought upon such themes as he does to-day.

ELECTRICAL LIGHTS are to be used in lighting the interior of the great pyramid. It is thought that under this blaze of an almost twentieth century illumination thousands will now visit Cheops where scores have hitherto entered the gloomy interior. Pharaoh used 100,000 man-power in its construction; now a 25,000 horse-power plant will light its interior and the long approach from Cairo; so that evening parties for Cheops will become a fashionable recreation. I hope an electric statue will not be added to the apex; and that the now sightless eyes of the Sphinx will not be turned into flashing "bull's eyes!"

BRANCHES of the Egypt Exploration Fund are already established in Chicago, Philadelphia and Detroit; New Haven, with Yale as a centre, is about to establish one for Connecticut; and New York is contemplating having its own in the metropolis. My judgment now is that, situated 3,000 miles away from London, we need committees to properly manage our own affairs, and that affiliation with the English committee is better than a direct union which places our office administration under foreign control. I hope to see local committees in all our large cities, which will appoint their own officers and then control their own business affairs. This is local self-government. I need a committee in Boston, to whom I can appeal or refer matters; for, although I am "the official representative of the Fund in America" and have a "general control" of the Boston office, I am practically without authority; or, having it, it is not recognized by the salaried secretary. Perhaps, in time, the branches will coalesce into an "American Fund," affiliated with the English Fund to carry on the work in Egypt. I will gladly hear from those who wish to establish a branch and will give to such my counsel and support. My address is 525 Beacon Street, Boston.



RT. HON. PROF. F. MAX MULLER.

EDITORIAL.

AULD LANG SYNE.

The term, *Auld Lang Syne*,* has been used by the celebrated Max Muller as a key to the memory and the title of a book devoted to personal recollections, which is divided into several parts. Recollections of Musicians, Literary Recollections, Recollections of Royalties, and finally of Beggars. We learn from it the great versatility of this great man and the wonderful advantages which he enjoyed when a young man. It appears that he was not only a musician and acquainted with musicians, but a poet acquainted with poets, and an author acquainted with other authors, including even novel writers such as Thackeray and Dickens. At Oxford he became acquainted with Ruskin, Tennyson and Browning. If not a theologian, he met with theologians such as Stanley, Maurice, Milman and Bishop Thirlwall.

*Auld Lange Syne. By Rt. Hon. Professor F. Max Muller, Author of *The Science of Language*, Etc. with portrait. Chas. Scribner and Sons, New York; 1898.

He met and had conversations with Darwin, who said to him in the kindest way: "You are a dangerous man." He also was privileged to associate with royalty, and was introduced and had access to the palaces in Germany and England.

The author says: "I began with Hayden, Mozart, Beethoven, —lived in Mendelssohn, rose to Shuman. I ventured at Leipsic to play at public concerts. Music has often helped me, for many a house in Paris and London would have remained closed to a mere scholar.

"Many of these old musicians were fine scholars. Böeckh, the great Greek scholar, lived in the same house with Mendelssohn, and it was at Bunsen's house at a matinee that I saw him (Mendelssohn) last."

The literary recollections begin with the ancient poets of the Vedas. They seem to have been quite aware why they spoke of metrical feet, for in the names of some of their metres we find clear traces of the steps of the dances which accompanied their poems. The last syllables, or steps of each line, mark the turn of the dancers; before they turn they mark the step more sharply or audibly, either as *iambic* or *trochaic* and after march back again with great freedom. In the most ancient Aryan poetry there is no trace of rhyme. It is the same semitic and in the Finnic languages.

Max Müller says: "I hardly remember ever having seen my father, and came to know him chiefly through his poetry. He was born in 1794 and died in 1827, and yet in that time he established a lasting reputation, not only as a scholar but as a poet.

"Whilst at Leipsic as a young student I still imagined myself a poet, and from time to time some of my poems appeared, to my great joy, in the local papers."

The Recollections of Royalty embrace such persons as Queen Victoria, Duke Leopold, the most independent sovereign of Europe, a splendid example of honesty, uprightness, fairness and justice," the Duchess of Desaw, who gave him an introduction to Alexander Von Humboldt, also, Frederick William the IV, "a man of exceptional talent, nay a man of genius." "Humboldt and I drove to Potsdam and I had a most delightful dinner and evening party. The king was extremely gracious, full of animated conversation and evidently in the best of humors."

He narrates one incident in connection with an interview with Queen Victoria. It appears that his uniform was miscarried, and in order to be presented to the Queen he was obliged to borrow, from all the officers, different parts of his costume. Fortunately just before the time for presentation his baggage turned up and he was able to appear in state costume without making known the accident. Notwithstanding these personal recollections, the

great thing which will be remembered about Max Müller is the fact that he accomplished so great a work.

These recollections of the celebrated author go back to the early days when the study of sanskrit and the oriental languages had just begun. Preceding this, the works of Sir William Jones, of Maurice, of Bryant, of Faber, and the books which were written upon comparative mythology were based mainly upon the fancied resemblances which were found in the works of art and literature, and not upon language. It would be delightful if there was some one who had had the pleasure of the acquaintance with these old writers who were hero worshipers, but at the same time had the utmost veneration for the Holy Scriptures and sought to represent confirmations. Max Müller commenced the independent line of research which, while it is parallel, it is entirely separate from that which we regard as the historic line and quite distinct from the scripture history.

His personal recollections have nothing to do with these special studies; they relate to the personal acquaintances, the great musicians, the distinguished literatis, poets and prose writers, and the recollections of royalties.

MINES AND MINING.

In the times of excitement about mines on the Klondike it is well to be reminded that there are mines near by and in more favorable places. Some of these are very ancient and have been worked by the Spaniards ever since their discovery; the most of these are in Mexico, others are in New Mexico, Colorado and Arizona, a region which the Spaniards held down until the Mexican war. It may be that the war now threatening will reveal other mines. The Spaniards have a faculty of concealing everything and developing nothing.

This thought is brought out by a little book which has reached its fifth edition; a book written by Mrs. Cora Hayward Crawford.*

This book is written in an interesting style and on that account is very popular. It treats of the scenery and the cities, and traveling conveniences and inconveniences, the mines, the industries, the churches, the antiquities, the history and government of Mexico. The mythology occupies a chapter of about ten pages; the antiquities are the same number of pages; the history occupies about fifty pages; the mines, ancient and modern, about twenty-five pages. This is the most interesting part, at least the most instructive, and is especially valuable at the pres-

**The Land of the Montezumas*. By Cora Haywood Crawford. [Illustrated]; Fifth Thousand. The Robert Clarke Co., Cincinnati; 1898.

ent time when there is so much excitement about mining in the far north. The people who are braving the hardships of the north might better visit the gold and silver mines of the southwest and carry their American industries into a land where both mines and soils would be productive.

PORTRAIT STATUES IN EGYPT AND AMERICA.

The frontispiece for this number which is taken from the recent book written by Rev. Dr. J. N. Fradenburgh entitled *Light from Egypt* suggests some important thoughts which we take the space to give to our readers briefly. It exhibits a series of statues which are found in the Temple of Ra, but gives rise to the comparison between the portraits of kings of Egypt, and the importance of the study of portrait statues for the proper understanding of Ethnology in all countries.

It is a singular fact that from the earliest time there were portraits which accurately represents the forms and faces of individuals. Some of them were kings, others noblemen, and a few private persons.

An unknown man of the Fourth Dynasty wrought out of a block of wood has been preserved. From this we learn the dress, the form, and the face of the men who lived in that time 2000 B. C. We see the dress was a simple tunic with a cord about the waist, a rude sword suspended from the cord, and a knotted staff is held in the left hand. All of it is very plain and simple, just as we would expect to see at this time. This is the earliest portrait and our readers are probably familiar with it for it is represented in all the works on Egyptology.

Later on there are the portraits of the Hyksos Kings. These have been described by Dr. A. H. Sayce. They are in great contrast to the statues just mentioned. They represent long, lank, lean, faces, just such faces as we would expect to see in the Turanian, or Mongolian races with a long lock of hair falling on the shoulder, resembling the pigtail of the Chinese, but more resembling the scalp-locks of the American Indians.

Still later there appears another another set of portraits. They seem to belong to a superior race, and yet one which was allied or akin to the first race that reigned during the first four dynasties, who were the pyramid builders but not the builders of the temples. The portraits of the Pharaohs are also given in most books on Egyptology. Among them the most interesting was that of Rameses II. These were tall and stately kings, but they also show something of the royal air. Later on, we find as great a change in the portraits as we do in costumes and in the art and agriculture of Egypt. The faces now resemble the Babylonians and Assyrian kings, as they have heavy beards

and full faces, and wear crowns or turbans. The hair falls in heavy folds below the crown. They seem to be well fed and are very complacent, and are in contrast to the warrior kings such as Rameses and others.

The age of Ptolemy brought in more luxury and ease which are exhibited in the portraits as much as in the surroundings of the kings.

All the way through the history of Egypt there was a line of nobility notwithstanding the changes and revolutions which occurred. There was evidently a progress in civilization, and this progress had as much effect upon individuals as upon the entire race, and marked its lines in their faces and forms as much as it did in their dress and equipage.



It is very interesting to trace this progress and study the history of Egypt and the East in the light of the portraits which have been preserved.

What shall we say about the early American history that which preceded the advent of the white men and the data of the discovery? Can we learn anything from the portraits which have been preserved in the land.

We have in the preceding numbers spoken of the portrait columns at Uxmal Palenque in Central America, and have maintained that they were the portraits of kings and queens. Some have thought differently, for they have held that they

represent the divinities and culture, heroes and mere imaginary figures. A few, such as M. Le Plougeon, have held that they were portraits which resembled Egyptian faces, and have imagined from this fact and others a connection between Egypt and America in prehistoric times.

A close study of the portrait columns will reveal the error for there is no resemblance whatever. There is, however, a lesson to be learned. These portraits are in great contrast, to the pictures of the North American Indians, of which Blackhawk was a specimen. They must have belonged to different races, and represent a different line of descent.

As further illustration of the portrait statues, we give one of the idols, or images which may be seen on the Easter Islands, standing with their faces toward the sea, apparently serving as guardian divinities. They resemble the Turanian faces which are still common on the island.

ROMANE'S SCIENCE OF RELIGION.

This famous book* contains the posthumous writings of Mr. Romanes. It shows that a candid examination of religion brought this great man out from the sea of doubts into which he had been plunged by scientific speculations to the firm faith which most christians have reached. It shows, first, that there is evidence of design found in nature, notwithstanding the natural processes and material laws, and this is accounted for by belief in a personal God or Theism. It shows, second, that there are religious processes of the human mind which are just as common as the natural processes are to creation, and are also just as natural, but they culminate in christianity and find there a safe and sure foundation for the future.

LITERARY NOTES.

The Land of Sunshine, edited at Los Angeles by Mr. Chas. F. Lummis, has many valuable articles upon the archæology of the west and southwest. It is well illustrated and very attractive. The plate representing the ruins of Pecos in this number is from this magazine.

Religions of Primitive People. A second series of lectures has just been published by Putnams. Courses for 1898-9 are already arranged.

**Thoughts on Religion*. By the late George John Romanes, M. A. LL. D., F. R. S. Edited by Charles Gore, M. A., Canon of Westminster. Fourth Edition. The Open Court Publishing Co., Chicago; 1898.

The American Explorers. A series of books are being edited by Elliott Coues and published by Francis Harper on early American explorers.

The Naturalist for March is an Agassiz number. It contains a sketch by the editor and a portrait, also several articles by specialists. Such specialists as Profs. A. F. Packard, A. F. Wright, D. S. Jordan, C. R. Eastman, B. G. Wilder and Miss Gertrude C. Davenport. The magazine has been enlarged since the new management has taken it.

The Woodland Bison. The existence of a race of buffalo peculiar to the woody tracts on the eastern base of the Rocky Mountains has been discussed in the Proceedings of the Academy of Natural Sciences, Philadelphia, page 498.

The American Geologist has an article for April on Drumlins of Glasgow by Prof. Warren Upham, and another on the glaciers in the Adirondacks by A. P. Brigham. The geologist and archæologist come very close together at a great many points, and all the more so since the subject of physical geography has been taught so thoroughly in the public schools. Ethnography, geography and geology are the successive terraces of a great pyramid which science is erecting.

Harper's Monthly is always welcome to our book table. The February number contains an article on the Russian Settlers in Dakota by Kirkman Roe and The Conde Museum in the Chateau of Chantilly in France by Henri Bouchat; both of them are illustrated.

The Popular Science Monthly for February and March have the articles by Prof. Wm. Z. Ripley on the Racial Geography of Europe. The March number has an illustrated article on the Great Sierra Nevada and its Glacial Remains, by Harold W. Fairbanks; another on the Personal Workers of the Academy of St. Louis by Prof. Frederick Starr, and on Fabric Marked Pottery, by F. S. Dillenbaugh; also an Article on The African Sahara, by Prof. Angelo Heilprin. The Editorial Notes are always instructive.

The Bibliotheca Sacra has an excellent article on the Early Religion of the Hindoos, by Herbert Wm. Magoun, with many references of the hymns of the Vedas. It is very scholarly and at the same times clear and easily comprehended.

Folk Lore for March has a review of a book on The Dolmens of Ireland, by W. C. Borlase, three volumes, 4 to —, by Alfred Nutt. Another on Lang's Modern Mythology, and another on the book entitled Studies on Biblical Subjects, by Prof. A. H. Sayce. In the latter review, Tiamat is the "deep" of the Old Testament; personified as the goddess, or rather as a female prin-

ciple of nature. The idea is the same as that which underlies the story of The Deluge in America, for Tiamat was conceived as a dragon or serpent which was under the water, as well as a serpent which encircled the earth, and a personification of the storm cloud and lightning flashes.

Amizonian Matriarchy. A discussion the of origin of Amizonian Matriarchy has been going on between Stewart Glennie and a reviewer of his book in *Folklore*. The primary civilizations were spontaneous developments from savagery, in which he maintains matriarchy was prevalent.

Bulletins de la Societe D'Anthropologie De Paris, Tome Huitieme, IV. Series. An article upon the Paleolithics in the Station De La Vignette, by M. Emile Collin, illustrated; also the Discovery of Prehistoric Objects, L'ile de Corse, by M. Caziot; also on the Neolithic Station at Venizel, by M. O. Beuregard; New Researches at Cromagnon. In the latter place a drawing of a female figure with retreating forehead on bone and of an animal like bison have been discovered.

ARCHÆOLOGICAL NOTES.

BY THE EDITOR.

SACRED NUMBERS IN THE EAST—The number seven as everybody knows, is sacred with the Bible writers. Its sacredness is supposed to have come from the story of Creation and the division of the week into days, a division which was followed by the Babylonians and the Assyrians and all the Semitic races and borrowed from them by the Aryans who introduced it.

THE DOLMENS OF IRELAND have an immense amount of Folklore connected with them. This is different from the monuments of America, for here there are no survivals of legends and no peasants to perpetuate ancient customs. The break from prehistoric to historic is abrupt. It seems important to gather the myths of the Indians and study their character so as to understand these monuments.

THE MEDICINE MAN IN MASHONALAND.—It appears that a "witch doctor" called "The Lions Paw" or Kagube who was a ventriloquist, had much to do with the revolt and prolonged the war. He was like the Indian prophet who kept up the disturbance in the Blackhawk war. The same supernatural mission was claimed by him.

This has been a common thing in history for a medicine

man led the revolt against the Spaniards in 1780, and the prophet aided Tecumseh in Pontiacs war.

THE ORIENTATION OF THE TEMPLE.—The Church of the Ascension on the Mt. of Olives stands in a line with the door of the Temple at Jerusalem so that the rays of the sun as it arose and passed over the tops of the Mt. of Olives, entered into the outer door of the Tabernacle even to the Ark of the Covenant in the Temple, passes across the Church of the Ascension and seemed to arise out of the church and to go up from it as the church stands higher than the Temple.

Norman Lockyer in Quarterly Statement, Jan., 1897.

EARTH SPIRIT.—Vetæ is the lord of the earth spirits in India. His usual abode is a mountain or wood on the bank of a river. He has no body but he lives on wind. He is made in the image of a man with green eyeballs; his hair stands on end. He wears a green dress and holds a cane in his right hand and a conch shell in his left. He is said to spend his time in serving Siva. He is often represented by a rough stone under a tree which is smeared with oil and red lead.

See Indian Antiquary for '97, P 207.

BOOK REVIEWS.

THE CRITICAL PERIOD OF AMERICAN HISTORY, 1783-1789 By John Fiske. Illustrated. Houghton, Mifflin & Co. Boston and New York

The Critical Period in American History was that which followed the American Revolution. At this time there was a great jealousy existing between the army and the common people feeling having arisen, because the officers who organized themselves into a society called the Society of Cincinnati, were supposed to have established an aristocracy. There were certain deeds of violence which one company, or regiment from Pennsylvania performed, which brought upon the whole more or less prejudice. This company grew desperate from the lack of pay, but the entire congress, assembled at Philadelphia, fell into such a panic that they were obliged to flee to Princeton, as the police authorities of Philadelphia would not protect them. Another cause of disturbance was the difficulty of adjusting the boundaries of the states. This is illustrated the case of Vermont. It appears that New Hampshire claimed all the territory east of the Connecticut River, and New York much of that which is west.

The "Green Mountain Boys" declared Vermont an independent state and applied to congress for admission into the Union. New York sent troops to the threatened frontier; New Hampshire also. War seemed to be inevitable. Through the influence of Washington and Gov. Chittendon peace was secured but the embers of hatred smouldered.

The greatest hardship was that which was endured by the settlers from Connecticut, who claimed the Wyoming valley as their own. This was in the state of Pennsylvania. It was decided by the special federal court that it belonged to that state, and a scheme was devised and supported by the legislature for driving out the settlers and partitioning the lands among a company of speculators. A man named Patterson led the militia, at

tacked the settlement, turned some five hundred people out of doors and burned their houses. Heart rending scenes ensued. Tender women, infirm old men and little children were driven into the wilderness at the point of the bayonet.

The Connecticut men in the neighboring country flew to arms. War between Connecticut and Pennsylvania was threatened. Public sympathy was gradually awakened for the sufferers. Another cause of disturbance was the enmity which existed between the Loyalists and the Tories. There was still in Great Britain the intention of humiliating the Americans. All during the period, preceding the Revolution, the policy was to enrich the mother country by impoverishing the colonies. There was no reciprocity treaty to prevent. After the war the colonies were independent and established a principle that trade could be conducted in any other country and was not to be confined to Great Britain. The delusive hope of confining British trade to British keels was dispelled. The American vessels were more numerous than the British.

The Musselman power which had sent privates from Morocco, Algiers, and Tunis, had continued to kidnap wealthy persons and cruised with seventy or eighty sail defying the navies of England and France. American citizens were seized and sold in slavery.

In 1786 Congress felt it necessary to take measures for protecting the lives and peace of American citizens.

The Tariff was another disturbing element in this period of history. A Tariff was not only placed upon English products, but was also levied upon the products which were carried between the states. New York requiring a revenue to be paid from the farmers of New Jersey and Connecticut who presumed to bring their produce to New York to sell.

The good sense of the people righted these difficulties, and adjusted the matters of trade between the colonies.

The paper money craze also arose. There was no Greenback party, but inflation of currency was popular. Madison hit upon an expedient. Commissioners from all the states met at Annapolis, remote from Congress and from the "wicked centres of trade" such as New York and Boston, and addresses by Alexander Hamilton were sent to all the states. Nathan Dane, Rufus King, and Gov. Clinton had a part. Geo. Washington was one of the delegates. As soon as this was known there was an outburst of joy throughout the land. Massachusetts had been obstinate owing to the distress felt which was produced by the inability of Congress to pay debts of the thirteen states. Rhode Island alone refused. A second convention was held in Independence Hall which was already immortalized as the of the Declaration of Independence.

Shay's Rebellion was an event which produced a reaction in favor of unity among the colonies. This occurred in Worcester, Mass. At Northampton, Worcester, Great Birmingham, and Concord the courts were broken up by armed mobs. The farmers were angry with the "wicked merchants and lawyers," but had no elections. They therefore resorted to violence. Shay was captured at a house in Petersham. Law was enforced. Gov. Bowdoin requested the neighboring states to lend their aid and bring the insurgents to justice. Rhode Island sympathized with the Rebels.

There was something like a civil war in North Carolina. The counties between the Bald Mts. and Clinch River constituted an independent state to which they gave the name of Franklin. For Governor they chose one of the heroes of King's Mountain and sent a delegate to Congress. The state was however absorbed by North Carolina after two factions had arisen.

Sevier, the hero of King's Mountain, sat in the senate of North Carolina and when Tennessee became a state he was elected her first governor.

The cause of the people was constantly advancing through the spirit of true Democracy. When persons were charged with treason by one party were acquitted and became prominent in politics and in the cause of the people. The west began to be settled and soon became a factor in history. The lands in Ohio came into market. Manasseh Cutler, the pastor and scholar, and statesman, and scientist, and man of business all in one,

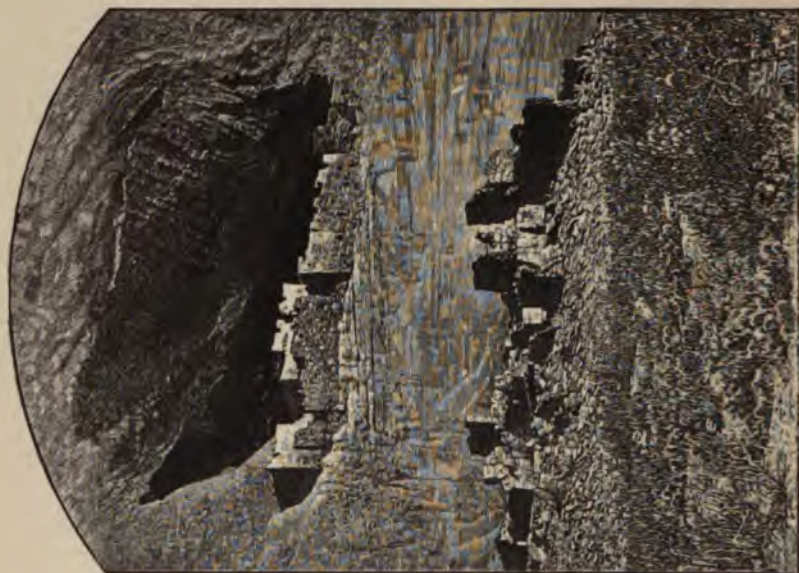
led the way to the settlement at Marietta on the Ohio. He is said to have been the originator of the provision which was introduced into the bill which excluded slavery from the Northwest Territory. The different colonies and states which had received grants from Royalty to lands, generously gave up the lands which were included in this territory. The early maps show the divisions. One map exhibits the "Spanish claims," another, the state of "Franklin" in North Carolina, another, the "Connecticut settlements" in Pennsylvania, another, the "Indian Territory" which in 1782 was east of the Mississippi. "The United States" was confined to the sea coast, but "Canada" extended down to the Ohio River. Another map shows the "Connecticut land" in Ohio, "Simms purchase," the military boundary lands, the lands of the "Ohio company," "Congress lands" and the "seven ranges." The northwestern territory was established including the area of the great states of Mich., Wis., Ill., Ind., and Ohio.

A map drawn by Thomas Jefferson exhibits Florida, Georgia, So. Carolina, North Carolina, Virginia, Pennsylvania, extending as far west as the Mississippi River and the Ohio, but the territory north-west of the Ohio is divided into five or six provinces with fanciful names, viz: *Poysisipia*, *Poly-potamia*, *Saratoga*, *Metropotamia*, *Ilinioia*, *Assenisippia*, *Michiginia*, *Chersonesus*, a marvelous compound of Latin and Greek and Indian names; not an English word among them; a fashion which is better in the breach than in the observance.

There were men in those days who accomplished great things. Alexander Hamilton was a young man 17 years of age when he began his career. He was private secretary to Gen'l. Washington. He lived long enough to see the Constitution adopted. The Herculean task of vanquishing a hostile majority in New York state which opposed it, fell chiefly on his shoulders. The Federalist, the most famous of American books, and the most profound and suggestive treatise on government, has been credited to Hamilton. Jay wrote five of the papers, Madison twenty-nine, Hamilton fifty-one. As a parliamentary debater, he had rare ability. He defended the constitution before the hostile convention of Poughkeepsie with an eloquence scarcely ever equaled. New York ratified the constitution and rejoicings were renewed throughout the country.

The Continental Congress decreed that Presidential electors should be chosen on the first Wed. of Jan., 1789, and cast their vote for President. The 4th. of March became the day for inauguration.

The book contains some very interesting illustrative cuts. Among these is one which represents Washington's journey to New York. It represents the great good man riding on horseback, the horse led by a lad, while children surround the General, and throw floral wreaths along his pathway, the benign face full of smiles, adding much to the expression of the picture. It was indeed a triumphal journey, and one which may be said to have ended the "critical period."



CLIFF DWELLINGS ON THE RIO DE CHELLEY



CAVATE HOUSES IN THE SHUPINNE.

THE
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No. 4.

CAVES AND CLIFF-DWELLINGS COMPARED.

BY STEPHEN D. PEET, PH. D.

We have in a preceding paper described the cave dwellings of Europe, and have there considered them as the representatives of the earliest abodes of primitive man. We are to devote this paper to the cliff-dwellings but shall first draw the comparison between them and the ancient cavefor by that means we shall be able to decide as to the age and social status of the people who inhabited the former. It is understood that the cliff-dwellers were the inhabitants of the great plateau of the West, and for aught we know, were the earliest inhabitants. The date of their appearance and of their disappearance is very uncertain, for there is an air of mystery about the people which is difficult to dispel. The most that we know of them is that at some indefinite time in the past they came into this region and amid the deep canyons and on the high mesas made their homes, drawing their subsistence mainly from the valleys though occasionally they followed the chase, and fed upon the wild animals which lived in the forest and roamed over the mountains. They seem to have been influenced largely by their surroundings, for in their art they used the material which abounded, and in their architecture imitated the shapes of the cliffs. They are unknown to us except by their works and relics, but from these we learn that they were considerably advanced in the scale of human progress and furnish in this respect a strong contrast to the cave-dwellers of Europe. They were likewise advanced beyond the ordinary savage and hunter tribes, and in their social status represented the middle stage of barbarism, rather than any of the stages of savagery. They were a sedentary people given largely to agriculture but cultivated the soil by means of irrigation. They were organized into clans and

tribes, and at first built their houses on the mesas and in the valleys. They seem to have been surrounded by wild tribes, who compelled them to find refuge in the sides of the cliffs, from which they were finally driven and then disappeared. Their history is unknown for there are no records left and very few traditions that can be relied upon. The pictographs which are found inscribed upon the rocks furnish some hints as to their religious notions, customs and myths, but they give very little information as to their history and their migrations. It is to the architectural structures and the relics that we look as our chief sources of information and especially the structures. These vary in character, but as a general thing they show the influence of the surroundings, for their form, shape, grouping and general character always conform to the situation in which they are found. The people were long enough in the country to have developed a state of society and a mode of life which were peculiar, and they adopted a style of architecture which has not been found anywhere else on the globe. This is best known under the term Pueblo style but the Pueblos and cliff-dwellings are so similar that both may be classed under the same head. The cliff-dwellings differ from the Pueblos only in the fact that they were erected in the side of the cliffs instead of in the valleys or upon the mesas. We propose to make these architectural works and the relics and tokens found around them and within them, the object of our study, and shall hope to ascertain the social condition, and the domestic life, of the people as well as their progress.

I The first question will be with regard to the age which they represent. The term age needs to be defined. Generally it means period which may be reckoned by years beginning with some fixed date. This is the use which is made of it in history, as the different nations have different eras which constitute the beginning of their history. The Greeks date theirs from the first celebration of the Olympian games, the Romans from the building of the city, the Hebrews from the exodus from Egypt, the Egyptians from the days of Menes their first King, the Persians from the birth of Zoroaster their great hero and religious founder, the Chinese from the birth of Confucius, the Turks and other Mohammedans from the birth of Mohammed, all Christian nations from the birth of Christ. There is also a use of the word which is peculiar to literature, for we have the Homeric age, the age of the poets and philosophers, the age of Demosthenes. Later on we come to the age of the Eddas and the Minnesingers, the age of the Schoolmen and the Elizabethan age. In art also we have the age of the Greek art, the Roman art, mediæval art, also the age of the renaissance, in art. In archæology, however, the term signifies something quite

different, for it is made to express the social condition, and grade of progress which existed during prehistoric times, as the supposition is that these grades and stages followed one another in a regular order of succession and the index of the grades is found in the material of which the relics were composed, while the architectural structures are subordinate to the relics. Such was the case in Europe. In America it is different. We have here the same variety of relics, some of them rude; some of them finely wrought but they rarely furnish any clue as to the time in which they were used or the age to which they belonged, as many of them were contemporaneous and belonged to the same period. There are to be sure in America certain geographical districts which contain a preponderance of rude relics, and others which present those which are highly finished. The archæological map when properly made may be said to represent the different stages of progress and grades of society, which in Europe have been ascribed to the different ages, the lines here being horizontal and covering the surface of the continent, which in Europe are perpendicular and constitute an archæological column. According to this system of classification we should place the cliff-dwellings high up in the scale and make the geographical district in which they are found represent the last age, which in Europe borders close upon the historic period, for the structures correspond to those which there immediately preceded history, though the relics present a lower grade, and would be ascribed to an earlier age. It is probable if the monumental history of the world were written we should find that the order of succession would be about as follows: 1. The Cave-Dwellings which may be divided into different classes according to the relics and remains which are found within them.* 2. The kitchen middens in which are found the debris of camps and the remains of animals on which people fed. 3. The barrows and tumuli which show the burial customs of the ancient people. 4. The dolmens, and chambered tombs. 5. The lake-dwellings which are so common in Switzerland and "crannogs" common in Ireland and "terramares" in the north of Italy. 6. The burghs, towers, § nirhags which are found in Scotland, Ire-

*The caves can be divided into three classes the earliest containing the bones of extinct animals such as the rhinoceros, hippopotamus, the elephas, primigenius, cave bear, hyena etc., the second by the bones of the rein-deer and other arctic animals, with occasional carvings and relics which show the presence of man, the last of the cave-dwellers presenting the bones of the horse, the aurochs, the bos-priscos or ancient ox and other animals which became domesticated.

§Perrott & Chipiez, say: "The architecture of the Aborigines of Sardinia exhibits a degree of originality witnessed nowhere else save in the Talagats of the Balearic Islands and the megalithic monuments of North Africa. Notwithstanding their rough and archaic character, both classes of structures, tombs and nirhags, show a distinct individuality. We are inclined to believe that Sardinia was occupied by two distinct people, differing from and at war with each other. The older inhabitants were those tribes respecting, whom we know nothing except that they were uncivilized and lived in rocky caverns. The latter were the builders of the nirhags, and may be called the nirhag people. These owing to the superiority of their arms and the solidity of their towers, were able to possess themselves of the more fruitful portions of the country; the early inhabitants gradually falling backward toward the centre without being pursued, for

land and in some cases in Sardinia. 7. The structures which are known to history, among which are the huts similar to the one occupied by Romulus and Remus and such tombs as have been found at Mycenæ and Tiryns.

In America we find a series which resembles these in the character of their architecture, but all of them contemporaneous. The main resemblance between them and the monuments of Europe consists in the grades of progress exhibited. The series would be as follows: 1. The ice-huts and Eskimo houses, also the shell heaps found on the north Atlantic coast. 2. The Ancient village sites, and ash heaps which are scattered over the forests of Canada. 3. The long houses and ancient villages of the Iroquois and the hunter-tribes of the great lakes. 4. The mounds and earth-works of the Mississippi Valley, the Ohio river and the Gulf States. 5. The wooden houses and ancient villages of the Indians of the North-west coast, including the highly wrought and grotesquely carved totem poles. 6. The cliff-dwellings and Pueblos scattered through the great plateau. 7. The ruins of the ancient cities of Mexico and Central America in which are found the pyramids and temples which were erected by the civilized tribes.

If we compare the two lists we shall find that the cliff-dwellings correspond to the towers and burghs of Europe, the pyramids in America, which are supposed to be the last of the prehistoric series correspond to the pyramids and temples of Egypt which are supposed to be the first of the historic series.

Such is the schedule which may be laid out by the study of the monuments as well as the study of the relics. It prepares the way for the consideration of the "ages."* The division of the prehistoric period into three distinct ages is confirmed. There were "successive periods of development" in both continents though the "chronological horizons" which have been recognized in Europe are lacking in America.†

II. The next inquiry will be in reference to the cliff-dwellings and their position among the prehistoric monuments. Our first

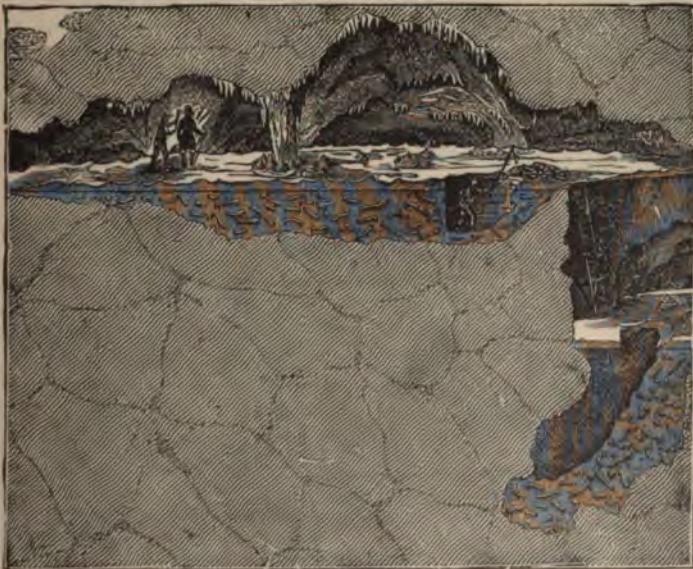
they left all that was worth having in their rear. The position was changed when the nirhag builders were invaded by the Carthaginians. A theory might be formed that the nirhags were placed to defend the people, but the probability is that they became absorbed with the Carthaginians. The Sardinians were at that stage when the means of defense were deemed of greater importance than the creature comforts, or the amenities of life. The tenor of life of this illiterate people was of as rude a description as well can be imagined. Cities they had none. The bare, miserable huts which formed their villages were arranged in serrated files around the nirhags. A saw, a horn, a comb a bone represent the whole of their domestic implements for personal use. The population consisted mainly of hunters and soldiers. Their aptitude in using lead, copper and bronze in making their arms and implements, when compared with pottery, attest this. Had the Phœnicians never visited Sardinia the use of tin and bronze would have been unknown to the inhabitants."

*We have already seen that the prehistoric works in Europe were to be divided into several classes belonging to different ages, and that taking them together they constitute a series in which the advancement of art and architecture can be recognized. The structures of the bronze age are as follows: (a) the palafittes or lake-dwellings which are situated in deep water, and contain relics of an advanced type (b) the ancient fortifications (c) circular towers, enclosures, etc.

†The parts of the European series which are lacking in America are as follows: 1. The chambered tombs and dolmens. 2. The cromlechs standing stones and alignments. 3. The lake dwellings, though the last seem to have their correlatives in the sea-girt villages which have been discovered off the coast of Florida.



HOHLEFELS CAVE AT WURTEMBERG.



BONE CAVE AT GAILLENREUTH, BAVARIA.



TOWER IN SARDINIA.



BROCH OF MOUSA, SHETLAND.

thought is that they are in great contrast to the caves of Europe, which are the only cliff-dwellings found there, but they correspond to the cavate houses which are very numerous in the Pueblo territory and represent the same stage of architecture.

The cliff-dwellings belong to a series which in Europe would be placed under the bronze age, but as no bronze was introduced into America they must be ascribed in common with the other monuments to the stone age. They, however, represent an advanced part of the stone age and so are in contrast with the cave-dwellings in Europe. In fact we are obliged to place the caves of Europe at one extreme and the cliff-dwellings at the opposite extreme, and are led to believe that the whole history of human progress, which took place during prehistoric times, is recorded in the structures which were erected between these two ages.*

There is another important point to be mentioned here. In Europe the monuments and relics seem to follow one another in the order of time, and exhibit different periods or ages. In America each series begins abruptly without any preceding stage. In fact the civilization of America, whatever it was, seems to have sprung, like Athene, from the head of Jupiter, fully armed. This has been noticed by others, as the following extract from Sir Wm. Dawson will show :

"The abrupt appearance of man on this continent, his association with animals which belong to the most recent quarternary period, and the entire lack of evidence that he ever associated with any of the extinct animals, makes the contrast between the two very great. His introduction into Europe was at the close of the great ice age and yet mysterious revolutions of the earth occurred in that age. The continual oscillation may have gone on at intervals for many thousands of years ; but the last period of the elevation is the equivalent of the early appearance of man and joins upon the Paleolithic age. The contrast between America and Europe is that the Paleolithic age is left out and the geological time joins hard upon historic times. The real interest in the prehistoric people here, such as the mound-builders and cliff-dwellers, is not in their antiquity but in the fact that they reproduce a condition of society which immediately preceded history. They show to us that condition of society on which history was built which existed in the East two or three thousand years before the Christian era and perhaps five thousand years before the Discovery. Some

*All caves in Belgium, France, England, etc., which were easily accessible, and provided with a sufficient opening, were inhabited. In the middle was the hearth, paved with sand-stone or slate, and around this the family gathered during the season of intense cold. There were caves also, which being too much exposed to the weather, served only as a dwelling in summer. Such occur in the south of France, and are destitute of any traces of a hearth, though otherwise affording the clearest evidence of having been inhabited by men. The caves in Europe which give the most evidence of having been occupied are three grottos of Les Eyzies, Laugerie, Basse and La Madelaine, in the department of Dordogne. The first of these is high and wide enough to enable the light to penetrate throughout being 12 meters deep, 16 broad, and 6 meters high; it appears to have been used in the middle ages as a stable for horses; When Lartet and Christie began their explorations, the grotto had been considerably enlarged and deepened by earlier occupants, though the explorers found at the bottom a compact floor, from which projected masses of blackish stalagmite, flint instruments, stones and pieces of bone; this bone breccia lay immediately on the rock floor of the cave, and showed a thickness of one of three decimeters. Large pieces were broken loose, which were sent partly to different museums, but in greater quantities to Paris, with a view to more exact examination. The station of Laugerie-Basse is partly in the hollow of a rock, whose face is 100 feet high, while a part of the formation, on which appeared traces of an open fire place, extended outwardly in front of the cavern.

imagine that this continent was inhabited by the Aborigines long before the beginning of history else-where, but for the present we have no evidence to prove it. This is not denying that there may have been a paleolithic age in America, yet so far the evidence is unsatisfactory—for all the relics which in Europe are ascribed to the three age, are here crowded into the single one, the Neolithic—the cliff-dwellings representing the last part."

III. This leads us to consider the relative age of the cliff-dwellings and caves. On this there seems to be a difference of opinion, some think the cliff-dwellings as ancient as the caves of Europe and ascribe to them a marvellous antiquity, while others think they were very modern, and were perhaps occupied after the advent of the white men, though no relics have been discovered in them which would show contact with the whites, the truth lies probably between these two classes, for there is evidence that the cliff-dwellings were occupied at different periods, some of them very early, earlier than any of the Pueblos, others quite late.

We shall quote from both classes. The following is from Mr. W. H. Holmes, who visited and described the group of cave-dwellings and towers on the Rio San Juan, and furnished a drawing of the cliffs and of the towers above the cliffs.*

"On examination I found them to have been shaped by the hand of man, but so weathered out and changed by the slow process of atmospheric erosion that the evidences of art were almost obliterated.

"The openings are arched irregularly above, and generally quite shallow, being governed very much in contour and depth by the quality of the rock.

"The work of excavation has not been an extremely difficult one even with the imperfect implements that must have been used as the shale is for the most part soft and friable.

"It is also extremely probable that they were walled up in front and furnished with doors and windows, yet no fragment of wall has been preserved. Indeed so great has been the erosion that many of the caves have been almost obliterated, and are now not deep enough to give shelter to a bird or bat. This circumstance should be considered in reference to its bearing upon its antiquity. If we suppose the recess to be destroyed as six feet deep, the entire cliff must recede that number of feet in order to accomplish it. If the rock were all of the friable quality of the middle part, this would indeed be a matter of a very few decades; but it should be remembered that the upper third of the cliff face is composed of beds of comparatively hard rocks, sandstones and indurated shales. It should also be noted still further that at the base of the cliff there is an almost total absence of debris or fallen rock, or even of an ordinary talus of earth, so that the period that has elapsed since these houses were deserted must equal the time taken to undermine and break down the six feet of rock, plus the time required to reduce this mass of rock to dust; considering also that the erosive agents are here unusually weak, the resulting period would certainly not be inconsiderable."§

The view given by Prof. Cope is the same as that given by Mr. Holmes; he formed his opinion as to the antiquity of the

*See Hayden's report for 1876, Bulletin Vol. 1, No. 1.

§"Figure 2 gives a fair representation of their present appearance of these dwellings, while their relations to the groups of ruins above will be understood by reference to page 1. These ruins are three in number—one rectangular and two circular. The rectangular one, as indicated in the plan C, is placed on the edge of the mesa, over the more northern group of cave-dwellings; it is not of great importance, being only 34x40 feet, and scarcely 2 feet high; the walls are one and one-half feet thick and built of stone."

ruins from the erosion which was manifest, and from the evidences of the change of climate. This has been controverted, it is now held by many that the climate is exactly the same when the ruins and the caves were inhabited as now, but the reservoirs and means of storing up water, near the Pueblos, have been destroyed. The following is his language :

"In traversing the high and dry Eocene plateau west of the bad land bluffs, I noticed the occurrence of crockery on the denuded hills for a distance of many miles. Some of these localities are fifteen and twenty miles from the edge of the plateau, and at least twenty-five miles from the edge of the Gallinas Creek, the nearest permanent water. In some of these localities the summits of the hills had been corroded to a narrow keel, destroying the foundations of the former buildings. In one locality I observed inscriptions on the rocks, and other objects, which were probably the work of the builders of these stone towns; I give a copy of figures which I found on the side of a ravine near to Abiquiu on the river Chama. They are cut in jurassic sandstone of medium hardness, and are quite worn and overgrown with the small lichen which is abundant on the face of the rock. I know nothing respecting their origin. It is evident that the region of the Gallinas was once as thickly inhabited as are now the more densely populated portions of the Eastern states. The number of buildings in a square mile in that region is equal to, if not greater than, the number now existing in the more densely populated rural districts of Pennsylvania and New Jersey. Nevertheless if we yield to the supposition that during the period of residence of the ancient inhabitants the water supply from rains was greater than now, what evidence do we possess which bears on the age of that period? There is no difference between the vegetation found growing in these buildings and that of the surrounding hills and valleys; the pines, oaks and sage brush are of the same size, and to all appearances of the same age. I should suppose them to be contemporary in every respect. In the next place the bad lands have undergone a definite amount of atmospheric erosion since the occupancy of the houses which stand on their summits. The rate of this erosion under present atmospheric influence, is undoubtedly very slow. The only means which suggested itself, at the time, as available for estimating this rate was the calculation of the age of the pine trees growing near the edge of the bluffs."

Such was the view of the early explorers. Others, however, have noticed the different periods of occupation. These are indicated by the relics and remains as well as the structures. Among the relics the pottery is the most suggestive. It appears there were several kinds of pottery, white decorated with black lines, red with black geometrical designs, corrugated, indented plain red and plain black coarsely glazed. Of these the white with black lines is regarded as the most ancient as it is found with the most ancient remains. Many specimens of this kind of pottery are found in various localities, among the cliff-dwellings of the San Juan among the ancient ruins west of the Rio Grande, and among the Portreros in South Eastern New Mexico and a few specimens in Arizona in the Valley of the Gila. It is found oftener in the ruins of small houses and near the ancient caves or cavate houses, than among the Pueblos, thus showing that the caves were first occupied and preceded the Pueblos. In the northern section of this Pueblo territory the class of pottery is

found which in Utah and New Mexico is characteristic of the small houses, but here appears associated with all kinds of ruins, detached family dwellings, round towers, cliff-houses, villages built in caves and "rock-shelters." In the cliff-houses and cave-dwellings which line the walls of Canyon de Chelley, the black and white, the corrugated, the indented ware, is found, and with it some quite handsomely decorated, thus showing that even in this region there was a succession. Mr. Nordenskjold noticed that among the cliff-dwellings on the San Juan, the black and white was associated with the oldest and rudest ruins and this with the rude character of the foundation walls as well as the human remains discovered led him to believe that among the cliff-dwellers there were different periods of occupation and possibly different tribes. A similar succession has been recognized in other parts of the Pueblo territory. Mr. Bandelier found cave-dwellings at the west of the Rio Grande and among the Portreros, which contained many specimens of pottery of the ancient types, namely black and white, which show that here at least, there were people who made permanent homes, and that the small houses were not mere temporary refuges or resorts. He says:

"The Potrero Chata represent two varieties of ancient architecture each accompanied by a distinct type of pottery. The small house ruins, of which the potsherds belong to the ancient kind, cannot have been mere summer ranches, for it is not presumable that the Indians would use one class of earthenware for winter and another kind in summer. Hence I consider myself justified in concluding that there were two distinct epochs of occupation. Wherever the caves stand without Pueblo ruins, in the immediate vicinity, they show almost exclusively the old kinds of potsherds, the black and white or gray and the corrugated. This would indicate that the artificial caves and the small houses belong to the same period, anterior to the many storied Pueblos. This is confirmed by another fact. While the buildings in this vicinity, whether large or small, are made of blocks of tufa, the walls of the Pueblos seem well preserved but the small houses are reduced to the foundation rubbish."

The same author speaks of the ruins of Portrero de Las Vegas and of the stone idols found near them. The name applied to the locality signified "where the panthers lie extended." He refers to the life size images of panthers which lie a few hundred yards west of the ruins in low woods near the foot of the cliffs. The age and object of the images is unknown, but the fact that pottery of a coarsely glazed and black and white as well as corrugated type abound near the ruins would show that they are ancient. They possibly were the totems of an ancient tribe though they have been ascribed to the Queres—a tribe still dwelling in the region.

Mr. Bandelier speaks of two other images of panthers which were situated on a mesa which rises above the Canada 304 feet in height. They are situated in the open space, but are in better

condition than those on the Potrero de las Vecas as the rock on which they were carved is much harder, and has consequently resisted atmospheric erosion far better. There is a tradition among the Cochitis that they were made by their ancestors, who were the inhabitants of Kuapa, an ancient village situated about a mile away. They were probably the shrines of a people who worshiped the panthers as one of their prey Gods, very much as the Zunis did before the advent of the whites, and do even at the present day.

Mr. W. H. Jackson also speaks of ancient cave-dwellings walled up circular orifices in the rock generally inaccessible, but approached by steps or small holes cut in the rock though the steps are now so worn down by the disintegrating influences of time that they are hardly perceptible. He speaks also of another locality



ANCIENT WALL ON THE MESA.

* Where the ruins consist entirely of great mounds of rocky debris piled up in rectangular masses covered with earth and a brush growth bearing every indication of extreme age, just how old it is about as impossible to tell as to say how old the rocks of this canyon are. Each separate building would cover generally a space of about 100 feet square, they are generally subdivided into two or four apartments. There were no cave-dwellings in the neighborhood of this group, but two or three miles below several occurred one of which is built in a huge niche in the solid wall of canyon with its floor level with the valley."

"Among the ruins on the Epsom Creek within a distance of fifteen miles there are some sixteen or eighteen promontories and isolated mesas

every one of them covered with ruins of old and massive stone built structures. They average in size one hundred by two hundred feet square, down to thirty by fifty feet, always in a solid block, and, with one exception, so nearly similar that a description of one will fairly represent all. The peculiarity here consists principally in the size and shape of the stones employed as well as in the design of its ground plan. The ruin occupies one of the small isolated mesas, whose floor is composed of a distinctly laminated sandstone, breaking into regular slabs from eighteen inches to twenty-four inches in thickness; these have been broken again into long blocks and then placed in the wall upright, the largest standing five feet above the soil in which they are planted. Very nearly the entire length of this wall is made up of the large upright blocks of even thickness, fitting close together, with only occasional spaces filled up with smaller rocks. In one place the long blocks have been pushed outward by the weight of the debris back of it. One side of the large square apartment in the rear is made of the same kind of rocks, standing in a solid row. The walls throughout the rest of the building are composed of ordinary sized rocks, with an occasional large upright one. Judging from the debris, the walls could not have been more than eight or ten feet in height. The foundation line was well preserved, enabling us to measure accurately its dimensions. The large square room was depressed in the centre, and its three outside walls contained less material than in the rest of the building. No sign of any aperture, either of window or door, could be detected. The more numerous class of ruins occupying the mesas and the promontory points consists of a solid mass of small rectangular rooms arranged without appearance of order, conforming to the irregularities of the surface upon which they are built, and covering usually all the available space chosen for their site. All are extremely old and tumbled into indefinite ridges five or six feet high with the stones partially covered with sage brush, grease, wood and junipers. They occupied every commanding point of the mesas—usually so placed in the bends as to afford a clear outlook for considerable distances up and down the canyon. They resemble in this respect the sites chosen by the Moquis in building their villages; but we were not able to trace the resemblance further, from the extremely aged and ruinous state in which these remains are found."

IV. The relative age of the "cavate lodges" and the "cliff-dwelling" may well be considered in this connection. On general principles we might consider that the caves were the older, for they are ruder, and the scenery wilder yet the cliff-dwellings themselves were strangely enough, sometimes placed at almost incredible heights, and amid the wildest scenes of nature. There is an unwritten history in these varied structures, and there is a temptation oftentimes to read into them, a fabulous antiquity.

We judge from these ruined walls and their proximity to the caves, as well as the character of the caves themselves, that the cliff-dwellers were much farther advanced than the cave-dwellers of Europe. Even the caves which seem to be very old have ruined towers connected with them, which show much skill in architecture. The age of the caves is of course unknown, but it seems to be very considerable.

There is another side to this subject. The caves and dwellings discovered by these gentlemen undoubtedly belong to an early period of the Pueblo's and cliff dweller's history, but there are also caves which were occupied at a much later date and it will therefore be well to examine them before we draw conclusions in

reference to the relative age of the caves and the cliff-dwellings. These are situated in the midst of the very plateau where the cliff-dwellings are found and probably belonged to the same people, and to the same age. They differ in nearly all respects from the caves of Europe, for they evidently belong to the neolithic age, and the same part of the age to which the cliff-dwellings belong, but they illustrate a fact which is as common in modern as in ancient times. The people may have reached the same grade of civilization, and have followed about the same kind of life, using the same kind of tools, implements, utensils, and yet be living in very different kind of houses, inasmuch as their circumstances and resources differed. In this respect prehistoric people were not different from historic people. It is then no evidence of very great age if it is proved that people lived in caves, for there are caves in Europe which are occupied even to this day, and it is supposed by many of the explorers that some of these caves of the far west were occupied after the cliff-dwellings. Such seems to be the opinion of Maj. J. W. Powell, Mr. Ad. F. Bandelier, Mr. Cosmos Mendelliff and others. Mr. Bandelier says:

"Cavate lodges, cave-dwellings and cliff-dwellings are only different phases of the same thing. There are but three regions in the United States in which cavate lodges are known to occur in considerable numbers, viz.: on San Juan river, near its mouth, on the western side of the Rio Grande, near the Pueblo of Santa Clara; and on the eastern slope of the San Francisco mountain, near Flag-staff, Arizona. To these may now be added the Rio Verde region. Cave villages of the kind described are numerous, occupying an area of about three thousand square miles. They are merely a local feature to which the Indian was induced to resort by the nature of the prevailing geological formation."

It may be well then to study the different localities in which the so called cavate lodges are found and compare them with those where the cliff-dwellings abound. It will be seen that these caves or cavate lodges like the caves of Europe are in the midst of wild and mountainous regions, but in regions in which volcanic rocks are friable and so caves are easily excavated.

The most interesting locality is that west of Santa Clara. Here there are two high cliffs which are visible for thirty miles; their white ash-colored stone making them very conspicuous. One of them is called the Shufinne. A view of this rock with the caves dug out of it may be seen in the cut. Mr. Bandelier describes it in the following words:

"Twelve miles from the Rio Grande the light colored pumice-stone and volcanic ashes of which the mesas are mostly formed rise in abrupt heights. On the north side a castle-like mesa of limited extent, detaches itself from the foot of the Pelado. The Tehuas call it the Shu-finne, and I have seen it distinctly from a distance of thirty miles. It is not the absolute height of the rock (I should estimate it at not over 150 feet above the mesa,) but the almost perfect whiteness of its precipitous sides and lower slopes against the dark mass of mountains that makes it so conspicuous. The perimeter of the Shu-finne is not very large, and its base is surrounded by cedar and

juniper bushes with a sprinkling of low pinon trees. Two-thirds of the elevation of this rock consist of a steep slope covered with debris of pumice and volcanic tufa. Along the base of the vertical upper rim small openings are visible which are the doorways of artificial caves. The Shu-finne contains a complete cave-village, burrowed out of the soft rock by the aid of stone implements."

The Pu-ye lies lower than the Shu-finne and, as seen from it, the latter looms up conspicuously in the north, like a bold white castle. The caves extend at irregular intervals in a line nearly a mile long, sometimes in two, and occasionally three rows. They must have been capable of harboring at least 1000 people. In some places beams protrude from the rock, showing that houses have been built against it, along side of cave-dwellings. See plate.

South of the Pu-ye extends a level space whose soil appears to be quite loamy and fertile, and on this level are traces of garden spots. There is little pottery about the ruins. In some of the enclosed spaces or garden plots, trees have grown up. The ruins, as well as the almost obliterated artificial caves at the base of the mountain, seem to be much older than cave-villages of the Shu-finne and Pu-ye, as some of the caves show the front completely worn away, leaving only arched indentations in the rock. There seem to be vestiges of two distinct epochs marked by two different architectural types, artificial caves and communal Pueblos built in the open air.

"The ascent to the caves is tedious, for the slope is steep, and it is tiresome to clamber over the fragments of pumice and tufa that cover it. Once above we find ourselves before small doorways, both low and narrow, mostly irregularly oval. I measured a number of the cells and found their height to vary from 1.47 (4 feet 10 inches) to 2.03 m. (6 feet 8 inches.) Most of them, however, were over 5 feet high. The outer wall was usually 0.30 m. thick like most of the Pueblo walls. I noticed little air-holes and also loop-holes in the outer walls, but no fire-places, although as Mr. Stevenson has so observed, the evidences of fire are plain in almost every room. There is another locality of artificial cave-dwellings only three miles distant from Shu-finne called Pu-ye. It is also a mesa of pumice rock, and rows of pines partly cover the summit, and quite a large Pueblo ruin whose walls of pumice rise to a height of two stories and cover the top of the cliff. There was also a level platform all along the base of the vertical declivity, wide enough at one time to afford room for at least one cell if the rock were used as a rear wall. This rock is soft and friable, and can easily be dug into by means of sharp and hard substances, such as obsidian and flint. The volcanic formation of the mountain affords sufficient quantities of both materials, but chiefly of obsidian. Basalt chisels rudely made have also been found in connection with the caves. That the caves are wholly artificial admits of no doubt, and it was in fact easier for the Indian to scrape out his dwellings than to build the Pueblo whose ruins crown the summit of the cliff. Since Mr. J. Stevenson examined the Puye, in 1880, the locality has been frequently visited and but few specimens of broken objects are obtainable. I refer to the catalogue published by the Bureau of Ethnology for a description of the collections made on the spot by Mr. Stevenson in 1880. Mr. Eldredge has in his possession several valuable specimens from the Puye. These relics have nothing to distinguish them from those found in Pueblo ruins in general, but the pottery is not so well decorated as that of Ojo Caliente and El Rito Colorado. Fragments of a coarsely glazed variety are very abundant, and I know of but one specimen of incised ware found



CLIFF-HOUSES AT WALPI.

These houses are comparatively modern but illustrate the development of architecture ; First, Cave-Houses ; Second, Cliff-Dwellings ; Third, Pueblos.



CLIFF-HOUSES ON THE SAN JUAN.

These houses were discovered by Mr. W. H. Holmes, in the San Juan Valley. They filled the niches in the rock but connected with one another and constituted an abode for a family or a clan.

at or about the artificial caves. The vertical wall in which the caves have been excavated varies in height. In places it might be only six meters (twenty-five feet); in others it attains as many as sixteen (fifty feet.) The incline on the other hand is twenty meters (sixty-five feet), on the western end and as many as fifty meters (one hundred and sixty feet) on the eastern end. As the denuded faces of the cliff are those of the south and east, it follows that the caves extend around it from the southwestern to the north-eastern corner, forming a row of openings along the base of the vertical wall. On the whole, the interior of these cells resembles that of a Pueblo room now of ancient type. There are even the holes where poles were fastened, on which hides, articles of dress, or dance ornaments were hung, as is still the custom of the Pueblo Indians. In one room I noticed what may have been a stone frame for the metates. The interior chambers may have been used for store-rooms, or the largest of them may have also served as dormitories. Every feature of a Pueblo household is found in connection with these caves. They form a pueblo in the rock, and there are also a number of estufas. The cave-houses and the highest Pueblo appear to have been in days long previous to the coming of the Europeans the homes of a portion of the Tehua tribe whose remnants now inhabit the village of Santa Clara. The country south of this interesting spot abounds in artificial caves. In nearly every gorge the cliffs show traces of such abodes. The country west of the Rio Grande in the vicinity of the Rito de los Frijoles abounds with caves which were abandoned at the time of the Spanish invasion. The cave dwellings of the Rito are very much like those already described. The caves themselves are poor in relics except those of the upper tiers. It appears that where the cliffs rise vertically, terraced houses were built using the rock for the rear wall.* These are one, two and even three stories high and leaned against the cliff. Sometimes the upper story consisted of a cave and the lower of a building."

The country west of the Rio Grande, in the vicinity of the Rito de los Frijoles is wild, with deep canyons traversing it like gashes cut parallel to each other from west to east. They are mostly several hundred feet in depth, and in places approaching a thousand. On the northern walls, facing the south or east, caves, usually much ruined are met with, in almost every one of them. There are also several pueblo ruins on the mesas, about which I have only learned from the Indians that they were Tehua villages, and that their construction, occupation and abandonment antedate perhaps by many centuries the times of Spanish colonization.

Another locality is mentioned by Mr. Bandelier and is illustrated by the plate.

Almost opposite San Idelfonso begins the deep and picturesque cleft through which the Rio Grande has forced its way. It is called "Canyon Blanco," "Canyon del Norte," or "White Rock Canyon." Towering masses of lava, basalt and trap form its eastern walls; while on the west these formations are capped, a short distance from the river, by soft pumice and tufa.

Major Powell also speaks of cave-houses which were constructed in the midst of the extinct craters of San Francisco mountain. He says:

"In the walls of this crater many caves are found, and here again a village was established, the caves in the scoria being utilized as habitations of

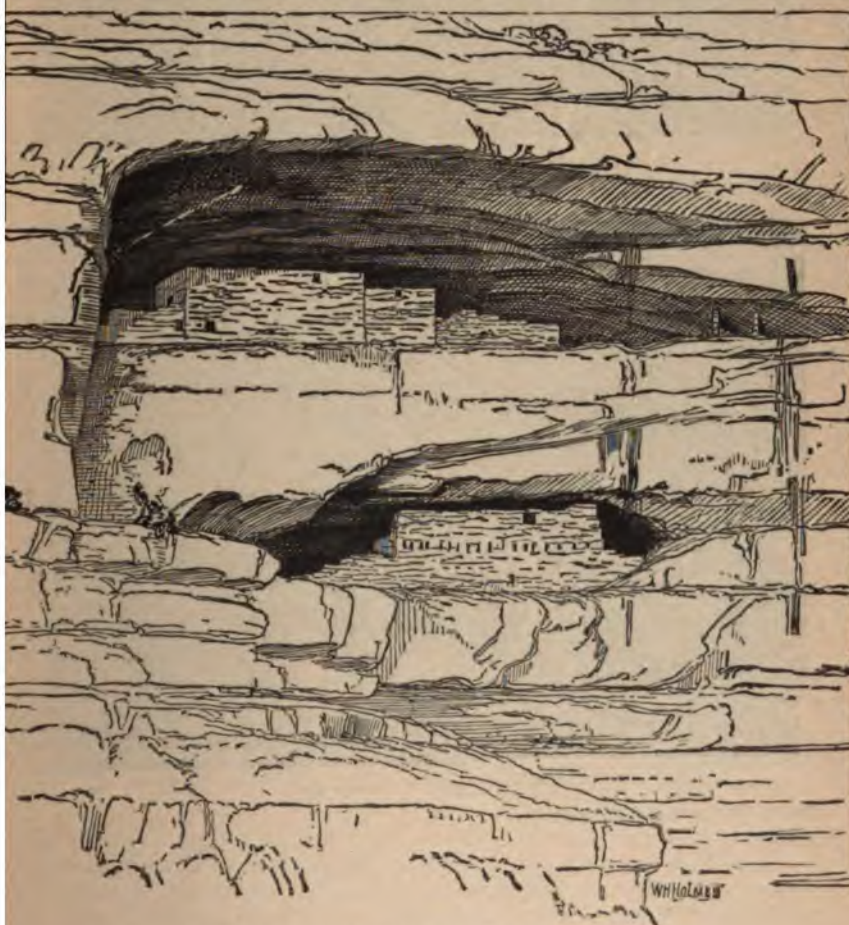
*The plate opposite page 100 accompanying this chapter illustrates the point. The Caves at Shufine and the Cliff-Houses at Rio de Chelly have houses leaning against the Cliff.

men. These little caves were fashioned into rooms of more symmetry and convenience than originally found, and the openings of the caves were walled. Nor did these people neglect the gods, for in canyon and craters of this plateau were utilized in like manner as homes for tribal people, and in one cave far to the south a fine collection of several hundred pieces of pottery has been made."

Major Powell speaks of Indians who built pueblos sometimes of the red sandstone in canyons and oftener of blocks of tufa. He says this material can be worked with great ease and with crude tools. Of the harder lava they cut out blocks and built pueblos two and three stories high. The blocks are usually 20 inches in length, 8 inches in width and 6 inches in thickness. These Indians left their pueblos on the plateau where the Navajo invasion came, and constructed cavate homes for themselves--that is they excavated chambers on the cliffs which were composed of tufa. On the face of the cliff hundreds of feet high and even miles in length, they dug out chambers with their stone tools, these chambers being little rooms eight or ten feet in diameter. Sometimes two or more such chambers connected. Then they constructed stairways in the soft rock, by which their cavate houses were reached; and in these rock shelters they lived during times of war. Mr. Mendeliff speaks of caves and cavate lodges which are near boulder sites, and old irrigating ditches on the Rio Verde and Limestone Creek. Here the almost entire absence of cliff-dwellings and the great abundance of cavate lodges is noticeable; the geographical formation being favorable to caves and unfavorable to cliff-dwellings, whereas on the Canyon de Chelly there are hundreds of cliff-dwellings and no cave-lodges. This is accounted for as an accident of environment where the conditions are reversed. He says :

"The relation of these lodges to the village ruins and the character of the sites occupied by them, supports the conclusion that they were farming out-posts, probably occupied only during the farming season according to the methods followed by many of the Pueblos today, and that the defensive motive had little or no influence on the selection of the site or the character of the structures. The boulder-marked sites and the small single-room remains illustrate other phases of the same horticultural methods, methods somewhat resembling the "intensive culture," of modern agriculture, but requiring further a close supervision or watching of the crop during the period of ripening. As the area of tillable land in the Pueblo region, especially in its western part is limited, these requirements have developed a class of temporary structures, occupied only during the farming season. In Tusayan, where the most primitive architecture of the Pueblo type is found, these structures are generally of brush; in Canon de Chelly they are cliff-dwellings; on the Rio Verde they are cavate lodges, boulder-marked sites and single house remains; but at Zuni they have reached their highest development in the three summer villages of Ojo Caliente, Nutria and Pescado."

Mr. Brandelief speaks of caves and cavate houses on the upper Gila and of others in Chihuahua. In both of these localities the region is wild and mountainous, just such as we would naturally expect to find occupied by cave-dwellers.



THE CLIFF-DWELLINGS ON THE MANCOS.

graving illustrates the difference between caves, cavate-houses and cliff-dwellings. The lower represents a cavate-house, the upper a fortress.



SCENERY ON THE MANCOS.



THE BAD LANDS IN UTAH.

From Frye's Complete Geography.

They resembled in this respect the home of the Troglodytes in Europe.

Sacrificial caves, and spots sacred as shrines are quite numerous on, and about, Thunder Mountain, and a host of legends



and folk tales cluster around the towering Table Rock. There are also pictographs and symbols near the caves and cliff-dwellings of the San Juan and the west of the Rio Grande; but these cave-lodges seem to be destitute of them, showing that they were only temporary places of refuge. Concealment was one object. The following is the description of the cavate houses on the Upper Gila:

"These buildings occupy four caverns, the second of which towards the east is ten meters high. The western cave communicates with the others only from the outside, while the three eastern ones are separated by huge pillars, behind which are natural passages from one cave to the other. The height of the floor above the bed of the creek is fifty-five meters, and the ascent is steep, in some places barely passable. To one coming from the mouth of the cliff the caves become visible only after he has passed them, so that they are well concealed. Higher up the several branches through whose union the Gila River is formed, cave-houses and cave-villages are not uncommon. Mr. Henshaw has published the description of one situated on Diamond Creek, to which description I refer. As the gorges become wilder and the expanses of tillable land disappear, the rocks and cliffs were resorted to as retreats and refuges. Whether the cave-dwellings and cliff-houses were occupied previous to the open-air villages along the Mimbres, or whether they were the last refuges of tribes driven from their homes in valley, it is of course not possible to surmise."

According to Mr. Bandelier the cave-dwellings are to be



found as far south as the Casas Grandes in Chihuahua. There seems to have been a variety of structures, some of them very elaborate and bearing the type of architecture which is common in Mexico, others very rude, scarcely any better than that

These cuts illustrate the progress of prehistoric architecture in Europe. The barrows were first, the lake dwellings second, the dolmens third, the bee-hive and conical towers last. The same progress was seen in America.

which the wild Indians would construct. The region is mountainous and so was occupied by different tribes, the Apaches having made it a resort. The following is a description of the locality:

"The so-called Puerto de San Diego, a very picturesque mountain pass, ascends steadily for a distance of five or six miles. On its northern side rise towering slopes, the crests of which are overgrown with pines. In the south a ridge of great elevation terminates in crags and pinnacles. The trail winds upward in a cleft, and is bordered by thickets consisting of oak, smaller pines, cedars, mezcalagava and tall yucca. As we rise the view spreads out towards the southeast and east, and from the crest the plain below and the valley of Casas Grandes, with bald mountains beyond, appear like a topographical map. Turning to the west, a few steps carry us into lofty pine woods, where the view is shut in by stately trees surrounding us on all sides. The air is cool; deep silence reigns; we are in the solitudes of the eastern Sierra Madre. These mountains fastnesses are well adapted to the residence of small clusters of agricultural Indians seeking for security. I therefore neither saw nor heard of ruins of larger villages, but cave-dwellings were frequently spoken of. Some very remarkable ones are said to exist near the Piedras Verdes, about two day's journeying from Casas Grandes. I saw only the cave-dwellings on the Arroyo del Nombre de Dios, not far from its junction with the Arroyo de los Pilares. They lie about thirty-five to forty miles southwest of Casas-Grandes. The arroyo flows through a pretty vale lined on its south side by stately pines, behind which picturesque rocks rise in pillars, crags and towers. The rock is a reddish breccia or conglomerate. Many caves, large and small, though mostly small, open in the walls of these cliffs, which are not high, measuring nowhere over two hundred feet above the level of the valley. The dwellings are contained in the most spacious of these cavities, which lie about two miles from the outlet of the arroyo. They are so well concealed that, along the banks of the stream, it is easy to pass by without seeing them.

The point which we make is this, that while the cliff-dwellings differ from the cavate lodges in many respects yet they are in the strongest contrast with the European caves while they belong to the same age with the lake-dwellings and the towers and mounds, and show about the same style of architecture, and exhibit the same grade of advancement and prove the position which was taken at the outset, that the cliff-dwellers marked one extreme of social progress and the cave-dwellers or troglodytes of Europe marked the other, and the whole series of prehistoric structures and relics may be embraced between them.



CLIFF FORTRESS CALLED MONTEZUMA CASTLE.

From Popular Science Monthly, October, 1890.

1

THE STORY OF THE SERPENT AND TREE.

BY W. H. WARD.

Introduction and Notes by the Editor.

Those who in their childhood were accustomed to read the scriptures, or to hear bible stories in their homes, will remember very vividly the one which relates to the "serpent and the tree." It always seems strange that the serpent could talk, and that it was represented to be a human being capable of climbing a tree. The explanation of this feature of the story has never been given, and many are at a loss even at a mature age to understand it. There is, however, a common doctrine which maintains that there is a great supernatural being who is an enemy to the Creator, and who delights in tempting every human creature, and that he assumed the serpent form when he tempted the first pair. The doctrine is almost identical with the Persian doctrine of dualism, which is to the effect that there are two eternal principles, one good and the other evil, and that they are and will be in conflict. This has led some to ascribe the story to a late date, as late as the days of Zoroaster, about 600 B. C. Recent discoveries, however, have shown that there was a belief in a contest between the Creator and an evil spirit which prevailed long before the time of the Persian empire, even before the time of the Assyrian monarchy, and is one of the earliest conceptions which have been handed down by tradition. As proof of this, ancient myths have been cited, myths which seem to have embodied the story in a mythologic form, and which show that whatever the origin of the story of the serpent and the tree it was a story which prevailed in the very infancy of the human race. As recorded in the scriptures it seems like a myth, yet it is not a myth, but rather a tradition which perpetuates one of those universal beliefs which prevailed among all oriental nations and filtered through various channels until they became the common inheritance of all mankind. The imagery differs with different nationalities and yet the idea is the same. We must consider this tradition as one of the legacies which has come down to us from the far east and the ancient times, and has become world-wide. It is not always the case that the serpent is in the tree, or that he talks to the woman, or appears as the tempter, yet many of the elements of the story as given in the scriptures are contained in these myths and traditions, and especially that one which represents an antagonism between a monster dragon who often assumes the form of a serpent, sometimes the form of a four-footed,

winged creature and whose mission is to work evil. There is no tradition or myth that is more wide-spread than the one that embodies this belief.

As further proof we may refer to the seals which have been discovered, some of which are very ancient, belonging to the ancient Accadian empire dating perhaps 4000 B. C.; others belong to the period of 2500 B. C. and still others as late as the reign of Assurnazirbal—900 B. C. These seals contained many figures of four-footed creatures with claws and wings, which seem to be followed by a king with horns upon his head and a bow and arrow in his hand. In one case the king is seated in a four-wheeled vehicle and has a whip in his hand. The beast always has the mouth open and is represented as vomiting fire or shooting out a forked tongue and so has been called a dragon. The seals remind us of the Babylonian story of the conflict between Marduk the Sun god and Tiamat the storm god, the personification of the watery abyss, others remind us of the story of Isdubar and the lion, and the conflict between the bull and the lion from which possibly the figures on the British seal namely the Unicorn and the lion are derived and also the story of St. George and the Dragon. The figures have been interpreted as referring to the conflict between the nature powers which is the common theme in the mythology of all the eastern nations including the Hindoo, Chinese, Phœnicians as well as Assyrians and Chaldeans.

The king is the personification of the sun, the monster or dragon the personification of the storm, the darkness and the abyss. The female figure is the personification of rain, the trident is a symbol for lightning, and the whole scene a representation of the conflict between the nature powers.

The question has arisen whether any of the seals refer to the story of the garden of Eden and the "Serpent and the Tree." Before we decide that question we shall need to examine the seals, analyze their different parts, perhaps separate those which have the serpent from those which have the dragon.

There is quite a diversity in the seals. They belong to different periods and nations and represent different conceptions, but the most ancient are the most suggestive of the scripture story. In some of the seals we find the figure of a serpent, or if not a serpent, a dragon, also the figure of the sun, the moon, the six stars or Pleiades. In several of them there are seated figures, male and female, with the serpent either between the human figures or behind the human figure, but always erect as if standing on its tail. In several of them there is the figure of the tree standing between the two figures. In one seal there is a serpent which reminds us of the feather-headed serpent so common in America. The eye in the serpent's head is very similar to the eye which is used as an Aztec symbol and the curved tongue similar to the serpent's

fang of the Maya tables. This seal contains the figure of the crescent, the six stars, and a human form chasing the serpent, but another human figure is on its knees and one perhaps a priest standing between two trees.

A description of these seals has been given by Dr. W. H. Ward and published in the *Semitic Journal of Theology* with cuts. The cuts have been kindly loaned to us and we reproduce the article as it shows the resemblance between the Asiatic and the American conception of the serpent and the dragon, and also shows the contrast between the scripture and Pagan story. Dr. Ward says :

"The composite monster in Assyrian art usually called the dragon is a quadruped with the head and forepaws of a lion, a body covered with scaly feathers, two wings, and the hind legs and feet of an eagle. The purpose evidently is to represent a destructive spirit, whether an evil wind, or pestilence, or general agent of disorder. When appearing in conflict with a deity it was recognized by George Smith (*Chaldean Genesis*, ed. A. H. Sayce, pp. 62, 114) as representing Tiamat in conflict with Merodach, the divine demigurge who reduces to submission the spirit of primeval chaos and evil, and creates out of it a cosmos. This identification of the dragon with Tiamat has been generally accepted,



FIG. 1.—Figure of Bel and Dragon, after *Chaldean Genesis*, opp. p. 62.

notwithstanding that in the more carefully drawn Assyrian representations the dragon is clearly masculine, while Tiamea was feminine. In the very instance given as above by George Smith, taken from Layard's *Monuments of Nineveh*, Second series, Pl V., the serpent-headed phallus is sharply drawn. This bas relief (*fig. 1*) is from Nimroud, and probably of the date of Assurnazirbal, nearly 900 B. C.

The oldest known representation of the dragon is on a shell seal cylinder belonging to the Metropolitan Museum (*fig. 2*), 3509 to 4000 B. C. The dragon is harnessed to a four-wheeled chariot in which is seated the god, whom we may perhaps call the elder Bel of Nippur, hardly the younger Bel Merodach, holding the reins with one hand and brandishing a whip in the other. Between the wings of the dragon stands a naked goddess, whom we may perhaps recognize as Aruru, probably a form of Ishtar, who, according to one form of the creation story, was associated with Bel in the creation of the human race, holding a sheaf of thunderbolts in each hand. A worshipper stands before a peculiarly archaic form of al'ar, and pours a libation through the spout of a vase. Out of the open mouth of the dragon there

emerges what might be a stream, but probably is meant to suggest the forked tongue of a serpent; cf. the serpent phallus of the Nimroud figure. The lightnings held by the goddess correspond to the double trident held by Merodach in fig. 1, and the single trident so often held by one of the gods.

Another archaic Babylonian cylinder (of dark-green serpen-



FIG. 2.—Metropolitan Museum, 201.

tine, "jasper") belonging to the British Museum has a single design (fig. 3). The god himself stands between the wings of the dragon, who is represented in the same way, with what might be streams issuing from his mouth as if vomiting, but rather representing a forked tongue. The god holds over his shoulder a whip and a club, perhaps an ax, while the other hand carries a carved cimeter weapon derived from a serpent, or more likely a cord attached to the dragon's mouth. This would identify him with the god often conventionally represented on later Babylonian cylinders as holding a bull or dragon by a cord, in one case with a distinct ring through its nose. Before the dragon is a goddess,



FIG. 3.—British Museum, N. 1070.

not nude, with arms outstretched, entirely enveloped in streams of water. Under her is a bull, being stabbed in the shoulder by a kneeling, bearded hero, naked except for a cord about his waist. Behind him is a stream of water poured out of a vase from the

sky. Behind the entire scene is a star in a crescent, a human figure, and a line of inscription.

We have seen in fig. 2 a goddess standing over the dragon. A later hematite cylinder of perhaps 2000-2500 B. C. shows the flounced goddess holding the lightning trident and seated on the



FIG. 4.—British Museum, 54-4-1-4.

dragon, out of whose mouth issues a stream, or forked tongue. The other figures are of the conventional type of the period. The seated goddess (fig. 4) is probably the same as appears *en face* in Rich's fine old cylinder, the *Ishtar supra leonem* (see Menant, *Glyptique Orientale*, I., p. 163).

In fig. 5, a hematite cylinder of about the same period as fig. 4, *Ishtar en face*, in a flounced dress,* holding up a caduceus with two serpents, stands on two dragons. In the usual conventional forms of this goddess she stands *en face* with one bare leg advanced and resting on a single small dragon or lion.

Of the representations of the dragon thus far considered,



FIG. 5.—British Museum, 69.

coming from the period of the old Babylonian empire, any one might be feminine, the sex not being indicated, although indicated in fig. 3 in a bull of the same size.

Another form in which a dragon appears in early Babylonian

*A goddess is represented, in Babylonian art, as dressed in a long goat's-hair garment, often flounced, with a divine head-dress, and with both hands lifted in an attitude of respect. A human worshipper generally lifts but one hand.—ED.

art is standing rampant, with wings lifted together behind, and with mouth open over the head of a kneeling man or attacking an animal. In fig. 6 the male sex seems to be indicated, although this is seldom the case. The cylinders of this type are usually thick hematites, the oldest of this material going back perhaps to



FIG. 6.—British Museum (no number).

3000 B. C., and the design is a somewhat frequent one. Here the dragon plainly does not represent Tiamat, overcome and slain by Merodach, or subdued by some other god or goddess, but a destructive demon of pestilence or tornado.

It is not until the Assyrian period that we find a representation of the conflict between the god Merodach and the dragon. The dragon is not now harnessed, trodden on and quite subdued; but with its head facing the god and receiving the fatal blow it turns to flee, as appears in fig. 1, which is from the wall of a small temple. Other instances appear on the Assyrian seals. The best known example is that identified as Bel and the Dragon by George Smith (*Chaldean Genesis*, ed. Sayce, p. 114). This cylinder of chalcedony is the same as had long been figured in Layard's *Culte de Mithra*, Pl. XXXVII., fig. 4, and now belongs to the Metropolitan Museum (fig. 7). As there are several ex-

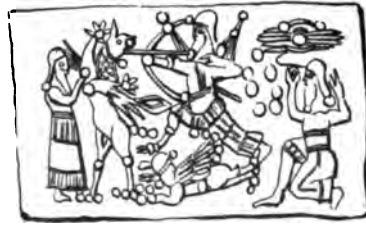


FIG. 7.—Metropolitan Museum, 403.

amples of this general design, they may properly be grouped together before giving a general description.

Another (fig. 8) is figured in Lajard's *Culte de Mithra*, Pl. XXXIII., fig. 4. It is a small cylinder, of "chlorite terreuse,"

with border lines above and below. The engraved design, contains some scattered cuneiform characters and is distinctly Assyrian, or at least northern. The same design appears again on a fine cylinder of "saphirine chalcedony" (*fig. 9*), belonging to Mr. R. I. Williams, of Utica, described by J. Menant in the *American*



FIG. 8.—Lajard, *Culte de Mithra*, Pl. XXXIII., fig. 4.

Journal of Archaeology, II., p. 256, who thinks he finds in the inscription evidence that it is a royal cylinder, although he does not read the name of any king. The cylinder may be of a date 700 or 800 B. C. Yet another probably older cylinder is a large serpentine (*fig. 10*) belonging to the Metropolitan Museum. It is in unusually fine preservation, considering its soft material, and is perhaps the most complete representation of the scene that is known. One will observe that the arrow with which the god shoots the dragon is a trident, and so a thunderbolt. Also both the larger and the smaller dragon have a large protruding tongue divided, or forked, at the end

A broken cylinder figured in the *Collection De Clercq*, Pl. XXXI., fig. 331, is peculiar in that the dragon fleeing from the



FIG. 9.—*Am. Jour. of Arch.*, Vol. II., Pl. V., fig. 8.

pursuing deity who is shooting an arrow at him, is met in front by another deity, or the same deity represented a second time, who thrusts a double thunderbolt in the dragon's face (*fig. 11*). This latter deity has his body surrounded by the circle of rays,

the common form of the Assyrian deity whom Lenormant called Adar, and who may be rather Marduk. Yet another broken cylinder (*fig. 12*), Lajard, XXV. 5, shows Merodach shooting the dragon with a trident arrow. These are all the cylinders I know of in which this scene of the conflict between Merodach



FIG. 10.—Metropolitan Museum, 402.

and the dragon appears, the latter taking the original form of the composite monster.

Let us now analyze the scene. We first observe that this scene is not old Babylonian, but Assyrian or Mesopotamian. We cannot yet distinguish what in art or mythology had its origin in Assyrian and what in Nahrina or Mitanni. The latter were brought into closer relations with Egypt, Phœnicia, and the Hittite kingdom, and we may suspect that what was new in Assyrian art or mythology was more likely to be borrowed from the districts to the west of Assyria than to be original. It may well be that the old Babylonian legend of the fight between Marduk and the dragon was quite recast in the north. There is evidence that such was the case. Indeed it took different forms in Babylonia itself. According to the familiar literary version Merodach is the champion of the gods. At the bidding of Ea he accomplished



FIG. 11.—De Clercq, Pl. XXXI., 331.

what no other god dared to attempt. But this is, as Morris Jastrow, Jr., shows in *The American Journal of Theology*, I, April, p. 469, a recension of the story which must be later than the establishment of the dynasty of Hammurabi at Babylon, and

the consequent enthroning of Merodach as the chief god. Indeed, an older form of the myth, given in one of the creation tablets, makes the elder Bel of Nippur the deity who subdued Tiamat. It is by no means clear that he killed her, for the cylinders older



FIG. 12.—Lajard, XXV. 5.

than Hammurabi, as in figs. 2 and 3, represent the dragon as not slain but subdued, harnessed in a chariot and driven by Bel, while the goddess stands on his back and wields the thunderbolt; or the god stands on the back of the dragon. This dragon may well be Tiamat, as there is no indication of the male sex.

When we come to examine the Assyrian cylinders we find that the dragon is male. This appears in figs. 1. 9. 19. The same idea of the sex of the chaos-monster appears in the Hebrew stories. While *תהום* is either feminine or masculine, the word has lost its relation to Tiamat; and the other words by which the spirit of disorder is designated, as *רהב* and *תנין*, and masculine.



FIG. 13 —The Sir Henry Peek Cylinder.

We are therefore not surprised to find that in the Persian mythology, which derived the figure, if not the substance of its dualism from this conflict of Bel and the dragon, the evil serpent Ahri-man, the foe of Ahura-mazda, is masculine. In this matter the

Assyrian and the Persian agree with the Hebrew notion, but not with the Babylonian. We may also gather that the Hebrew version of the dragon story, whether *רִדְדָה* or *תַּנִּיךְ*, or the serpent of Genesis does not find its origin in the Babylonian of the times of Hammurabi and Abraham—otherwise they would have been feminine—but in Assyria or Mesopotamia.

Another point which requires notice in the Assyrian representation of this conflict is the second smaller dragon, which always appears. It is of precisely the same form as the larger one, and is also masculine. Whether this smaller dragon, which rushes along on its four feet like a dog, is to be considered as accompanying Merodach or the male Tiamat it is not easy to decide. If the latter he may be connected with Kingu, the husband of Tiamat; if the former, which is perhaps more probable, judging from his position, he may represent the evil winds that assisted Merodach, which would have been represented under the same form as Tiamat; and yet "the helpers of Rahab" who "stoop



FIG. 14. —The Williams Cylinder.

under" God, in Job 9:11, may be here represented. On a cylinder in the Collection of Sir Henry Peek, described by T. G. Pinches, we seem to see the smaller dragon attacking the larger.

We may further observe that while the Assyrian representation of this conflict does not tell us whether the dragon was finally slain, or merely subdued and enslaved as in the oldest Babylonian form, yet one would naturally gather that he was killed; as was Tiamat in the Babylonian story which we have in the version which Assurbanipal brought from the southern kingdom; and as we know that the Hebrews of the time of the captivity understood it, Isa. 51:9, "Art not thou he that cut Rahab in pieces, that pierced the dragon?" Cf. Job 26:12,13.

We have seen that in passing from Babylonia to Assyria the myth of Bel, whether the older or the younger, and the dragon was considerably modified. It was further changed until it was quite confused with another mythological story, that of Gilgamesh the mighty hunter. But there was one variation that did not affect the essential meaning of the myth, and that we find on a

single small hermetic cylinder brought to this country many years ago by Dr. Williams, a missionary in Mardin and Mosul, and presumably obtained in that region. It now belongs to his nephew, Mr. F. Wells Williams, of New Haven, and was first figured and described by me in the *Bibliotheca Sacra*, 1881, p. 226, and copied by Sayce into his edition of Smith's *Chaldean Genesis*, p. 90. The scene (*fig. 14*) is precisely the same as in those already mentioned, except for the very significant substitution of a serpent for the dragon. The god Merodach is the same; he is swiftly pursuing the fleeing serpent, and attacking it with a weapon like a spear, or, rather, a sword with a curved handle that is thrust into the serpent's mouth. Under the body of the god and between his legs is an indeterminate object which takes the place of the smaller dragon.



FIG. 15.—W.H. Ward's Sassanian Seal with Serpent.

The usual accessories fill the remaining space. This cylinder is convincing proof that in the region where it was made a form of the myth was familiar in which the spirit of evil was conceived as a serpent, as it is in Genesis, and also in Job 26:13, "His hand has pierced the swift serpent"; and Isa. 27:1, "In that day Yahve with his sore and great and strong sword shall punish Leviathan, the swift serpent, and Leviathan, the crooked serpent, and he shall slay the dragon that is in the sea." If the Book of Job was composed in one of the lands about Palestine, for example in the land of Ur, we have an indication of the country, where, apart from Palestine, the serpent entered into the myth. I very much doubt



FIG. 16.—Metropolitan Museum, 410.

whether this cylinder with Merodach and the serpent is Assyrian. It seems to me more probable that it came from further west, possibly from Job's own land. It is not Babylonian, doubtfully Assyrian. It may be that it was an Egyptian influence that controlled the substitution of the serpent for the dragon, as the

piercing of the serpent Apepi by the god Horus was frequently represented in Egyptian religious art, and it may thus be that the Persian Ahriman combines the form of the Egyptian Apepi with the idea of the Babylonian Tiamat. An hitherto unpublished Sassanian seal belonging to me, of perhaps 300 or 400 A. D., shows how the idea of the conflict was retained, although the serpent, at this late time, had acquired seven heads, and we have here not so much an echo of the seven-headed beast of Rev 13:1 as an anticipation of St. George's dragon (*fig. 15*).

The later Assyrian, Hittite, Persian and other cylinders exhibit great license in the representation of both Merodach and the dragon. The latter very frequently becomes a sphinx, plainly



FIG. 17.—Cylinder with W. H. Ward.

an Egyptian perversion. It also becomes an ostrich, as in a series of cylinders of which the one best known is that of an Armenian king. Another is given in *fig. 16*, belonging to the Metropolitan Museum. In this case the smaller dragon has also become an ostrich, although in these altered forms it was usually quite omitted. As an illustration how the scene came to be confused with that of Gilgamesh we may observe *fig. 17*, a fine cylinder in my own collection, on which, while Merodach retains his characteristic form and weapon, he holds up a bull by the hind leg, quite in the *role* of Gilgamesh.

It would be interesting to trace the stages of tradition by which the dragon under its original form when adopted by the Hittites passed into an eagle with the head of a lion, and afterwards with two lions' heads, and later two eagles' heads, and how this emblem of the Satanic principle was adapted as a heraldic device by the Seljukian Turks, and how this two-headed eagle is now honored as their emblem by the Austrians; but this would be aside from our topic, which is the fight between Bel and the dragon. It is sufficient to have traced this most ancient of all

pictorial representations of the eternal struggle between good and evil from the very cradle of human civilization and religion, in Eridu and Nippur, to Assyria and the Genesis serpent of Eden, to the dualistic theology of the Avestas, and finally to the great victory of the English St. George over the dragon.

Before concluding this paper attention should be called to an apparently very archaic cylinder (*fig. 18*) given by M. Heuzey in the *Revue Archeologique*, 1895, p. 307. Although M. Heuzey is an authority of the first rank, I should desire that this cylinder, and several others given for the first time in this paper, the present location of which is not stated, might be further studied. The cylinder is a remarkable one, and appears to show us the



FIG. 18.—L. Heuzey, *Rev. Arch.*, 1895, 307.

same details as appear in fig. 2 and 3. The design is too admirable and fresh to make it seem possible that it should be a forgery, and the suspicious points about it may be due to the recutting which dealers too often attempt with worn cylinders."

This description of the seals given by Dr. Ward is admirable but it will be noticed that he makes no attempt to interpret the seals. It would seem from all that we can learn that the seals can be divided into three classes, as follows: first, a class which represents the serpent in the natural form sometimes with a tree, sometimes without; second, a class which contains the figure of a warrior armed with a bow and arrow or other weapons, but no female figure; third, a class which represents the divinity as a king attended by a queen and having the symbols of power above, sometimes associated with a human pair which may be supposed to represent historical personages. Such is the division which is suggested by the study of the cuts themselves without regard to the history of the "finds," a division which indicates the order of time and the progress of art and civilization. If this is correct then it follows that the story of the "Serpent and Tree" preceded the conception of the contest of the nature powers. This thought has occurred

to many of the writers on oriental subjects, among them Dr. A. H. Sayce, George Smith and Mr. Boscawen, some of whom have held that the dragon meant the same thing as the serpent, others have held that it, as well as the serpent, represented one of the nature powers, the absence of the tree showing that it could not be identified with the scripture story. This is virtually the position taken by Prof. Davis who seems to hold that the story of the "Serpent and Tree" was entirely different, from the myth about Tiamat, the dragon, and Marduk, the king god, as the one belonged to scripture, but the other belonged to pagan mythology.* He says:

"The thought came to Geo. Smith as it has come to every reader of Babylonian tradition since, that there may be some connection between the dragon of the Chaldean creation story and the serpent of the Genesis. The formidable Tiamat commonly called a dragon because terrible by nature and represented as a composite monster, was the disturber of order and the enemy of the gods. The serpent of the book of Genesis sought to undo the work of God by seducing man to rebel against his maker. The idea of some connection between these two foes of good is alluring, but on reflection it does not seem probable. The accounts of the conflict of Marduk with Tiamat and of the temptation of man are not counterparts. They relate to entirely different events. So much is clear. But although the events are entirely different the same evil being might be a prominent participant in both. The two narratives might relate to different episodes in the career of the same incarnate agent of evil.

The art and literature of Babylonia, at present available, are equally at variance with the theory that Tiamat's conflict with Marduk and the serpent's seduction of the woman are but different episodes in the career of the same evil being. A cylinder seal, given above, has been cited to the contrary, as affording the connecting link between the tempter serpent and the monster Tiamat. The seal was discovered by Dr. William Hayes Ward in the possession of the late Hon. S. Wells Williams. "It represents," to quote Dr. Ward's detailed explanation, "a fleeing serpent, with its head turned back towards a deity who is swiftly pursuing it, and who smites it with a weapon. The other figures in the seal have no relation to the pursuit of the serpent by the god. They are put in by the engraver simply to fill up the space, although all separately significant no doubt. The small kneeling figure probably represents the owner of the seal. The two other figures behind the god represent no recognizable deities, and may be meant for priests. Filling up the smaller spaces are the female emblem Kteis six planets or perhaps stars of the Pleiades, and two smaller branches, which it would be hazardous to regard as representing the two trees

*The presence of the tree as well as the serpent is peculiar to the scripture story but the tree is often omitted in the Persian, though it is found in the Egyptian and Greek myth and even in the American symbols. — Ed.

of the garden of Eden." (*Bibliotheca Sacra* 1881, p. 224. To understand the significance of this seal it must be compared with others. For this purpose Dr. Ward selects a cylinder made familiar by George Smith. "It will be seen," says Dr. Ward, "that this is very much like Dr. Williams' cylinder. The dragon which corresponds with the serpent in the latter is in the attitude of retreat, and turns its head back towards its pursuer, who is running rapidly and who shoots it with an arrow. The figure of the priest is the same (reversed) and of the kneeling owner, as also the representation of the minor accessories, the stars and the Kteis, although the winged circle, emblem of the supreme power, replaces the crescent of the moon-god. There is also a figure of a winged monster represented under the feet of Bel, for which there was not room on Dr. Williams' cylinder, but where an indistinct line or two indicates that it was in the mind of the engraver. It was very likely an attendant of the dragon, or possibly of Bel. . . . We may then regard this new seal of Dr. Williams as certainly representing the conflict of Bel and the dragon, the dragon being figured as a serpent."

Dr. Ward may be followed thus far, but no farther. No intermediate story is supplied by the engraving on the seal, as he presently supposes.

The scene depicted on the cylinder does not exhibit a tradition in which "the demiurge Bel-Merodach attacks and punishes the serpent by bruising its head." It has no likeness to the narrative in Genesis, in which the serpent is not slain by God, as pictured on the seal, but is condemned to go on its belly, eat dust, and be bruised on the head by the seed of the woman. There is no reason to believe that the cylinder tells any other story than the traditional conflict of Marduk and Tiamat."

Mr. Boscawen seems to agree with Prof. Davis. He says: *—"The serpent or more properly speaking, different kinds of serpents, held a considerable place in the religions of antiquity. The role of the serpent varies considerably in different systems; in some it appears as divine, protective, and benign. To this class belongs the Serpent of Ea—"the wise one," which is an emblem of life and wisdom. In other systems on the contrary, it is the emblem of all that is evil and dark. In all religions we meet with the hostile night serpent and dragon—the wicked principle, which is the emblem of death and darkness. In the mythology of Babylonia this wicked serpent is represented by the great dragon, Tiamat, which for myriads of years had coiled round the earth like a serpent around its egg, and which as I have already stated, is represented on the monuments as a serpent-limbed woman. The connection between the serpent and night, and consequently, with the long first

*The Bible and the Monuments, p. 95

night which preceded the work of creation, is proved by the monuments, for two great mystic serpents are mentioned in the inscriptions. This is another evidence of the characteristic simplicity of the Hebrew account and its freedom from polytheistic elements which strangely enough keep in touch with the thoughts of surrounding nations. All the poetic features of the great nature war—one of the most universal of nature myths—are found in the exploits of Ahuramazda, Indra, Vishnu in the East, and of Apollo, Heracles, Kadmos, Odin and Sigurd in the West. The nature war was an everlasting war, day by day, and evening by evening it was commenced and ended. The serpent slain, the serpent again victorious, wounding the heel of the victor Merodach, the "protector of good men," the son of Ea, and the earth-mother, Davkina. In the myth, one of the chief opponents of Merodach, the son of Ea, is the great serpent with seven heads and seven tails. This hydra like conception was but the demon of the week, the hebdominal serpent. In the Babylonian mythology, Merodach was the Lord of Light, the opponent of darkness. Light was synonymous with goodness, and so the Lord of Light became "the good one," as the Serpent of Darkness became the Evil One. In so poetic a school of religious thought as that of Babylonia, it can hardly be expected that so rich a theme as this would escape a copious elaboration, and consequently the second, third and fourth tablets of the Creation series are devoted to the Creation of Light, the War in Heaven, the defeat and curse of the serpent, and what is more important still, valuable traces of the Legend of the Fall. The important point is, have we any trace of the story of the Fall in the Babylonian inscription? and, if so, is it in any way associated with death? The first indication is afforded by the seal figured in Mr. George Smith's Chaldean Genesis in which a scene in many ways resembling the Fall is represented. A man and woman are seated on either side of a tree, from whose branches hang rich bunches of fruit, and behind the woman a serpent is rearing up. The garden of the gods is represented upon several seals, notably one in the Hague Museum, and some in the Cesnola collection.

Mr. Boscawen has published what he believes to be the Chaldean tradition of the fall of man, contained in one of the Creation tablets. He says: "It is clearly to be seen, that here, in a somewhat mutilated form, we have a most important tradition. It has the important element common to the Hebrew Tradition, of the anger of the god, here the god Sar, the god of 'the hosts of heaven,' the 'Lord of Hosts,' who punishes with death; the eating of the fruit of the asnan tree, the sin; and the appointment of Merodach to be the redeemer of those who had sinned. There are several points of special interest in this text. In the first place the asnan tree is most remarkable. It is a word which means double parallel, and evidently explains the reason why the sacred tree on the Assyrian monuments is represented

with two stalks ; and also I think explains the confusion between the two trees in the Hebrew Genesis, the tree of life and the tree of knowledge of good and evil. . . . Still more important is the word at the end of the last line but one, itellu 'they exalted themselves,' when we consider it in connection with the expression in the Bible 'Behold man is become as one of us to know good and evil.' I now come to the most important point of all, and one fortunately on which there can be no doubt on the ground of mutilation of text 'To Merodach their redeemer he appointed the destiny.' Here the expression admits of no other translation, it occurs in many inscriptions with the meaning of 'restorer of satisfaction' as in the case of obtaining satisfaction for war or rebellion. . . . We have therefore in this a clear indication of the Merodach according to the Babylonian teaching. We must remember also that in the great tablet of the War in Heaven, it is Merodach who slays the serpent and crushes the brain of the creature—bruising his head. I venture therefore, with every confidence to say that in this little but priceless fragment we have clear indications that a story of the fall, very closely resembling in detail that of Genesis !!! was current in Babylonia at an early period."

It may therefore be concluded that there are in the Babylonian records distinct traces of "The Story of the Serpent and Fall in the Garden."

THE HOLY LAND PISGAH AND MOUNT HOR.

BY THE EDITOR.

The recent visit of Dr. Bliss to this country has awakened new interest in the Exploration of the Holy Land. Dr. Bliss is connected with the "Palestine Exploration Fund" of which Prof. T. F. Wright has been the secretary and representative in this country and the publications of which are kept at the office of the ANTIQUARIAN. The last statement is very interesting as it contains an article on the prospect from Pisgah and the view which was gained by Moses ; also an article by Prof. Theophilus G. Pinches on the site of the ancient city of Kalneh, and the report of a visit by Chas. Hornstein, to Petra and Mt. Hor.

The point brought up in the article about Pisgah is whether the Mediterranean Sea could be seen from Pisgah and if not what was the meaning of the word "Hinder Sea." The relief map which has been kindly loaned to us by the Central School Supply House, of Chicago, will show that the range of mountains west of the Dead Sea and the Jordan, as well as the

distance would prevent Moses from seeing the Mediterranean and the "Hinder Sea" must have meant something else. The following is the explanation given by Mr. W. F. Birch. "Failure has apparently dogged all attempts to find a point on the east side of the Jordan or Dead Sea from which all the tracts or spots named in the Scripture may be seen in their respective positions. The panorama seen by Moses is thus spoken of in Deut. XXXIV, 1-3: "And Moses went up from the steppes of Moab unto Mount Nebo, to the top (or head) of Pisgah, that is fronting Jericho. And Jehovah showed him all the land, (even) Gilead, as far as Cana, and all Naphtali, and the land of Ephraim and Manasseh, and all the land of Judah as far as the hinder sea, and the south, and around to, (even) to the plain of Jericho, the city of Palm-trees, as far as Zoar." Accordingly, Prof. Driver observes: (Deuteronomy" p. 419). "The panorama is superb, through the terms in Deuteronomy XXXIV, 1-3, are hyperbolical, and must be taken as including points filled in by the imagination as well as those actually visible to the eye." To me it seems all but certain that the Biblical description is literally true; that imagination has no place in it, otherwise snowy Hermon or Lebanon, which Moses entreated to see (Deut. 111, 25), would surely have followed the mention of Gilead.

I hope a friend for a day will leave Jerusalem in the cold hurry down to the mouth of the Kidron, take the steamer eight and one-half miles across the Dead Sea, and climb the five and one-half miles of the slopes of Moab to Talat el Benat. If this be done on the first day of the last month, (the anniversary of the death of Moses according to Josephus) he will probably, weather permitting, be able with a telescope to distinguish all the tracts and spots named above as being seen by Moses from the mountain of Nebo. It is essential to know beforehand the positions of the objects to be looked for. In the above list seekers have been baffled by the three limits given—Dan, the Hinder Sea, and Zoar. Josephus places Zoar at the southern end of the Dead Sea ["Wars, IV, 8, 4], Dan at the springs of the lesser Jordan at Tell el Hady, while recent writers identify the Hinder Sea with the Mediterranean. It is evident that Moses could not from Pisgah see as far as the Mediterranean, Pisgah was on the east side of the Dead Sea. Moses when he began his survey looked eastward and the sea was behind him. He turned to the left and traced the scene and the horizon at last sees the land of Judah and ends with the Hinder Sea which is the Dead Sea.

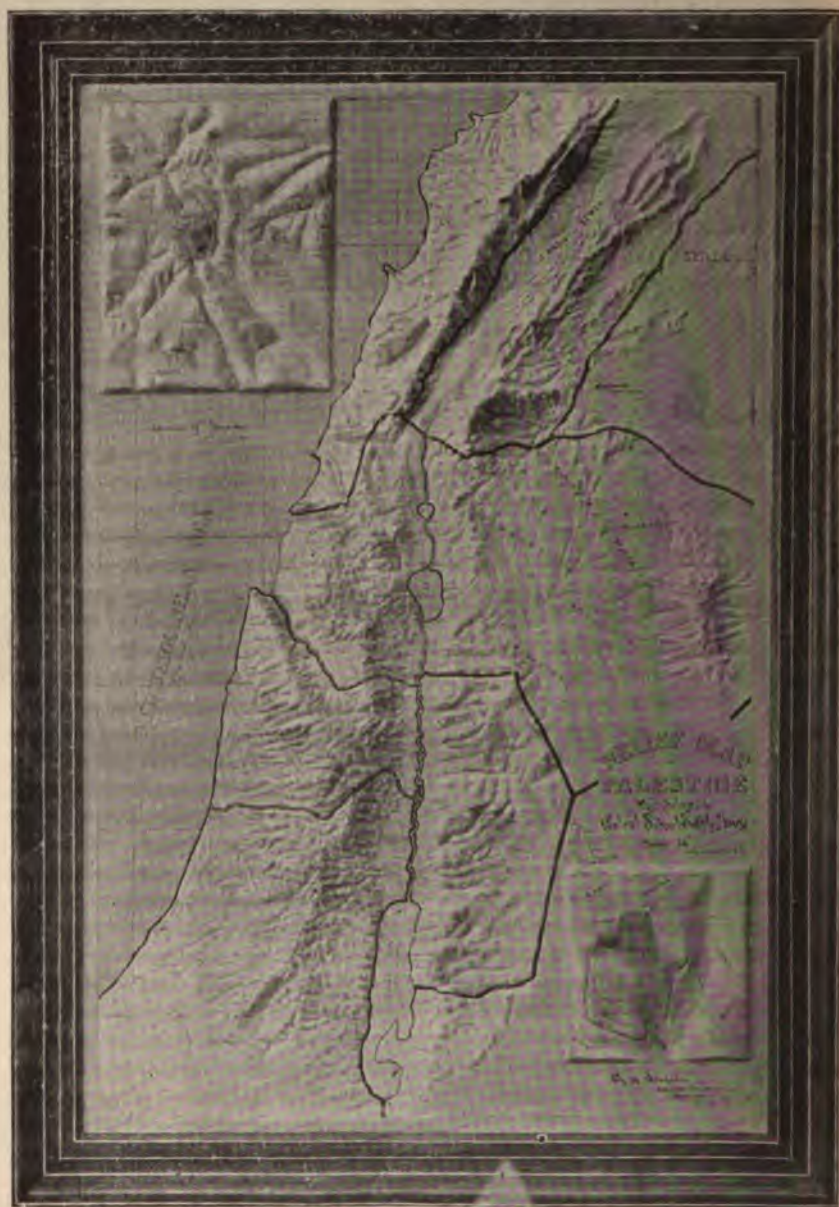
The map illustrates the point. There is nothing to mark on it the location of Pisgah but it will be seen that the mountains on the west would prevent Moses from seeing the Mediterranean, though the Dead Sea would be in plain view. The valley of Esdraelon could, however, be distinguished from some of these points and possibly the peaks of Carmel. Mt. Tabor

would be prominent and the Horns of Hatten, as well as the Mountain of Lebanon.

The visit to Petra by Mr. C. A. Hornstein has brought out some new facts with reference to old localities, for it embraced the region about Mt. Hor as well as the ruins of Petra, for the first dates back in history to the times of Moses and Aaron perhaps 1450 years B. C. The architecture of Petra bears the impress of the palmy days of Roman grandeur, perhaps 2000 years later.

The best part of the article is that it is illustrated by a series of plates, one of which shows the wall of the castle, another the tower at Kerak, a third the monastery at Petra, and a fourth the summit of Mount Hor. The following is the description: "Mount Hor is composed of sandstone of different shades. It has two peaks. On the north east peak is situated the tomb of Aaron. We could see the white dome and little square building enclosing the tomb. It was a great disappointment not to be able to ascend. The plate shows the two peaks with all their weather-worn but rugged lines and terraces with a gorge or deep water-courses below them. It is the nearest and best view of this famous mountain ever presented.

The monastery of Petra is better known, as engravings of it are common. The following is the description: "Facing the south-west and cut out of the solid white lime-stone rock is a large temple, called the Deir or Monastery. It is much larger than any of the other temples, though not nearly so magnificent as the Kasneh with regard to coloring and design. It is 151 ft. long by 142 ft. high. The facade is ornamented with columns and niches but no figures whatever. There may at one time have been images or statues in the niches, but these have entirely disappeared. On the top of the dome over the middle niche is an urn like the one surmounting the Kasneh. The interior consists of one large room, 36 ft. 9 in. by 39 ft. 8 in. At the north end is a recess, for an altar, with two steps on either side leading up to it; it is 14 ft. wide by 8 ft. deep, and raised 4 ft. above the level of the floor. We noticed two holes on each side of the recess in the angles of the walls, above the steps, such as are made to tie animals to. It is possible that these were used to secure the animals brought for sacrifice. The doorway is 30 ft. high and 17 ft. wide. Another item of interest is a table of typical Siloam letters taken from earlier gems, later gems, the Siloam inscription and coins. The statement contains a fine tribute to Mr. C. W. M. Van de Velde who in the year 1851 undertook unaided and at his own cost the task of producing a reliable map of the "Holy Land" achieving by indomitable industry and perseverance such success that those engaged in later years by the "Palestine Exploration Fund" frankly admitted the complete exactitude of all that he had done. The French government in honor of his



RELIEF MAP OF PALESTINE.

From the Central School Supply House.

merit made him a Chevalier of the Legion of Honor. The following books are announced: Dr. Bliss' account of his three years work at Jerusalem, under the title of "Excavations at Jerusalem, 1894 and 1897." A new work by Lieut. Col. Conder called the "Hittites and their Language." Also a book on the "Latin Kingdom of Jerusalem" describing the condition of Palestine under the Crusaders. Col. Conder is also the author of a book entitled, "Hand-book to the Bible."

EGYPTOLOGICAL NOTES.

BY WILLIAM C. WINSLOW, PH. D., SC. D.

DR. PETRIE AT DENDERAH.—This eminent excavator returned to England the last of April after three months of careful exploration at the site of the cemetery of Denderah. His associates were Mr. Mace of University College, London, Mr. Davis, skilled as an artist, and Mr. MacIvor, whose special duty was to take scientific measurements of many hundreds of skulls and skeletons.

Prof. Petrie found the whole tract full of cemeteries, mostly of the old empire and the eighteenth dynasty. All important tombs were carefully examined, and a vast amount of data obtained. I can only summarize some of his results or "finds" in chronological order.

Fourth Dynasty—A fine stele of Abu Suten. Its translation will be awaited with interest.

Sixth Dynasty—Three great mastabas (tomb edifices) containing the tombs of officials under Pepi I and II, with carved stone panels and false door steles. One of the edifices had a long brick tunnel like a pyramid passage, with a semi-circular arch, the oldest specimen of the kind. The chambers, or vaults, were lined with stone, sculptured and painted, offerings and bands of inscriptions.

Sixth to Seventh Dynasties—A very valuable and interesting religious text was found by Prof. Petrie. He considers it the most important since the pyramid texts. He made out some 15,000 signs after ten days of studying and copying. This great inscription was upon a colossal sarcophagus of a Prince named Beb. Is he the Beba who was governor of the city of Pepi of the sixth dynasty?

Eleventh Dynasty—This dark period is represented by a beautiful double statuette of finest finish, of a man named Men-hutep and his wife. He has lost his head; her statue is perfect. A thousand pound stele of a man named Khnum-ei-du

has a thousand hieroglyphs. I regard these tokens of this dynasty as peculiarly valuable.

Twelfth Dynasty—Probably—A large stone heap covered the remains of a woman with an armlet of garnet and silver beads, two fine scarabs, etc. In the tombs were small stone vases and an exquisite durite shell, a bronze battle-axe of open work with a kneeling figure in it.

Nineteenth Dynasty—Among the spolia of this historic period are bronze vessels for the temple, such as an incense-burner, libation vases, luted vases, bowls, etc.

The Plotemaic cemetery contained tombs of but one type. For example, the stairway descends to a chamber in three sides of which are recesses, each holding from six to eight mummies. On one body eighty armlets were found. Labels of limestone in demotic were attached to some of the bodies, and all mummies had their heads turned inward with precision, so that study of the tags may yet reveal the words "this side up with care." If my readers think there was little humor in a people so devoted to the mortal and moribund side of life, let them open a piece of a papyrus recently found at Tonnah, in which cats and rats are made to exchange places and play attendance. A cat holds up a mirror for her mistress to study the set of her fine clothes. A barber cat shaves a dandy rat. A cat nurse tenderly carries an infant rat in her arms. And so on.

The Roman remains—a large assortment of fine glass mosaics, a collection of coins, including 242 of Diocletian to Constantine, and of over 2000 of Constantius to Arcadius. These objects were found in animal-catacombs, sometimes hundreds of feet in length and from eight to ten in width.

It would seem that a round \$5,000 had been expended by Petrie; but \$1,750 actually covers his total out put in situ.

IDENTIFICATION OF MENE'S TOMB—Dr. Borchardt, of the German School of Archæology at Cairo, makes a plausible and reasonable claim that the tomb at Negada claimed as that of the first king of historical Egypt is genuine. The Horus—name occurs in all the inscribed objects of this tomb, and which may be translated "The Warrior." In a sort of cartouche, beneath the title 'Lord of Vulture' and Serpent-Crown in a sign which means Mn. No other king could be thus designated but Menes. Now if Borchardt is right, Mn confirms Petrie's theory that the Hammamat road from the Red Sea to the Nile was the path by which the dynastic civilization entered Egypt. For Menes would wish to be buried opposite this road, where he greeted the Nile, rather than at Memphis.

The Egyptian Research Account is conducted by Dr. Petrie independently of the Egypt Exploration Fund and principally for instructing students. Its record of discovery is brilliant. Mr. Quibell, now Petrie's deputy, has been making valuable discov-

eries at the site of the temple of Nekhan, and had already found portions of a bronze statue of Pepi I. of finest workmanship. Only an age skilled in that art could have produced such a superior bronze statue, much larger than life size.

BRANCHES of the Fund, or, more properly, local societies are fast forming in America. Chicago, Philadelphia, Detroit and now New York and New Haven have established branches affiliated directly with the Fund in London. Much more money should be raised through those local committees known personally in their localities. With their local efforts supplementing the central office (in Boston) which represents the American Branch, the income for exploration should be doubled. A generous rivalry and a desire to obtain antiquities for the local museums should bring it about.

EDITORIAL.

THE LITERARY AND ANTIQUARIAN WORKS OF GLADSTONE.

The prestige of a great name has been given to the study of archæology; no less a name than that of the late premier of England the Hon. William E. Gladstone. This is significant for the study of classics has to a degree fallen into disrepute, and seems likely to be neglected.

The commendations of the American press have been numerous since the death of Gladstone. The majority of them have been in reference to his political career and his statesmanship. A few have spoken of his literary and archæological tastes. We are happy to quote from these and give a list of his literary works. The Literary World says: "It is the venerableness of Mr. Gladstone that expands all other aspects of him, until he stands before the imagination as a sort of mythical reality, if such a paradox be thinkable. The year of his birth was the year Napoleon Bonaparte divorced Josephine. He was nearly three years old—old enough to listen to the story of the exploit with childish wonder—when the British "Guerriere" fell a prey to the American "Constitution" off the straits of Belle Isle. He was a boy of nearly six when the battle of Waterloo was fought. He was in his tenth year when Victoria was born. So far as years are concerned he might have known Keats, Shelley and Byron. He was a contemporary for twenty years of Sir Humphrey Davy, for eigh-

teen years of Beethoven, for seventeen years of John Adams and Thomas Jefferson, for eleven years of George III. He was born in the same year with Tennyson, Darwin, Mendelssohn, Oliver Wendell Holmes, Mrs. Browning and Edgar A. Poe, of which distinguished group he was the sole survivor. The literary work of Mr. Gladstone, however, most interests the antiquarian scholar.

His favorite book was Homer and for a long time he was the best authority on it. The following titles with their dates will show how persistently this man of large affairs, and great political responsibilities continued his Homeric studies. *Studies on Homer and the Homeric Age*, 1858. *Ancient Greece*, 1865; *Juventus Mundi; or Gods and Men in the Homeric Age in Greece*, 1869. *Homer*, D. Appleton & Co., 1878. *Landmarks of Homeric Study*, Macmillan, 1890. *A Translation of the Odes of Horace*, Macmillan, 1894.

The political career of the "Grand Old Man" has been more variable but the following words written by an English Clergyman* in this country are true :

"The whole course of Mr. Gladstone's life was one continual development, beginning in the environment and under the training of old English toryism, and moving ever forward toward the loftiest liberalism and the unswerving support of great principles of righteousness and liberty as they appealed to his judgment and above all to his conscience. It may be agreed that Macauley's estimate of the Gladstone of 1830-40 was a fair picture of the man up to that time; but in the very matter of religious intolerance which came to him as a heritage of birth and training, and which was the subject under review by Macauley, Gladstone proved his growth and loyalty to conscience by disestablishing the Irish church when convinced that it was not the church of the Irish people.

Of course the right or wrong side of a question depends upon the point of view, but the world credits Gladstone with being on the right side of many issues, notably :

1. Condemning the opium war against China.
2. Assisting in the repeal of the corn laws, so that the people could obtain untaxed bread.
3. Successfully agitating against the Neapolitan oppression and outrages on political prisoners.
4. Co-operating with Cavour in reconstructing and establishing the kingdom of Italy.
5. Various measures of reform of the political franchise up to the point of (practically) universal suffrage in Great Britain and Ireland.
6. Commendation of the enfranchisement of woman.
7. Defense of the right to parliamentary honors without religious tests.

All these are outside his great triumphs of financial policy, the Irish land act, and his endeavor to remove a cancer which had for years eaten into the vitals of Ireland.

We might add, however, that it was by his influence chiefly

*Rev. Mr. Burgess, in the Chicago Record.

that the great precedent of arbitration was established in the matter of the Alabama claims ; that he who in his early days voted as a true tory against the ballot was afterwards foremost in its defense, and that it was his voice which twenty years ago aroused the moral sense of all England and half Europe against the atrocities in Bulgaria, compelling the "unspeakable Turk" to desist. Again, as recently as two years ago, he almost accomplished a similar result from the retirement of his sick chamber.

The most praiseworthy feature in his character was that he was true to his religious convictions and wrote and spoke as he believed and had the most remarkable courage. His contest



GLADSTONE.

with Huxley over the question of the order of the Creation and its harmony with the days mentioned in Genesis I, has been referred to in this journal. The Editor of the AMERICAN ANTIQUARIAN was invited to take part in the discussion by the Secretary of the Victoria Institute and it was proposed to make a special pamphlet of the article which should be prepared for general circulation. This was considered at the time a great compliment but modesty compelled him to decline. Since then some of the best literary work has been accomplished as the following list of religious articles and books will show : Church Principles Considered in their results, 1841; Remarks on Recent Commercial Legislation, 1845; Letters on the State Per-

secutions of the Neapolitan Government, 1851; *On Ecce Homo*, 1868; *Ritualism*, in the *Contemporary Review*, October, 1874; *The Vatican Decrees*, 1864; *Rome and the Latest Fashions in Religion*, 1875; *Vaticanism; An Answer to Replies and Reprints*, 1875; *Bulgarian Horrors and Questions of the East*, 1876; *The Evangelistic Movement: Its Parentage, Progress and Home*, *British Quarterly Review*, 1879; *The Might of Right*, Lathrop, 1880; *The Impregnable Rock of Holy Scripture*, Wattles, 1890; *The Works of Joseph Butler, Lord Bishop of Durham*, Edited, 2 vols., Macmillan, 1896; *Studies, Subsidiary to the Works of Bishop Butler*, Macmillan, 1896.

There is a lesson in all this. There has been a tendency in this country for young men and collectors of all ages to rush into the field and to neglect the study of books altogether.



HAWARDEN CASTLE.

In fact some of those who are working in the field have sneered at the "arm chair" archæologist, not realizing that study which is often conducted in silence has greater effect upon the culture and general character than discovery. The explorations of Schliemann in Troy and Mykenæ has awakened a great interest and his name has been a watchword for explorers in this country as well as in the eastern lands. Schliemann was at first a student of Homer and it was his interest in Homer that led him to his success in exploring. There is a building in England which will bear looking at with quiet thoughtfulness. It is the castle in which Gladstone conducted his so-called arm-chair studies, namely Hawarden Castle. In the castle is a room in which are two tables, one for the study of Homer, the other for correspondence and the affairs of statesmen. There is an in-

spiration in the study of the cut as there has been an inspiration to such as have been familiar with the books and essays which were written on that particular table. Both tables suggest the activities of the man; one his activity as a statesman, and the other as a student.

As the "Providence Journal" says: "We are inclined to attribute the apparent inconsistencies of this remarkable man to what we may call his intellectual restlessness. His work in parliament would constitute a career in itself, but think what he has done besides. He flung himself precipitately into most of the controversies of his day; he plunged into theology, into criticism, into history, into economics; on any subject whatever the most insignificant of correspondence could 'draw' him; his willingness to give an opinion long ago became jest. This intellectual restlessness then was in our opinion the source of his merits and defects; and by it the inconsistencies become explicable. He jumped so quickly from one conclusion to another, always with the full conviction of the absolute certainty of his mental processes that the possibility of today became the necessity of tomorrow.

INDIAN PLACE NAMES.

A discussion has arisen among the members of the Ethnological Bureau as to whether the name Ashtabula was derived from the Indian or European language.

The same question was also propounded by the Editor of AMERICAN ANTIQUARIAN, when he was writing the history of Ashtabula County, to Mr. Henry Clay Trumbull, who was the best authority at that time, in 1877.

He answered in substance, "that in its present form it was neither." At least there was no Algonquin name that could be identified with it. He did not think it was an Iroquois name. Still there were a great many names given to towns and rivers which were taken from the "sound" and were corruptions of Indian names though the Indian could not be recognized in the names when written out." There are names in Northern Ohio which were taken from Indians Chiefs such as Conneaut, which might be taken from the spelling for French, Asthabula might be French and Indian combined, "Ashta," "Bula." Other names are purely Indian, such as "Pymatuning," "Kanhawa," or "Kanawha," "Hockhocking," "Piuqa," "Miami," "Piankasha." These names have a general resemblance of sound. They all abound in aspirates and labials.

Other names, further west, abound in Ks and Klicks such as Kinnicks, others with gutturals, such as "Muscogee. The difference in the pronunciations here, seem to be as great as among the nations in Europe such as the Welsh, German, French and English. Any one who studies the map or gazetteer will

easily recognize by the sound, alone, the names which were given by the English and American settlers, and distinguish them from Spanish and French names and generally from the Indian.

It is not then altogether a matter of linguistic analysis or knowledge, though this is the last court of resort. There are many names about which tradition would furnish much information provided we could get at it. The local historians have a mission in this line. It may require close study and careful research, but the place names are important and should be studied now even though war is monopolizing attention.

SEPARATION OF THE SEXES IN ANCIENT VILLAGES

A novel feature of the Pueblo life is that the men and boys dwell apart from the women and the children. The kiva or estufa is their place of assembly and sleeping place. This is an ancient custom, but no one knows how it was introduced, or its origin or history. Some have thought that it was because the cliff-dwellers who were fugitives and constantly haunted by fierce enemies were obliged to place the women and children in the houses built high up in the rocks, while they themselves remained in the valleys cultivating the soil, and for convenience sake they built their towers and estufas near the fields. Another explanation is furnished by a custom which existed among the people who were in the neolithic age, and who were perhaps inhabitants of the north at the time that the climate was warm perhaps before the glacial age, and who migrated southward. This theory has been advanced by Mr. Hewitt a writer in the Westminster Review and author of "The Prehistoric Races of Asia." Mr. Hewitt maintains that it was the people of the north who were the founders of the permanent village life and who first introduced the measurements of time and the calendar. It was measured first by observing the Pleiades. The northern people retained a remembrance of the first birth in the warm polar lands of the miocene age when the sun was invisible for a great part of the year, as is evident from the great reverence for the constellation of the "Great Bear" which was the creed of the men of the Neanderthal race in the Pleistocene age. These people took with them the village organization led by the Pleiades. They call the pole-star the king star of the heavens and liken it to the pole which supports the roof of the huts. They worshiped Orion and the Pleiades; they made the house-mother the

priestess of the household; they consecrated the fire to the hearth goddess, the Greek Hestia, the Roman Vesta. According to their custom no man could marry and become the father of a child of his own village but must be invited by the women of another village to the seasonal dances, where the village children were begotten and were brought up by the mothers but the village men were to the mothers only as brethren.

THE FIRST UNIT OF TIME.

The first unit of time was the typical handful of days represented by four fingers and thumb, and the week became the five days. This is the earliest week of which we have any record, though the six days of the Pleiades became known early. After the moon was worshipped the sacred week, among the sun-worshippers became lengthened to seven days; the twenty-eight days of revolution divided into four; the story of its introduction is told in the Greek mythology of Hermes.

UNIVERSAL BELIEFS.

There comes a time when religions which make an important factor of the supernatural, find themselves in conflict with the progress of knowledge, and especially with a growing belief in a rational order of the universe. Symbolism then offers them a way of safety which they have more than once taken advantage of to keep pace with their times. If we take people in an inferior degree of religious development, we find them having fetiches—that is beings and objects arbitrarily invested with super human faculties; the idols or fetiches carved into resemblance of a man or an animal; but we sometimes discover symbols among them, which imply also the desire to represent the abstract by the concrete. There will be nothing to hinder our studying with great care the rites and traditions of their heritage, we only will make of them symbols of the truths common to all nations and races, and will consequently be able to treat them as we do the rites of certain churches, mere local forms equally legitimate in all countries.

The universal beliefs are after all, as Cicero has shown in his "Tusculan Questions" the exponent of certain self-evident truths,

and the foundations of all religion. If the Emperor Maximilian could say that "there was nothing in man which was foreign to himself," we, surely, who enjoy the light of what we call the revealed truths can look upon all with the same charity. We may pity those who have so long struggled with ignorance and oppression, and have had their minds obscured, but we are not to despise them, on one hand, nor are we to exalt them on the other. If there are those who would bring down the beliefs which are embodied in the scriptures to a level with the blind gropings of pagans, and make primitive man a teacher of the educated, the savage better than the civilized, we need not be disturbed. When the mind opens to the notion of an abstract or invisible god it, can preserve its balance. Finally when we come to conceive a Supreme God, of whom the old divinities are simply shadows the ancient figurative representations of the nature powers, with few of the qualities or attributes of the superior or the supreme being into which the divine word resolves itself, a religious condition may be reached in which all cults may be studied and yet be a source of inspiration. There are certain truths which are too palpable to escape the ignorant and superstitious. These are: first, the existence of a supreme being; second, the inevitable contest between good and evil; third, the ultimate triumph of good over evil; fourth, the immortality of the soul, or at least, the existence hereafter; fifth, the doctrine of resurrection; sixth, the anticipation of some one who should act as deliverer or redeemer. He may be represented as a nature power; or as a person who suffers the attacks of an enemy, still he is regarded as a friend of men. His work may be confined to the tribe or to the nation, or to the sect; still there is generally the same character ascribed to him. If these are found in the bible of all nations there is certainly no reason why we should throw away our own bible or seek to put it on a level with other books. The savage would say "We were so taught by the ancients." We should certainly be as reverent as the savage. Among the universal truths which seem to have been taught by nature as well as transmitted by man the most important is that which relates to the resurrection. This has been generally regarded as purely Christian and exclusively taught in the scriptures; but any one who has become familiar with the science of comparative mythology will be convinced that this is an error. There are parallel lines in which the doctrine has been transmitted, and it sometimes seems as if there were many places where it has sprung up spontaneously. Even those who were never taught have come to the conception unaided, and have had a dim apprehension which could not be dismissed. This is a hopeful side of human nature and may be set off against the dark side which shows man so full of fear and apprehension of evil. Many writers have shown that

the doctrine of the resurrection was taught by the ancient Egyptians and Greeks and embodied in the story of Isis and Osiris, who were the personifications of the nature powers and of the seasons. The eleusinian mysteries were founded upon the universal truth and owed their power to the fact that it was taught in all their symbols and ceremonies.

The Egyptian "Book of the Dead" is replete with the doctrine and is worthy of study on this account.

Thus the story of the destruction of Osiris by his wicked brother Set, the Greek Typhon and the scattering of his members symbolized the waters of the Nile as scattered by the waves of the sea, but Isis who symbolized the land recovered and buried the members. Horus a young man left his hiding place in Buto in order to avenge the death of his father. Set was vanquished and acknowledged the new monarch Horus, who now assumed the crown, became the king of men, and Osiris ruled over the kingdom of the dead as king of eternity. The members of his divine family have died but their souls live as stars in the sky; that of Horus as Orion; that of Isis as the Dog-Star but the soul of Osiris dwells in the bird Benu, the Phoenix of the Greeks, which was perched on the branches of the sacred tree above the coffin of Osiris, the tree symbolizing the life, in this case, as it did in the palace of Byblos, in which the chest was hidden. Horus took the form of the great sun disk with wings therefore the great sun-disk was placed over all the doors in the temples.

SERPENT EFFIGIES IN THE CITY OF BENIN.

The capital of the kingdom of the same name now in ruins was formerly the religious metropolis of a wide area. The home of a race supposed to have derived its origin from Egypt, it was discovered at the close of the 15th century. The first detailed picture of it was published by the De Bry Bros, in 1600. It has been recently visited and described by C. H. Reed and O. A. Dalton. Some facts were brought out that are as strange as those made known by the late J. W. Bent, in Mashonaland, So. Africa, which seem to give foundation to the report that the houses had an atrium and impluvium after the Roman fashion, and almost confirms Burton's conjecture that this style of architecture may have actually been derived from the Roman colonies in North Africa. There were compounds not far from the palace surrounded by mud walls, and at one end stood carved ivory tusks supported at the base by human heads of cast metal.

On the altars were maces for killing victims; other tusks supposed to represent kings or gods were arranged on each side of the central door with the points turned to the wall. Tusks were found in fetish houses in several towns, as also were cast metal and wooden heads, life sized wooden birds, and sticks surmounted by a carved hand with pointing index. The hand and arm are frequently represented on metal objects and are either cast or chiseled.

Some of the rooms had transverse beams covered with metal plates ornamented with divers figures. This peculiarity had also been observed by earlier visitors, for it is mentioned by Dapper, who speaks of pillars cased in metal, "on which are engraved their victories, and which are always kept very bright."

The palace itself had several points of interest. It seems to have had in the centre of one side a pyramidal tower 30 or 40 ft. high, which is remarked by several travellers, and caused Captain Fawckner to compare the whole building to a British shot factory. From the top of his factory was fixed a cast metal snake, the head of which came down to the ground, while the body was as thick as that of a man. Lieutenant King was told in 1820 that this snake had been there for centuries, and this may be true, for Van Nyendael evidently saw more than one snake cast in metal on different parts of the roof. It may be noticed that where the snake occurs it is usually represented head downwards. When the city was entered this year, a similar snake was also observed on the roof of the palaver house.

The carvings on the ivory tusks also contained serpents. One of these represents the God of Warriors. From his head issue two crocodiles, each devouring a fish; a third crocodile comes down between his legs, and has in its jaw (?) or sheep, which is itself browsing upon a plant. Across his body the figure holds a long two headed snake, with a frog in each of its mouths. Snakes devouring frogs are found upon cast heads and masks. In the centre of the plate and on the right and left are two tortoises.—*Journal of the Anthropological Institute.*

HAWARDEN CASTLE

Both in ancient and modern history Hawarden is of interest. In 1264 the castle was the scene of the memorable conference between Simon de Montford and Lleyelyn, prince of North Wales, in which a compact of mutual support was agreed upon, and consequently was but poorly kept, for in 1281 Llewelyn turned traitor, and with David led the Welsh in a night attack

on the castle, which they took, and in all probability burnt and left partly a ruin. The castle was some years later repaired by Robert de Montalt, and to him is the building or the keep, or donjon of the castle, attributed. The keep is circular, and is 61 feet in diameter. The base of the wall is about 15 feet thick, while it tapers to about 2 feet at the rampart line, divided into two stories. The upper story was the state apartment of the castle, while the lower one was used as a store room. Adjoining the state apartment is the chapel, entered through a small doorway, with a pointed head. There is a small window between the chapel and the adjoining window recess, through which the consecration of the host could be seen.

After the Norman conquest Hawarden was included in the grant of land given to Hugh Lupus, Earl of Chester, and in 1337 it passed into the hands of the Earl of Salisbury, and, reverting to the crown, was given to the Duke of Clarence, Henry IV.'s second son, and in 1454 it came into the possession of Sir Thomas Stanley, afterward Lord Stanley, and for 200 years Hawarden remained in this family, but in 1653 it was seized upon and sold to Chief Justice Glynne. At the restoration an effort was made to recover Hawarden for the Stanley family, and a debate on the question took place in the house of lords; but Hawarden remained in the possession of the Glynne family until the death of the last baronet (1874), when the lordship of the manor, by a family arrangement, passed to Mr. Gladstone's eldest son. It is thought that a fortified camp existed on the site of the ancient castle prior to the Norman conquest. The exact date of the castle is unknown, but it seems almost certain that it was erected during the reign of Henry III. and probably added to in the beginning of the reign of Edward I.

The park comprises about 250 acres and is divided by a ravine, which passes the ancient castle.—*The Chicago Record*.

CREATION RECORDS.*

DISCOVERED IN ALL LANDS.

A strange thing connected with the advance of archæology is that it has brought to light so many records which have to do with the creation, and the division of the earth and the sky;

*Creation Records, discovered in Egypt, [Studies in the Book of the Dead] by George St. Clair, Member and Secretary of the Biblical Archæological Society. Member of the Anthropological Institute; and Ten Years' Lecturer for the Palestine Exploration Fund; Author of "Buried Cities and Bible Countries." London, David Nutt, 270-271, Strand, 1898.

the revolution of the sun and moon and heavenly bodies; the existence of the north pole; and imply a knowledge of the solstices; the equinoxes, and other facts. These astronomical records are found, not in one land, but in all, and date back to the prehistoric age. They are the inheritance of the historic races, but distributed and transmitted from one to another, until they now form a universal system. The key to the geography of the heavens has been furnished so that we now know pretty clearly the origin of the constellations and understand why there should be so many analogies and resemblances. The feasts which were celebrated among the ancient races of the east resemble those which are still being celebrated among the western tribes of America; at least, they are celebrated at the same time, and are regulated by the same clock, and generally follow the same order. The surroundings were very different as were the employments and social conditions, but strangely the religious notions and customs were very similar. The resemblances are not accidental but must be due to transmission.

Several books have lately appeared which illustrate these points and give force to this conclusion. One of these entitled "Creation Records" was written by George St. Clair. Another entitled "Prehistoric Races in Asia," written by Mr. Hewett who has also written a number of articles for the "Westminster Review." A third entitled the "Migration of Symbols" prepared by Goblet d'Alviella.

A fourth book, prepared by M. Soldi, a French savant, who has spent twenty years in the study of the ancient symbols, and has adopted the theory that these embody in themselves a sacred language, which was based upon the principles found in nature, and consists in a close imitation of the forms of nature. All of these authors maintain that there was a transmission of thought and knowledge from a great primitive culture centre and that the symbols, pictographs, calendars and constellations which formerly were known in the far east were distributed until they reached the remotest regions of Europe and the North of Asia and even America. Three or four thousand years which elapsed between the beginning of history in the east and in America having given an abundance of time for the full distribution of these symbols in this country. The first book touches more upon the "creation records" among the Egyptians, but shows the analogies common between them and those found in India, Assyria and Babylonia. He says:

"The key to the Egyptian myths is to be sought in the history of the Egyptian calendar; and we shall best understand that calendar and its changes by first glancing at our own."

The early attempts to measure time are spoken of. It was quite early discerned that the heavens appeared to rotate on an

invisible axis of which the north pole is the pivot. The "Great Bear" and the "Lesser Bear" were used as a clock hand. Pythagoras calls the two bears the two hands of the genetrix, the divinity of the pole who generated all things by the constant rotation. Homer called the "Great Bear," "Arctos" from which comes our word Arctic, and refers to it as never plunging into Ocean's baths. The "Great Bear" in Egypt was called the Jackal. A temple at Denderah has a circular Zodiac on its ceiling and there we find the constellation of the Jackal located at the pole. The Jackal constellation serves as the hand of the stellar clock. Mr. Hewett maintains that the Polar Bear and the North Star, and the revolution of the stars about the pole, were known long before the days of history, when the climate at the far north was warm; and that this sign or symbol was transmitted to all the tribes and nations, and along with the Pleiades became the regulator of the seasons. This author holds that astronomy was their basis of Egyptian myths. The priests were astronomers and the endeavor was to make the calendar accord with the divine order, and regulated the sacrifices and holy festivals according to the position of the heavenly bodies. This position Norman Lockyer also takes. In Maspero's opinion the obelisk, so common in Egypt, was originally a Menhir, which corresponds to the monolith known as Friar's Heel at Stonehenge in Great Britain which was a gnomon as the rays of the sun at the time of the solstices passed over this and struck into the altar stone, so the temple at the Karnak was built in such a manner that the sun-light at the summer solstice entered the temple and penetrated along the axis to the sanctuary. These were the first temples. The four quarters or cardinal points were symbolized in these temples. There were four Egyptian goddesses who supported the heavens of the Zodiac at the north, south, east and west. There were four houses which represented the celestial spaces in which the presiding divinities dwelt; four gods to the elements and their wives; four constellations, the Bull, the Lion, the Scorpion and the Water-Man. The sacred bulls of Egypt were types of the sun. The Hindus and Persians associated the sign of the bull with the origin of time. This was after the introduction of domestic animals. "There is scarcely a corner of Asia," Sir Wm. Wm. Drummond says, where we do not find traces of adoration offered to the sun under the form of a bull." From the four quarters we pass to the twelve signs of the Zodiac. The planisphere of the temple of Dendera shows four gods supporting the heavens and eight other gods in pairs, making twelve representing the twelve months. The twelve columns of the temple were dedicated, each to a particular month of the year. The Egyptian Ra is the god of the circle and the twelve months are his limbs. Ra's conflict with

the serpent Apepi is symbolized. The under-world journey of Ra was represented as a voyage, but there was an earlier conception of it as a progress through the bowels of the earth, by an underground path which corresponds exactly with that held by certain American tribes. The rising sun was supposed to be a new fire, lighted every morning. He was pictured as a beetle issuing from the ground and rising on wings, but there is another conception of him that he passed through the ground as a worm leaving a hollow track. The hieroglyphic sign for the earth is a hollow tube. There are several pictures at Dendera that represent the sun god in the form of a worm rising out of the Lotus at Dawn. The "Book of the Dead" described the underground journey of Ra. There is a ceremony of passing through the twelve gates corresponding to the division of the nether-world itself.

LITERARY NOTES.

ANTIQUITIES OF HAVANA.

It will be interesting at this time of war to remember some facts of history. The remains of Columbus are supposed to be still at Havana. This has been disputed but the box in which they were preserved was opened a few years ago and the bones identified. This rests in the chancel of the cathedral of Havana and a tablet on the wall recalls the fact. There is a chapel which commemorates the first mass of Columbus. Tradition says that it is built on the spot where Columbus first heard mass on the Island. This is not true for Columbus died thirteen years before Havana was founded. Not far from the chapel is De Soto's fort declared to have been built by the discoverer of the Mississippi river to protect the few inhabitants against the buccaneers who used to lie in wait for the Spanish vessels when they stopped at Cuba on their homeward voyage from Mexico. The fort is a small antiquated structure. Its stones once yellow, have grown green and gray with age, and are surmounted by a story, itself of no recent date, roofed in to be used as a barracks. It is approached through a Moorish gateway situated opposite the middle of the plaza, which the Fort fronts. The latter is partly hidden by the *Intendencia*, or Treasury, a large building of two stories with a dark, heavy, stone arcade in front, and having upon one corner a square, balustered, tower-like addition. Before the Fort and *Intendencia* is a statue of one of the Ferdinands.—The Midland Monthly for May, 1898.

Education for June, 1898, has an article on some characteristics of Greek sculpture by Henry C. Pearsons, of Alleghany, Pa., illustrated. It is a happy thing that the journal which has high rank as an educator should furnish information on Greek statuary for it is probable that a large majority of the teachers in the public schools of our country, know nothing about the statue. If they are so fortunate as to see them, or plaster casts of them,

they look at them as they would at Greek letters knowing nothing of their history and little of the sculptors who make them.

The American Journal of Philosophy has an article on the Ayer papyrus by Mr. Edward J. Goodspeed, illustrated by a half-tone plate. The fragment contains about thirty-five lines. It is in clear uncial, interspersed with geometrical figures, and probably dates about 200 A. D. or possibly in the reigns of Vespasian and Trajan. It was found by Mr. Ayer, of Chicago, in a small shop in Cairo. The value of the papyrus is that it gives the form of the Greek letters and the symbols used by mathematicians and throws light on the condition of mathematics at that time.

The fiftieth anniversary of the Essex Institute has been celebrated at Salem. Gifts from W. W. Story, the Sculptor, consisting of the cradle in which he was rocked, and of the original plaster casts of his statues, and also the gift of a large amount of antique furniture, portraits and old china from George R. Curwin, of Salem, commemorated the event in a substantial way. The collection of books in the library of the Institute is very large, numbering only the sixth in size of all the libraries in Massachusetts and in fact of New England.

"Popular Science Monthly" for June has an article by George A. Dorsey of the "Field Columbian Museum," on the "Hidas and Tlingit Villages" with several cuts which exhibit the totem poles, the carved grave posts, the tattooing and other symbols carved in wood which are so common now, but which are rapidly disappearing and will all be gone before many years.

BOOK REVIEWS.

COMPLETE GEOGRAPHY. By Alex. Everett Frye. Author of "Child and Nature," "Brooks and Basins," "Primary Geography," etc., Boston, U. S. A. and London. Ginn & Co., publishers, 1896. 184 pages and 20 pages of maps.

A MANUAL OF GEOGRAPHY. A hand-book for the use of Teachers and Pupils. Designed to be used as a study of Politico-Relief Maps. By James Howard Gore, B. S., Ph. D., Professor of Geodesy, Columbian University. Sometime Civilian Expert. Published by the Central School Supply House, Chicago.

In no class of books has more progress and improvement been made than in just that which is represented by these two beautiful school geographies. In fact geography itself is no longer the dry, dull study which it once was; nor does it consist in the mere memorizing of a lot of names or tedious hunting up of certain other names in a net-work of lines drawn across the map. In modern geography the earth is depicted just as it is. The relief-maps show the mountains and the rivers, the valleys and the plains. The cuts exhibit the natural features and show what are the characteristics of each country and parts of the continent. America is discov-

ered for the first time by many a child and perhaps with as much surprise as even Columbus felt. It is a positive pleasure for anyone to look at the pictures and see what wonderful works of nature there are on this continent as well as in Europe and Asia—Chimborazo, the Himalayas, the Loess Beds of China, Fusiyama of Japan, the North Cape and the mountains of Switzerland are not more attractive than are the Alleghanies, Mount Rainier, Mount Hood, and the mountains of Central and South America. There are perhaps more ruins in Europe, but every child should know after he has studied these books that there are many ruins in this country and some of them far more ancient than those known to history, though not as much is said as might be of the wonderful cliff-dwellings of the west, nor even the ancient cities of the south-west. The Alhambra, the Chinese Tea-Houses, the Thibetan homes, the Patagonian Villages, and castles on the Rhine are set off against the Indian camps; whereas, there should have been placed along with them such famous American Cities as were described by the early explorers and discoverers; at least it seems so to us, though we look through antiquarian eyes. We admire the cattle on the prairies, the men in the cotton-fields, the great ships on the sea, the mines and the oil wells, the slate quarries, the iron-works, the lumber camps, the capitol, the extensive wheat-fields, the river valleys, the pampas and the prairies, and are pleased to see the forms of the wild animals and birds so artistically presented and look at the faces of the Indians which are so accurately represented that the tribe can be recognized as quickly as though we saw them in their native homes. It is a positive pleasure to renew the scenes and sights which have been gained by much weary travelling. It is like taking a long journey around the world and we grow more enthusiastic as we proceed. The American parents as well as children owe a debt of gratitude to the publishers of these books. They are worthy of all praise and should be introduced freely into the schools.

THE STUDENT'S DICTIONARY OF ANGLO SAXON. By Henry Sweet, M. A., Ph. D., L. L. D. Corresponding Member of the Munich Academy of Sciences. New York: The Macmillan Co., 1897.

An abridgement to the large Anglo Saxon Dictionary seemed to be desirable. Accordingly Dr. Henry Sweet, who is authority on the subject, was asked by the Macmillan Co. to prepare one. The difficulty in the way was the limited number of carelessly written manuscripts, and the fact that Anglo-Saxon Dictionaries contained words which are not Old English but belong to Transition English 1100 to 1200 A. D. or to Middle English. Old English literature consists largely of translations. The result is that many unnatural words appear. The first business of a dictionary is to give the meaning of the words in plain modern English. Quotations are next in importance to definitions. The spellings are, however, the most important of all as there are so many variations. Those who are studying Anglo-Saxon and "Old English" works will find this volume very valuable. The Venerable Bede, the Poem of Beowulf, even the works of Chaucer and Spenser can hardly be read with any satisfaction without it. These works are sometimes published in modern English and the writer's thought can be gained in this way, but the smack of old wine is better than cider just from the press, and so the student of English classics needs to go to the pure fountain undefiled. There are so many books in almost every gentleman's library which need a key that it would seem as if this lexicon would be indispensable. The Saxon language spoken in England may be divided into three dialects, spoken in three epochs, the first lasting 330 years up to the irruption of the Danes, called the British Saxon to which Cædmon & Bede's History belong. The second is Danish Saxon which prevailed from the Danish to the Norman invasion 1066 A. D. At this time the French manners and language were esteemed the most polite accomplishments; even Children at school were forbidden to read in their native language. The third may be styled the Norman Saxon which began about the Norman invasion and continued to the reign of Henry II, about 100 years. These

constitute the ground work for modern English. The roots of our present language strike down into it. The result is that strength and beauty belong to the tree. The sweeping elms sometimes overhadow the shrubs and prevent their growth. So the English language seems likely to spread over the globe, and to overshadow other languages; possibly all will be merged into it in time; first the so-called romance languages, next the Teutonic and all the Aryan tongues; after that the Semitic languages, many of which are already dead and the rest rapidly decaying; last of all the Turanian and those which are called Allo-phylian for want of a better term. The theory that "Volapuk" would take the place of English and other languages has been abandoned. The solution of the problem is that either there must be a polyglot dictionary in many of the large commercial houses, or the English will be spoken and read by all nations. We place the little Anglo-Saxon lexicon alongside of the Century Dictionary and say "Behold what tall oaks from little acorns grow."

WEST FLORIDA AND ITS RELATIONS TO THE HISTORICAL CARTOGRAPHY OF THE UNITED STATES. By Henry E. Chambers. Fellow by-Courtesy of Johns Hopkins University. Sometimes Assistant Professor, Tulane University. Series XVI, No. 5. Johns Hopkins University Studies, in Historical and Political Science. Herbert B. Adams, Editor.

West Florida is a political and territorial entity, belonging to a period which elapsed between the time of Ferdinand De Soto, 1539, and the Louisiana purchase, 1803. The Spaniards were the first occupants though the French explorers, such as La Salle and Louti crossed it in 1682 and Iberville entered it in 1698 with a company of colonists. After the old French war France ceded it to Spain. The eastern boundary was the Chattahoochee River, the western, the Mississippi River. After the Revolution West Florida was an independent state. There was a formal and final transfer of the Floridas to the United States in 1820. All of these facts are brought out by the pamphlet. It is mainly a political view that is presented though a few facts are brought out in reference to the divers populations.

TALES OF TRAIL AND TOWNS. By Bret Harte. Boston and New York: Houghton, Mifflin & Co., 1898. 348 pages, price, \$1.25.

These stories are located partly in Europe and partly on the plains of the great west, or on the great divide. As the result there is a strange mingling of European and American scenes, and a marvellous combination of circumstances; just enough romance about them to make them interesting to the average reader of novels. In one of the stories namely, "The Ancestors of Peter Atherly," the Indian character is depicted. In another called "The Strange Experience of Alkali Dick," the character of a cow-boy is depicted. In a third, viz.: "A Fight on the Divide," the character and appearance of the rough miners is shown. In the fourth "The Youngest Prospector in Calaveras," the story of a child is told who made by accident the discovery of a rich mine. The charm of the book is that it brings each scene very clearly before the mind. The imagination is aroused and the fancy pleased.

TRAIL AND CAMP-FIRE. The Books of the Boone and Crockett Club. Editors, George Bird Grinnell, Theodore Roosevelt. New York: Forest & Stream Publishing Co., 1897. 353 pages. Price \$2.50.

The scenes described in this book are widely scattered; in Labrador, in Africa, on the Little Missouri, in the Adirondacks and in Newfoundland. The authors are as follows: A. P. Low, Lewis S. Thompson, Wm. Lord Smith, George Bird Grinnell, Theodore Roosevelt, Wm. Carey Sanger, Madison Grant, Clay Arthur Pierce. The Editors are George Bird Grinnell and Theodore Roosevelt. The illustrations are mainly of animals. The wounded Harte Beeste, the big Elephant, the Oryx, the Rhinoceros, the Gray Wolf, the Coyote, etc. The book is nicely printed, finely bound

and is a superb specimen of book-making. It will be especially interesting to sportsmen. The frontispiece represents the prince of hunters, P. H. Briston. There is in the volume a plea for the abolition of the practice of driving deer with hounds and for the protection of Yellowstone Park.

A HISTORY OF CHRISTIANITY IN THE APOSTOLIC AGE. By Arthur Cushman McGiffert, Ph. D., D. D., Washburn Prof. of Church History in the Union Theological Seminary. New York: Chas Scribner's Sons, 1897.

It seems to be a crime for a theologian to write up the history of Christianity. Every other religion can be treated in its historical aspect, and the more conversant a person is with the history, the better authority he becomes. Christianity with many is not regarded as having any history. The very perfection of humanity is represented by it; but it must be disconnected from all human growth and progress. The question before the general assembly of the Presbyterian Church, and before the church in general, is whether the corner-stone was placed on a foundation which was already laid, and we are building upon the foundations; or whether it shall be disconnected. The exaltation of the divinity of Christ is to be commended; but the Great Teacher said "Before Abraham I was." The meaning of the Hebrew term "*Yah Veh*" should be understood in all its prophetic bearing, for he is, was, and is to come. If the triads of the ancient Assyrians, and the modern Welsh are sacred, this triad of scripture should be sacred in our eyes. The broadest vision was taken by Christ when he said "I if I be lifted up will draw all men unto me." "The Developing Church" is a title of a chapter in this book, one of the best chapters and the best title. We will all stand or fall, with that banner over us. The disciples of Jesus in Jerusalem thought of themselves as a family, and conversion meant their incorporation into the one household of faith. As the Gospel made its way beyond Palestine the same feeling continued. Christians everywhere were conscious of belonging to one family, and Christ's disciples were brethren wherever they might be. It was one of Paul's chief concern throughout his missionary career to foster this sense of unity among his churches and to make it practical." Dr. McGiffert comes from a noble ancestry and had a godly father, a good mother, and an excellent Christian training. The writer knew him personally as a boy in school, having been a pastor of a church in the same city where his father lived. He has arisen to eminence and is worthy of confidence. The book is manly, courageous, clear and thorough.

PRIMER OF PHILOSOPHY. By Paul Carus. Published by The Open Court Publishing Co., 324 Dearborn St., Chicago, 1896.

The fundamental principle of this philosophy, according to Dr. Paul Carus in that all knowledge, scientific, philosophical and religious is a description of facts. Facts are single and concrete events, while laws are abstract descriptions of qualities of facts that are of a general nature. There are no such things as self-evident principles. Experience is surely too narrow a foundation. This is in accord with the tenets of scientists generally somewhat at variance with the principles of the theologians and such statesmen as Thos. Jefferson who hold that "there are certain self-evident truths." The second principal of the philosophical method is embodied in one word "Monism." "Monism stands upon the principle that all the different truths are but different aspects of one and the same truth." This is not the sense in which most scientists use the term. The author of the book seems to occupy a sort of middle position between the scientist and the theologian and is accordingly hard to understand. It may be that he will establish a system which will be understood by those who read his writings; but generally those who are occupied are more familiar with the thoughts advocated by the opposite extremes than with those held by the author who takes the middle path.



Louis Hennepin



INNER COURT AND SANCTUARY AT EDFU.

(From a Photograph by the Author.)

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THE NUMBER OF INDIAN LANGUAGES IN WASHINGTON.

JAMES WICKERSHAM.

Within the limits of the State of Washington six different Indian languages are spoken, the same languages in grammar yet dissimilar in vocabulary. Within each of these stock areas there are numerous dialects spoken which differ from each other almost as widely as the recognized stocks. In Oregon there are eleven stock languages, in California there are twenty two, while in southern Alaska and British Columbia there are seven others; from Alaska to the southern boundary of California, west of the Rocky Mountains there are now recognized by students forty-one distinct and separate stock languages.

Why are there forty-one separate stock languages along the Pacific beach, occupying so limited an area, and but nineteen others in the much larger area of the continent north of Mexico? Why are there six stock languages in Washington, and but one in the six states of Illinois, Indiana, Ohio, Kentucky, Michigan and West Virginia? Was this region so peculiarly situated that special laws operated here which did not equally govern in other parts of the continent? If so, what law or condition was it that produced such a variety of languages here, and why did it have such a vital force along the Pacific beach from Alaska to Southern California and not equally so in the open interior of the continent? By what processes are new languages formed and what movements of races produce them?

Negative arguments and evidences are often quite as satisfactory and frequently more persuasive than direct testimony. The Eskimo language occupies the entire coast line from the Aleutians to Greenland; it is spoken on the Asiatic coast and formerly reached southward along the Atlantic shore to

Newfoundland. Along this 10,000 miles of Arctic coast line, with many of its families or tribes isolated for unknown centuries, it yet retains its purity and distinct family characteristics. Why should it maintain its purity along this 10,000 mile migration route when the much shorter north Pacific coast line presents forty-one equally clear, separate and distinct types of speech?

The reason for this long continued integrity of the Eskimo has been forcibly stated by Major J. W. Powell, director of the Bureau of Ethnology, in an interesting article in the February Forum, in which he says :

"Thus in all that stretch of country there is but one language. What are the conditions under which this language has been preserved in its integrity and homogeneity? Simply these: The territory occupied by the peoples speaking this language is cut off from the interior by an uninhabitable belt of glacial land, so that the means of communication are to be found mainly on the seaward side. The inhabitants, having been distributed over this enormous belt of coast line from a primitive tribe having one language, have preserved that language through all their vicissitudes and stages of culture; while in the south east, where the Eskimoan territory joins territory occupied by tribes having other tongues, we find mixed languages. The same facts appear on the southern coast of Alaska, in languages differentiated from the main stock by admixture with other languages."

From the persistent purity of the Eskimo tongue during its isolation and wide distribution, he concludes :

"From all these examples we learn this important fact with respect to language, viz: that the differentiation of two or more languages from the same stock, by reason of the separation of the people into tribes and their reorganization into the nation, plays but a minor part, indeed a very minor part, in the multiplication of languages; that the chief factor in differentiation is the compounding of different primordial tongues."

Max Muller recognizes these principles in language formation; he points out that

"The language which the Norwegian refugees brought to Iceland has remained almost the same for seven centuries, whereas on its native soil, and surrounded by local dialects, it has grown into two distinct languages, the Swedish and the Danish."

He asserts, also, that the English language

"Did not spring from the Anglo-Saxon or Wessex only, but from the dialects spoken in every part of Great Britain, distinguished by local peculiarities and modified at different times by the influence of Latin, Danish, Norman and French and other elements."

Historical examples and the highest philosophical authority establish the following laws among those which govern the formation of new languages:

1. An isolated language, unaffected by foreign influences, preserves its purity and original forms.
2. New languages are formed by the process of compounding, by the admixture and compounding of different languages.

Having now learned from the highest authority that new languages are formed by "the compounding of different primor-

dial tongues" let us return to the study of the numerous languages upon the Pacific coast, and again inquire why there is such a luxuriant growth in that quarter. It is not the sea shore alone which produced them, for no such linguistic variety abounds within any similar territory on the Atlantic coast from Greenland to Tierra del Fuego, nor from Mexico to Cape Horn; nor is there any apparent cause within the region occupied by these forty-one languages which explains the multiplicity. And still the fact remains that this small area of the great continent contains two-thirds of all the languages north of Mexico.

Compared with the Eskimo region we have here the opposite condition,—a multiplicity of languages within a limited area. Instead of one language along a migration route of 10,000 miles we have forty-one within a coast area of less than 2,000 miles. Isolation and an absence of foreign influences preserved the one,—compounding and admixture must have produced the many. This is the theory; now what are the facts?

The first and principal fact is the existence of the north Pacific ocean current. The Kura-Siwo or "Black Stream" of the Japanese is formed by the northward flow of the great equatorial current. Leaving the land of the Rising Sun it flows eastward just south of the Aleutian Islands; nearing the shores of America it turns southward and flows like a majestic ocean river full along the front of the states of Washington, Oregon and California; off Lower California it turns westward and becomes again a part of the great northern equatorial current. May not this ocean current, moving in this half world circuit ever since the present geological conditions in the north Pacific have existed, aid us? May it not have transported to this shore the very foreign influences which were required to produce the variety of languages which we find here? Is there not an intimate relationship between this current and the forty-one stock languages along its exact front?

Behrings strait is but forty miles wide, and from the earliest times men and animals, as well as trade, war and migration have gone back and forth over the great channel. When the barbarians of northern Asia entered America at this point they naturally established settlements at the best fishing stations southward along the Pacific beach and up the Yukon. In their isolation, as with the Eskimo, they would speak but one language though spread over as great an extent of territory as the Athapascas.

When the natives of eastern Asia became mariners and embarked upon the Pacific currents they began to suffer from local storms which then as now carried the damaged vessels off shore; rudderless and helpless they often drifted in the Kuro Siwo far to the eastward to be cast upon the coast of America between Queen Charlotte's Islands and the southern boundary of California. When the first of these vessels landed its living

human freight in a camp of primitive American fishermen the formation of a new language had begun. A primordial language of Asia was thus brought into contact with a different tongue coming in by way of Behring strait, and the formation of a new stock by compounding was the natural consequence. Grant a primitive base and a reasonable—even a small—number of east Asian castaways, and have we not an explanation for the existence of the forty-one stock languages dotting the American shore line of the Kuro Siwo?

One example out of many which have occurred within historic days will illustrate the theory. In December, 1833, the natives of the Makah village of Osette, twenty miles south of Cape Flattery, were surprised to see a small vessel drifting a short distance off shore. It was soon cast upon the beach two miles below their village and three men, constituting its living crew, were taken captive by the Indians. It was a Japanese junk which had sailed almost a year previously from a northern port of Japan loaded with pottery, denim cloth, rice, peas and other merchandise. Made rudderless and helpless in a storm it had drifted in the "black stream" for many months; fourteen of the crew died, while three landed safe and sound among the Indians on the Pacific beach of our state. I have received many interesting particulars concerning this wreck from two old Mekah Indians who were half grown boys at the time and who saw the vessel, its contents and its Japanese crew. Sixty-five years after the date of this wreck these old Makahs, neither of whom could speak a word of English, gave me the names of these three captives: E-wa-si, the captain of the junk, Cho-su, a sailor, and Aw-ta, a half grown boy. These names bear the distinct characteristics of the race, and are yet firmly fixed in the memory of the Mekahs. This wreck is described by Wilkes and by the Hudson Bay Co.'s records of that date. The three captives were taken from Cape Flattery in 1834 by the English and returned to their native land.

The Russians lodged a crew of castaways upon Japonski island near Sitka, about 1806; others have been cast upon Queen Charlotte and Vancouver islands, and upon the coasts of Washington, Oregon and California. An irregular yet constant stream of new language material from eastern Asia has been cast into these isolated Pacific coast communities ever since the East Asian has been a mariner—for more than twenty centuries.

By this forced and accidental contact between the languages of Asia and the fishing villages along our coast that condition would be brought about which Powell and Muller say is most conducive to the formation of a new stock language. A village of fishermen receives a few castaways and a new stock language is formed. This incident may be repeated at different villages and thus several diverging dialects are begun which in time assume the form of distinct types of speech. These sever-

al villages are isolated from each other by the dense forests and bold headlands of the North-West coast ; intercommunication is infrequent and when it takes place only serves to widen the difference between the old and the new languages. Three things we know: (1). that forty-one types of speech actually existed along the Pacific front of the Kuro Siwo, some of which were spoken by single isolated villages; (2). upon reason and authority, that these were formed by the admixture of different languages, and not by a separation of the tribe into bands or villages ; (3). that there was an irregular intermingling of the languages of Asia with those of the beach, sufficient under the rules recognized by Powell and Muller to produce new stocks.

Humboldt's studies led him to conclude that the Aztecs came from the northwest, from a point at least as far north as the southern boundary of Oregon, and Prescott concurs in that view. Dr. Brinton, who is free from any intention to support the suggestions made in this article, makes this statement upon abundant authority :

"No reasonable doubt exists but that the Athapascas, Algonkins, Iroquois, Chatka-Muskokis and Nahuas all migrated from the north or west to the regions they occupied."

A careful study of the migration legends and linguistic routes north of Mexico, leads persuasively to the conclusion that most, if not all, the Indian languages east of the Rocky Mountains, north of Mexico, came from the direction if not from the very beach of the Pacific north-west.

If a more careful study should disclose that all these languages were compounded along the ocean beach in the region fronting the Kuro Siwo a solid basis for future investigations will have been laid. If, further, it shall be determined, in conformity with the expressed opinions of Humboldt, Prescott and Brinton, that the migrations of languages in North America have been from north to south, from west to east, very much will have been settled. If these inquiries should be thus determined would not the languages and ethnology of Washington be of the greatest interest to students ? Do we really inhabit Tulan that bright and happy land wherein the Aztecs and Algonkins dwelt during their golden age ? Or was this only one of their subsequent stopping places ?

Aside from theories it is of the utmost importance that this society and its individual members should at once begin the collection of the native languages of this state. Not only should each dialect be preserved in vocabularies but the principles of their construction should be mastered and preserved. Nothing has so far been done by the scholars of this state to rescue these rapidly disappearing languages from extinction. It is a matter of profound disappointment to a few that our state university and colleges have done nothing in this line. Will this society undertake the labor while it is yet time ? One

dialect of the Athapascan tongue having its affinities in the valleys of the Yukon and the Gila was formerly spoken on the headwaters of the Chehalis river ; in 1855, George Gibbs, whose name and solid fame as a philologist are inseparably connected with the early history of our commonwealth, prepared a short vocabulary of less than 500 words of this dialect ; it is now spoken by one old woman and her daughter. The Cowlitz tongue is spoken by less than a dozen persons ; the Chemakum is spoken by fewer, while other dialects are extinct and lost.

It is a fact which reflects seriously upon the educational institutions and scholars of the Pacific coast that you can best study the life of its primitive inhabitants in Chicago, New York, London or Berlin—and the further you get away from our state the better become your opportunities for such study. The archæological collection of the University of Washington is humiliating ; it makes no pretense whatever toward collecting the Indian language.

Then let the work of preserving these languages begin at this meeting of this society ; create a special department under charge of a committee whose duty it shall be to collect a vocabulary of every Indian dialect within our state, and such others as will aid in their understanding ; give this department authority to issue instructions to collectors and to request assistance in the name of the society. Then if each member of the society will assist by preparing a vocabulary of the Indian family in his immediate locality much can soon be done toward preserving these interesting memorials of a fading race. Will this society undertake the task ?

THE PUEBLOS AND ANCIENT MINES NEAR ALLISON, NEW MEXICO.

BY WM. TAYLOR.

Near the writer's home at Allison, Grant Co., N. M. on the west bank of the Rio Membres is a ruined pueblo which at one time must have contained nearly one hundred houses or apartments. It was built in the form of a hollow square, and covered about five acres of ground. The upper apartments have long since disappeared and nothing now remains above ground but the loose stones, and the lines of stones which formed the walls. I have dug into about 70 of the apartments or so-called ouses and found that they were built of rock below the sur-

face, but of adobe above. The walls below the surface for about four feet are well preserved, but above are entirely in ruins. In excavating the ruins, the roof of some of the buildings was found at an average of about $3\frac{1}{2}$ ft. from the surface and is of the usual construction. It is formed of logs or poles laid across from wall to wall and then covered with small willows, coarse grass and cane. Portions of the logs still remain, but lines of charcoal are so numerous as to show that the houses must have been burnt; the floor below the roof is made of a white cement, smooth and very level. Very few relics were found on these floors. In one place I found two very fine mugs made of clay, filled with ashes; one of these had a few pieces of charred bones in it. The mugs were found with the neck of one, inside of the other. In another building, I found a very fine stone hammer, or axe, about 5 in. in length with a groove around the middle, sharp at one end, square on the other. In the same house I found the skeleton of a small-sized person lying on the face, as though he had fallen in that way. The impression formed was that the inhabitants of the town were killed or driven away by hostile tribes. In seeking for evidence as to what they did with their dead, I was led to dig deeper, and found that they buried their dead in their houses under the cement floor. I dug out about 80 skeletons. They were invariably buried in the north-east corner of the rooms. Most of them were buried with the arms and legs drawn up, and in nearly every instance had a basin or earthen bowl over the head. In one case I found as many as three basins over the one skull, one inside of the other; in every case the bowls had been broken so as to leave a small hole in the bottom. This was owing to some religious belief I suppose, [to let the life or soul out]. The bowls were made of hard-burned clay decorated on the inside with all kinds of paintings made from mineral paint. I found those that had scroll-work around the top and turtles inside. One in particular had an animal figure that resembled a bear with a man standing beside it; another had an animal that looked like a goat; quite a number had fish and snakes. I found a skeleton that was very large; it had three bowls over the head. A bunch of this person's hair was about 2 in. in length and was as fine as average Caucasian hair, a little inclined to be curly, and of a dark brown color, which is evidence to my mind that they were a different race from the ordinary Indian. The skulls dug out were well-formed, not the shape of the Indian, but more resembling that of the white race; full in front and wide above and in front of the ears, showing that they had well-developed and well-shaped heads. That they were agriculturists is proven by the fact that in one house I found about 10 bu. of charred corn. Over this corn was a charred piece of some kind of coarse woven fabric, also charred. I believe that this entire valley was farmed by these people at one

time, as burned corn has been found at different places in this country. That they were living here at a very remote period is very clearly shown, as pottery, turquoise beads, stone axes and skeletons are dug out many feet below the surface of the ground in places. At Cook's Peak mining district they took out a vast amount of lead ore. I spent a good deal of time in looking through that district and have come to the following conclusion, as to the manner in which they worked the lead mines. They first built fires under the lime stone rock, and got it very hot, then pouring water on the rock it slacked and they could dig it out. They would then repeat the operation till all the ore near the surface was taken out. The old workings show that a vast amount of ore was removed. What they did with the ore is uncertain; it was probably used to make paint and decorate their pottery. I found a few pieces of lead ore about the ruins and some copper ore, but no copper tools. That they were an intelligent race goes without saying, as their manner of building and making pottery shows it. That they had trade relations with the tribes on the western coast is proved by the fact that earrings and other ornaments made of abalone shell are frequently found. The abalone shell is only found on the coast of California, I believe. Beads made of periwinkles are also found, the small end being cut off, forming a hole, through which to run a sinew or string of some kind. I have also found a sort of bracelet on the arm bones of a few skeletons, made out of a round shell, the back part being ground off, leaving a rim or ring, and strange as it may seem, I have found some that were not more than $2\frac{1}{4}$ in. in diameter, on the wrist of a large skeleton, showing that it must have been put on in child hood and never taken off. That there was a vast population belonging to this race here at one time, is shown by the fact that old ruins are found at every spring, and on all the creeks and rivers, and even many miles away from any water, showing that at the time they were here, water was found where there is none at the present day. At the celebrated Hudson Hot Springs, five miles west of Allison many relics, ornaments, bones, etc., were taken out. This spring is located at the top of a round hill, nearly 80 ft. high and in the centre of the hill. The spring itself is about 14 feet in diameter, the water is discharged at a temperature of 142° Fdht. In clearing out this spring a large pump was put to work, and vast quantities of bones of extinct animals were taken out, and teeth of the mastodon and mammoth; with these were pottery fragments, arrow-points and stone clubs. This would indicate that the people were here at the time that those animals existed.*

There is a great field for research in this portion of the country.

*This is the first instance of bones of extinct animals being found with pottery and arrow-points. The fact that they were taken out by the pump makes it doubtful whether they belong to the same horizon.—Ed.

Another point worthy of notice is that the people had communications by signals, as there are, upon all the high mountain peaks, old fortifications and walls. They no doubt communicated with one another by signals from these points, and probably used them as look-outs, as well as fortifications.

OSIRIS—RESURRECTION AND THE PRINCIPLE OF LIFE.

BY ELLEN RUSSELL EMERSON.

"Foreigners coming for the first time to Egypt knew not what to do for laughter at the divine beasts, but the universal superstition finished by overpowering them."—*Philo.*

The Theban and Memphite Codes declare the relationship of the Gods one to another, and in the latter code the over-ruler, Ra, is the Father, the Gods of Being and Unbeing are sons, but the Book of the Dead appoints one of these sons namely, Osiris, to represent man. It is his effort to obtain oneness with divinity; that is the theme dwelt upon in Egyptian scripture. Heir to the "principles of Ra" by descent, being man, his ferocity of nature typified by Taurus, is likely to subvert the order of the celestial world, and he is given a talisman through whose power he may obtain that self control which shall elevate him to the god-head, and make him one with Ra. This mystic at-one-ment is expressed in various parts of Egyptian scripture but the following quotation will suffice for the present analysis:

I grew up among the Great Ones. I grow among those who are growing.—(CXV.)

I open the circle of darkness. I am one of you.—(Ibid.)

... the full grown in Heliopolis (city of the Sun) becomes the flesh of his flesh, the flesh of his flesh, the master of his sight.—(Ibid.)

Every God, every goddess who passes is in me who have been examined by Ra before the princes of light.—(CXXIV.)

I proclaim what the (Osiris) says to me and what I say is repeated by him. Masters of Truth I bring to you Truth and I set aside from you evil. "Go back Osiris! What thou hatest is in him mutually. Go back before me what thou hatest is in me mutually.—XC.)

I open because they opened to me.—(CXCII.)

He is I and reciprocally.—(LXIV.)

I arrive at the land of eternity. I reach the land of eternity

and thou hast directed so for me who am in Ra and a God in every point.

Osiris enters Tattu he meets there the soul of Ra, the soul of one embraces the soul of the other.—(XVII).

An extended explanation of the relation of the gods, or "limbs" of Ra one to another, their duality and commonality of essence is given in chapter seventeenth in the Book of the Dead* wherein Ra is claimed to be the "Only Being in the firmament—ruling what he has made"—"the maker of his limbs that became the gods in the retinue of Ra." This supremacy of the Father, reassisted by means of various symbolic expressions, is claimed in the statement that "One in One, he is the Solar Eye."—(XLII). The evolution of Osiris N. (of man) and Osiris the Good are his functions and are in him."—(XLII).

That is, imparting his principles there is an interdependence of action like that of the principle of life in the functions of the body. This interdependence divides the regal and autocratic dominancy of the god-head with the partakers of the principles of the god head and at the same time presents the at-one-ment of creator and creatures, Father and sons. The Egyptian sages conceived that the activity of principles of Ra were necessary to their continuance, as activity of all energies of life is requisite to vitality in the physical world and when ascribing supremacy to Ra they no wise absolve him from contingencies such as might happen to an elemental substance, and while they state: "He is the one who combines the millions of years for you who are or will be in heaven, in earth, South, North, West, East. His fear is in your bosoms. He moulded you with his hands"—[XLII], these ancient writers add: "He escapes death by the renewing of his duration in your bosoms" [Ibid] so descending from a description of a god to description of a god's necessity. The divine energy provides for itself its means of action and its continuity, and the author states: "therefore his transformations are in himself nobody knows the blood that is in them. He has stretched his limbs† Nobody knew the time when he did that in Heaven. He determined the earth, determined the births." One of One Ra is not wanting to the forms through which he passes successively."—[XLII].

Thus every god was a primary element, partaker of the "Principles" he was in that fact supreme. These Principles are represented by Amen-Ra since that name provides description of hidden force in the universe. This hidden power is a creature of its own principles, a power that is its own imperious necessity, no point of its being is more positive than another, and wherever the

*Dr Davis' translation of Mr. Periet's Book of the Dead is here used as a convenient reference to the English reader.

†That is: extended his god-head, the term "limbs" used to describe the various gods of the pantheon.

Principle there is Rule, and the Over Ruler. Ra at Heliopolis, Ptah at Memphis, Amen at Thebes, Amen-Ra of the ritual, and hymn of the burial service, are Principles and of one "Essence." But if there was no supremacy, discrimination was made between the gods of Egypt by way of the elements in which the Principles operated;—for instance, Seb in the earth is represented to be offspring of Ra and Maut—that is of the sun and cloud—of light and shade, to use the more ancient expression descriptive of the god of the sun and his emanation, and as he was offspring of this union he inherited the principle of Ra. Thus Seb may be said to be Ra laboring in ultimates, those ultimates discriminating the son from the father.

The idea that is suggested in this connection is that an embodiment, either in form of the earth, star, or animal existed through its heirship of the principles of Ra, and this inheritance for example constituted that sonship which gave to Seb the power of imparting life, whereby he is called Father, or generator. Seb, it must be remembered is the father of Osiris and furthermore Seb's consort is Nut, the celestial mother, an alliance that indicates the heedfulness of the Egyptian writers to the theory evident in the scheme of resurrection, that matter is the basis of our existence in individual form hereafter. Whatever transitions Osiris experiences, however exalted his conditions even to an at-one-ment with Ra, it is still maintained in the codes of Egypt that he is the son of Seb [earth] and he remains the son of Seb when a god!

Individuality remained to Osiris, for as the sun he enters Nut and as the sun he is born of Nut. He asserts: "I made my shape with his shape."—[LXXXVIII]. I go across the brazen firmament, I kneel among the stars, salutations are given to me in the bark. I am in the bark maut, I gaze upon Ra in the Maas, for I join myself with his disk every day [XV] Shape, form, individuality, are recognized in the scheme of the Osirian resurrection as necessary to Being, but that they are preserved only through an influx of the principles of Ra is made evident in the following statement: "His form would get putrified and turn into numerous worms if it were not made for it that Shu's eye pass through it like every other goddess, every bird, every fish, every reptile, every quadruped, every worm and the same would be dead but for the Truth which is set in his belly."—[CLIV].

The mystic term Shu's Eye is a descriptive phrase. Shu is an impersonation of Force* and the Eye is a symbol of Hathor, who personates Love and who was, as has been stated, identified with Aphrodyte by the Greeks. Analyzed, the passage or text quoted states that without the divine energy of Love and Truth corruption would take place in all forms of life, a declaration which explains what were the principles that were believed to

*Represented upholding the heavens.

preserve and maintain existence. But these principles [Love and Truth] are they in fact what is termed the "Principles of Ra"? Doubtless since Ra is son of Hathor, goddess of Love, while Shu is his son a relationship which determines the meaning of the term Shu's Eye in the passage quoted. But if the principles of Ra maintain life preventing corruption did they maintain individuality? Is Love the source of form and of personality? Evidently since individuality is received from the mother, as it is said: "My heart from my mother . . . Thou art my personality." The "heart of Ra" which it was necessary for Osiris to obtain was the heart of Ra's mother, that is Hathor, goddess of Love. Personality and principle alike, existed in Love, the Motherhood of God is not a vagary of thought, neither is the Fatherhood an abstraction as may be perceived in the Hymn to Amen-Ra :*

Lord of Wisdom whose precepts are wise, at whose pleasure the Nile overflows,
 Lord of Mercy, most loving at whose coming men live,
 Opener of every eye,
 Proceeding from the firmament
 Causer of pleasure and light,
 Hail to Thee Lord of Truth,
 Listening to the poor who are in distress."

Amen Ra here presented "has ears that he might hear," he is an anthropomorphic god; and wherefore? It is evident:—Love has a personal quality in its very essence and its permeation throughout the physical universe causes elements to combine to the end of individuality! Without this individuality acquired by means of the Mother-Heart, [the will power and affection] dissolution or putrification would result. The Heart [Love] is the centripetal force of Being, it is the sun of the vital system, and maintains form, and of this centre, this sun, it is claimed that "His transformations are in himself nobody knows the blood that is in them."

VI. Osiris in the solar myth becomes capable of imparting radiance through the means of a second birth, this second birth is accomplished by the celestial mother through the functions of assimilation. The celestial mother and the terrestrial father [Nut and Seb] are representatives of the psychic physico nature inherited by Osiris. This common duality in the nature of man and gods was a necessary concomitant of being,—there must be a material plane for the exercise of the energy of life! To represent the sameness of conditions possessed by the celestial and divine as that of the new born human the Egyptian ascribed the emblem of Nut, to all immortals alike. This emblem was termed the "Soul Name."†

*Trans. C. A. Godwin.

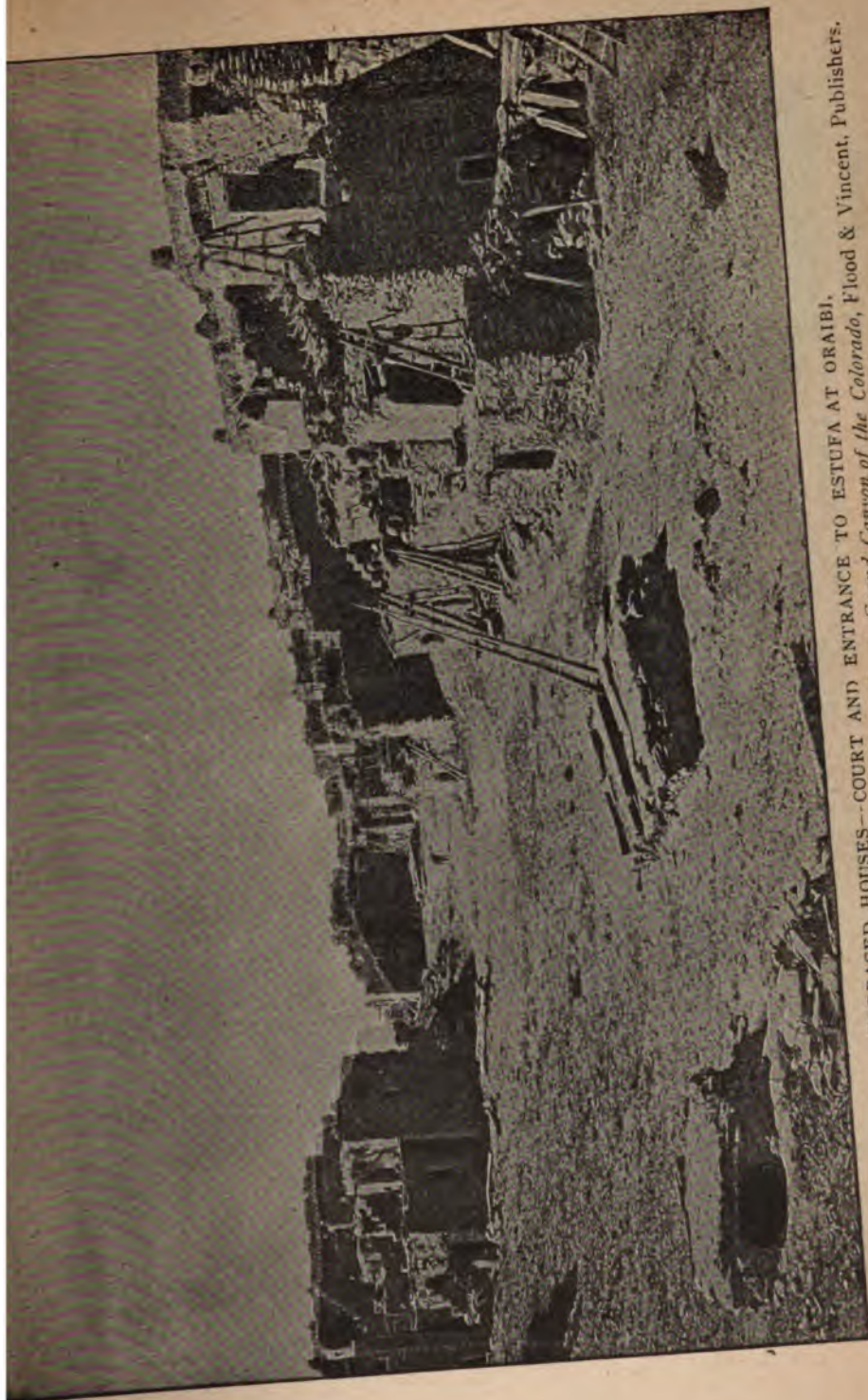
†Explanation more detailed in another section.

It is related in Egyptian myth that the union of sun and shade—of Amen-Ra and Maut produced the moon, denominated Khons. Khons, at the event of his birth exclaims: "I arise, I begin myself again among the gods, I am Khons whose Order conquers everything."—[LXXXVIII]. This birth of Khons is characterized: "being born a second time, mystery of the soul" and the "soul" is called "Lord of resurrection going out of darkness [LXIV]" that is, born of the "mistress of darkness," [of the resurrection mother, Maut].

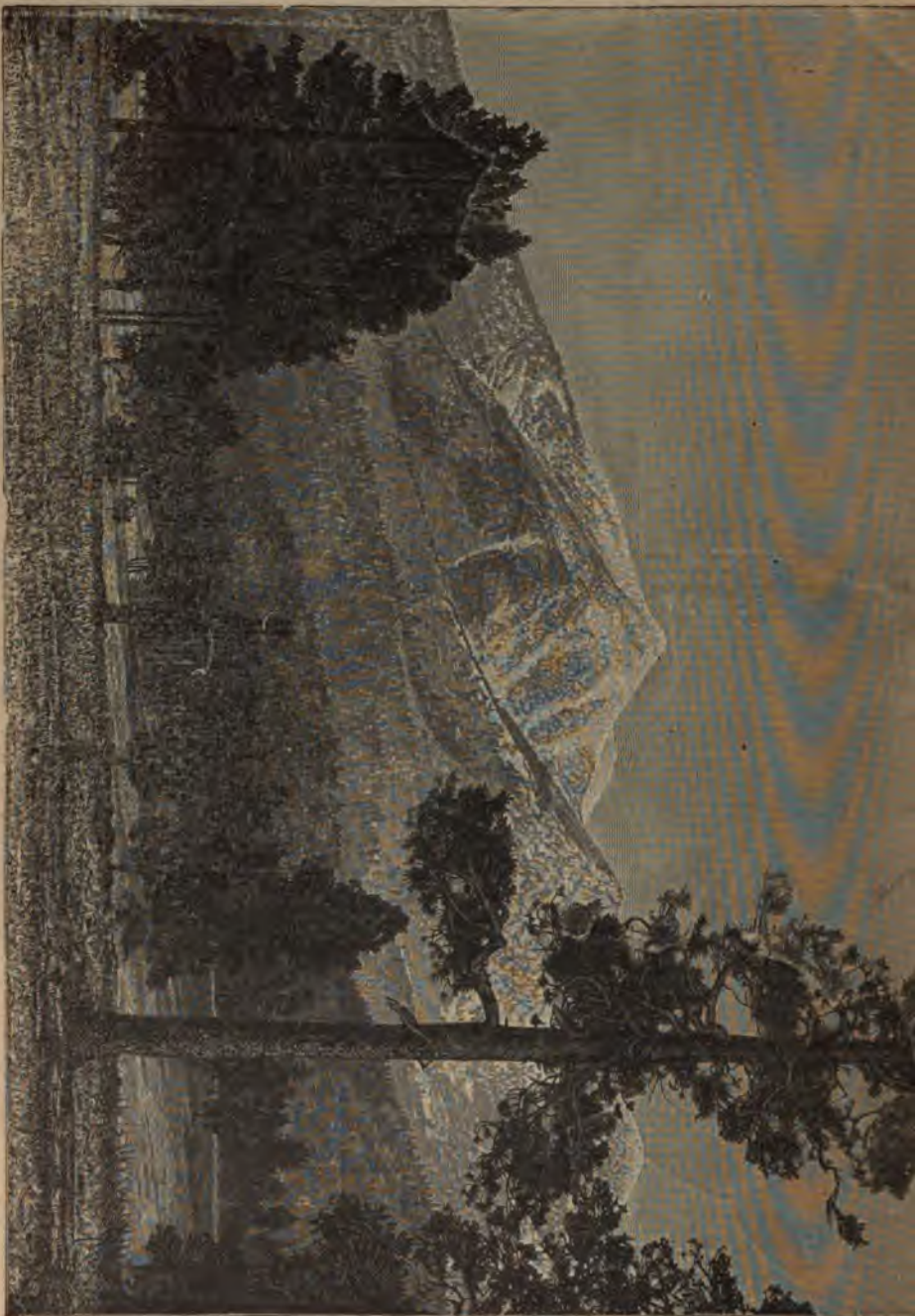
Regarding Ra as a Jovis Tonans, his union with Maut becomes a picture of natural phenomena; since in cloud comes the spring time and re-created vernal life and it is at this period when is most frequent those electric storms common to northern latitudes. The importance of a humid element to the production of life is recognized in the following passage. "I fly away to illuminate the shades. I become like the sun of the intelligent moving for the products of the earth. I moved to give motion to the shades." The moon herein is a "mover," to use Dante's expression, and its intelligent activity fertilizes the earth—a notion that is sustained by recent experiences in the orient of the fertilizing effect of this planet in "shade." The moon among primitive peoples is assumed to be concerned in the re-creation of the vernal world, and also in the re-birth of man, while water is especially the element that is under the power of this planet and therefore since Osiris' element is water it is in following that his birth is associated with that of Khons, the latter becoming typical of the former. Water in its association with the phenomena of the electric storm, and in the mysterious overflow of the Nile was a most complete symbol of a rejuvenating and re-creating power, a representative symbol. Denominated the water of life, this element presents the magic force capable of restoring the dead that was attributed to all Egyptian scriptures and since as a symbol it was expressive of fertility the dead are cautioned not to permit the mystic "Eye to suppress its tears," tears in this case being productive of conditions that were security to re-birth. Weeping over the dead was a rite prescribed for the benefit of the departed. The consort of Osiris was sometimes called the weeping Isis, and with Nephtis, [her dual] she is the prototype of those hired weepers of the burial service represented upon vases and in the sculpture of the tombs. The notion that tears are essential to the dead for aids to re-creation may be prefigured in the Rain-rite, among the Aztecs wherein the tears of children of sacrifice were supposed to induce the coming of rain, but an analysis of the context wherein the authors of the Book of the Dead ascribe vitalizing force to tears suggests that the meaning intended is of a more spiritual character than the Aztec rite. It has been stated that the mystic Eye spoken of as a maintainer and creator of life is an emblem of di-

vine Love, and it should be stated that this emblem was one of the most precious talismans used in Egypt; its effectiveness is expressed in the following: "I come I embrace the eye I stand up, I make myself again. I fly up to heaven, I embrace my Eye in my moving." A passage showing what power was ascribed to the symbol it also reveals that talismanic force was believed to be love, furthermore tears from the eye obedient to affection or love were vehicles of this magic force as rain is a vehicle of electricity. Love's tears are magnetic. Isis weeps over the body of her consort Osiris after gathering and placing together its separated members strewn wide in the dissolution caused by his decease! This magnetic force is a solar force, it is the power disclosed in the "bands of Orion" and might well be attributed to Isis, whose star is the 'dog-star of the world,' namely, Sirius. And Isis, together with other goddesses is a Resurrection Mother, her tears the prophecy of Osiris' resurrection. Isis weeps and lo the spring time and the renewed radiance of the sun! The mystic Eye whose tears were not to be restrained was called the Eye of Ra and also the Serpent's eye and he who was born a second time exclaims: "I am Horus [coming into Being] I am Uatit." Symbolized by Shu's Eye, Uatit personifies the North, abode of Ra. It is in this region lies the starry serpent upon whose folds rests the polar star of the Egyptians [Thuban]. Uatit is the serpent woman, has the serpent eye, and when Osiris claims that "coming into Being" he is Uatit, it is evident that the process of the second birth is governed by a power disclosed in the serpent and represented by the serpent's eye. So associated the newborn assumes an hermaphrodite character; Osiris is both the hero of dawn [Horus] and the Woman who possesses the Eye, his natural power is sublimated, making a near approach to oneness with the Overruler whose dwelling is Uatit, or the North.

VII. It has been stated that the vulture is a generic emblem of motherhood, an explanation of which is found in an illustration wherein the celestial mother Nut is presented in the form of a woman into whose open mouth a dead sun, representative image of Osiris, is about to enter. A preliminary act to his divinization it is the sun's second birth which is accomplished by assimilation into the divine body of the goddess. A process of transubstantiation, it may be equally figured by the Maut vulture as the habit of the species is to devour and assimilate dead bodies. It appears to be always necessary in illustrations used in the Egyptian scheme of resurrection to give two examples and these two are on diverse planes, the one a discrete degree so to speak above the other, the one celestial and the other terrestrial. Assimilation by Nut and an absorption of Ra are means to one end in the resurrection scheme. Osiris' assimilation by the celestial mother restored his radiance, and he became a god of light, his face no longer was "like that of an old man." Radiation is accepted



TERRACED HOUSES--COURT AND ENTRANCE TO ESTUFA AT ORAIBI.
—From *Grand Canyon of the Colorado*, Flood & Vincent, Publishers.



SAN FRANCISCO MOUNTAIN—ONE OF THE FOUR SACRED PEAKS.
—From *Grand Canyon of the Colorado*, Flood & Vincent, Publishers.

as proof of renewed life, that is a radiation that included power to impart life. As it was assumed that the sun's energy was creative so likewise it was assumed that Osiris, assimilated by Nut, the stellar body of the heavens, become a creator or generator: "His body was full of light," therefore he was a life-giving spirit—[pneuma].

Nut was a dual and sister of shade, while a consort of the earth. Shade is Maut, and was the great mother, to use the Indian term for divine motherhood, and her alliance with divinity constituted her the mother of all being. She was at once the mother of Ra [Being] and of Osiris, [Being that has existed] also of his son Horus, [coming into Being] for each of these possesses the dual nature, implied by the alliances of Nut and Seb, and Ra and Maut. As Maut was the mother of all Being the emblem descriptive of her attitude is of peculiar importance. This emblem, as has been said, is a vulture, and its appropriateness is disclosed, as has been implied in the manner of the Osirian birth in Nut; for since assimilation of the dead sun by the celestial mother was a means of divinization of its substances, assimilation of dead bodies by the Maut vulture should equally represent their transubstantiation!

Maut is explained to be the "cloud embodying the heavens." The cloud is the humid envelope of the sun's radiance that so tempered and provided a vehicle, becomes the embryo of life. Nut and Maut are dual, both are resurrection mothers, and Nut devouring the dead sun, and the Maut vulture devouring the natural body of the dead, figure the process of resurrection and sublimation of both soul and body. It is necessary to remember that the soul is a form of substance, as is the body, a substance that requires revitalization as does the spent solar flame whose body characterizing Osiris "has the face of an old man." To renew or recreate is the province of assimilative functions.

VIII. Egyptian scripture emphasizes the endlessness of life. There is no haste, all is calm steadfastness. Both the sculptures on the tombs of Egypt and the temples are expressive of an amplitude of time while the statues of Egypt's kings protest against modern activity. The sun rises today as yesterday and there is no change, why this running to and fro? This patient calm is a trait of the vulture, its movements are expressive of tranquility. As it wheels in the blue depths its perfect equilibrium and poise express an energy that is self-sustained and tireless. Engulfed in that eternal abyss wherein dwelt Egypt's cycle of gods, to reappear, descending as ascending without precipitation, what bird's flight more expressive of the eternal round of existence governed by those unhastening epochs that mark a limitless series of metempsychosis and transubstantiation?

A wing is a thing of poise, of tranquility, and of shelter, it is an exponent of that protective instinct common to motherhood that

is recognized in all ages. To show that the breadth of the wing distinguishing the vulture was in itself a symbol its wings were often pictured extended to their full length as in the case of the representation of the Maut vultures on the ceiling of the temples. But perhaps the most interesting example of the use of this symbol is that where Tefunt—impersonation of Impulse, is wrapped fold on fold by these mighty wings. Impulse antedating action is mysterious and hidden and therefore the goddess is enfolded by the wings that in the case of presentment of Isis are affixed spreading from the shoulders. Resurrection Mothers each, their separate activity in the scheme of the recreation of Osiris is thus discriminated, in the one case immortal birth has its impetus, in the other that impetus has taken effect. In our simple modern expression the history of a plant illustrates more plainly the subject treated by means of these diverse applications of the wings of the Maut vulture, for although the impulse to life in the embryo is secret, its manifestation in the growth of seed and plant is open and intelligible. However if followed with care, the illustration of Egyptian selection develops close consideration of the subject treated, in particular is recognized a silent power in the universe, in the Via Lactia and in all "emanations" from the "hidden" Ra of which the vulture* with its wide embracing wings is a type. The bird when fathoms deep in the place of the vibrating zenith seems fixed and still, so suggesting the "Motionless Heart" in the "Peace of Amenti" favorite figurative expression in the Book of the Dead, when describing divinization and oneness with Ra, and descending it is observant of all that befalls beneath, while as it wheels its faculties are keenly alive, the steadiness of its movements lending a certainty of vision as area upon area of plain and valley disclose their secrets which to the vulture is a tale of life and death. Protector of life by robbery of death, this dark pinioned emissary of the god of Egypt is followed by its own genii, their eager beaks suggestive of their office, as together, discovering their prey they drop to earth. There is no resistance and there is no strife with the dead; covered by the moving darkness of muscular wings and held by the savage talons the dead body disappears as if in a grave, and their work accomplished these Ra scavengers seek a perch whereon they sit with indrawn heads and lifted wings, an inscrutable silence suggesting the unseen labors of assimilation whereby that which is dead becomes a means of life, the "corruptible" entering the living tissues and furnishing strength to energies as necessary to the preservation of life as the air and sunshine. And during the process the effluvia from the vulture's body suggests the charnel house, and the great dark eyes, if opened suddenly upon an intruder within the privacy of its rest, possess the gloom of the shadows of the tomb.

The great condor of the Andes, sacred to the Aztecs is claimed to rise 20,000 feet.

AN ARCHAIC EXHIBITION.

BY WILLIAM COPLEY WINSLOW, SC. D.

Professor Petrie and his colleagues have placed on exhibition at University College in London, an exceedingly valuable collection of relics of Ancient Egypt. Some of the objects will be sent to American Museums. They represent two sites upon which excavations were made last winter and spring, Hierakonpolis and Denderah, the former some thirty miles south, the latter about thirty miles north of Thebes, where the modern Luxor is located. I can specify but a few of the relics named in the catalogue of 20 pp. sent me by Dr. Petrie.

The chief discoveries at Kom-el-Ahmar, the site of Hierakonpolis, whose ancient name was Nekhen, were made on the site of an ancient temple. Hence the relics are of unique value; for the remains of the primitive kings hitherto found, certainly for many years, have been sepulchral. Prof. Petrie considers these relics to be hardly less than six thousand years old, and some of them to probably exceed that period. There lived therefore, in the valley of the Nile a people who had attained high artistic skill and could turn out high-class work previous to the pyramid era.

This appears by a short study of the collection. For example among the finds

"Are two mace-heads of limestone, the smaller perfect, the larger unfortunately broken. Both are ornamented with carvings in relief, well and clearly executed. The former represents a King, Nar-Mer, seated under a canopy at the top of a long flight of steps. Behind him is the High Priest, whose name is also inscribed, and the Royal servant—together with different kinds of cattle and symbols denoting their number—a schedule of either the King's property or his spoils. On the larger mace he is represented as superintending irrigation works—he holds in his hand a hoe, people are busy among the streams. Perhaps his majesty is going in State to lay the first stone or turn the first sod in some scheme for canalisation or reclamation."

Evolution is illustrated by a series of objects in slate.

"They begin as plainly-fashioned slabs, sometimes rudely imitating an animal in outline, with a slight hollow in the middle. These were used in the preparation of pigments, often for personal adornment. Then they were made larger and adapted to other purposes. They were sculptured in low relief and converted into records. One, the general design of which brings to mind some old Indian work, bears figures of wild creatures. The most interesting of all, however, remains behind in Egypt, and is represented only by a cast. Here King Nar-Mer again appears. On one side he is walking in State, and is attended by four men bearing the standards of their nomes. These men, it is worth notice, represent different types, and wear their hair in different fashions, showing that the population at

that early date contained diverse elements. On the other side he is engaged in the pastime of knocking his captive enemies on the head with a mace. Apparently his Lord High Executioner completed the work, and made all sure by decapitating the victims; for ten corpses lie near, each with the head placed between the legs."

A curious thing is a block of stone which once supported the pivot of a door. It is carved into

"The shape of a captive, with hands bound behind his back, seemingly crushed down by the weight, and playing the part of gryphon or other "fearsome" beasts in Romanesque portals. This illustrates a passage in the Book of the Dead, which says that the wicked shall be crushed under the doors of Hades. I glance in passing at an extraordinary collection of small carved objects in ivory, which were buried in one mass, about seven feet long and two wide and deep, including a figure of men, women and animals. Besides these are various statuettes, often well executed, pottery not generally so good, numerous figures—votive offerings—in the same material, jars of alabaster, sometimes very graceful, and in stone. The most remarkable is a fine vase, quite half a yard in diameter, beautifully worked in a handsome diorite or syenite, one of those rather rare varieties where the hornblende assumes a lancet-like outline. The rock is a tough one, and would not be easily wrought even at the present day. Yet it could be executed in the Valley of the Nile full six thousand years ago!

"The figures from the main find," as Prof. Petrie calls them, are nearly all in green glazed ware, showing that the system of modelling in sand body, and glazing over, was fully developed in the earliest dynasties. Monkeys are abundant; there are also the pig, calf, oryx, dog, pelican, hawk, scorpion and a fish. Two human figures are a bound captive and a dwarf. The dwarf is of a Ptah-Sokar type, and illustrates how the Egyptians venerated monstrosities as due to some superhuman cause. This glazed ware is also seen in model vases and jars, and a small tile, like that in the pyramid at Sacquara, proves the early date of such faience decoration.

The bulk of the relics from Denderah* range from the sixth to the seventh dynasty. Among them is a large series of sculptured tablets, some deeply engraved, but most of them in relief, which were used as panels

"For the adornment of tombs. These, in one case, are practically complete. Another tomb yielded a set of bronze instruments used in the funeral ceremonies, statuettes, jars of pottery and of alabaster, beads and miscellaneous ornaments. Two quaint figures, representing mourners, are worth notice; they have been made on the wheel as earthenware jars, and these have been slightly moulded into shape, the face and arms being added in each case. One is weeping, and the tears seem to need the help of the knuckles; the other is tearing the hair. A delicately-wrought dish for the toilette table, made out of hard diorite in the shape of a river mussel, could not be surpassed by any workmen of the present day, and some other bowls in a similar material are worth notice. Two sitting figures, well executed, represent a king and queen, whose names indicate that they probably belong to the Twelfth Dynasty. Nor must I forget a small, but very interesting object. It is nothing less than a homely bone button, about as big as is now worn on a coat, with carving on the face. Prof. Petrie has seen several such from time to time, and takes this to represent a couple

*See Dr. Winslow's article on Prof. Petrie's discoveries at Denderah in the *ANTIQUARIAN* for July-August.

of monkeys—for these buttons exhibit a degeneration in the process of copying similar to that which is found on Gaulish coins that started from a Greek model."

Contrast these two inventories—the simple inscription on a stele, that Nekhtu and his wife Hepu, had—serfs 31, oxen 33, asses 13, goats 100, 4 boats of one form and 5 of another, with the personal possessions of Nar-Mer, on the limestone mace from Hierakonpolis. The inventory runs: Oxen, 400,000; goats, 1,422,000; captives, 120,000; followed by an enclosure for wild animals, which seems to include the number 120,000.

Prof. Petrie well says of a portion of his collection that "these monuments of the civil life are of unique value for the civilization of the earliest dynasties." The collections, as a whole, are fully up to the Petrie standard.



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MAP MAKING IN THE EARLY UNIVERSITIES.

The cut, kindly loaned by Harper Bros, was used in Harper's Magazine for May to illustrate an article on Universities in the Middle Ages. It will be noticed that the making of maps and the study of globes, and the compass, and of navigation, were specialties at that time. These studies had a great effect upon and doubtless led to the voyages which were taken first by the Zeno Brothers to Iceland, afterwards by Columbus, Americus Vesputius, by John and Sebastian Cabot, Verrazano and others to the different parts of America. The cut is suggestive of close connection between university studies and the more difficult tasks required of men in practical life. There were no polytechnic schools, but along with the writing of missals there was map making and the study of the classics, mathematics, and physics, including astronomy, geography, trigonometry, &c. These were the studies between 1250 and 1492.

THE MAORI VIEW OF THE SOUL.

BY ELSDON BEST.

A strange people were the Maoris, and an ancient beyond computation. With all their wondrous ceremonies, customs and traditions, so strongly suggestive of an Asiatic origin, why is there no trace of sun worship among them? Why did they look upon that useful orb but as a creature to be belaboured with clubs and picketed with a lariat, lest it run the day too swiftly? Yet the wondrous fire ceremony was performed by them, and yet survives among the lotus eaters of the many isled sea. Traces of the Phallic cult, most ancient of human faiths, are here preserved; their birth and death rites were of unknown antiquity in the misty days of Sargon I. and the Fish God of the wonderful valley. An old, old people—their work is nigh completed in the World of Light; the axe with which they blazed the way across half a world, falls from nerveless hands; the light borne by the great western Heke flashes out across their neolithic trail and the Children of Maui retreat before it into the gloom-laden forest of Tane.

The knowledge yet in the possession of the old men here is interesting in the extreme, and would be eagerly welcomed by anthropologists of all nations. One subject has specially claimed my attention, namely, that of the different spirits or essences of man. These bear a great resemblance to the beliefs of Eastern nations, and as far west at least as Egypt. The *wairua* is the spirit of man which lives after death, when it leaves the body and descends to Hades. It is the *wairua* also which leaves the body during sleep, and goes roaming forth, sometimes descending to Hades, but returning to its habitation, the body, when the sleeper awakes. Such is the Maori explanation of dreams. If a sleeper is awakened suddenly, the body starts, that is *oho mauri*—

THE CONVULSIVE EFFORT OF THE BREATH OF LIFE

to retain its hold on the body; it is the *wairua* returning to the body—it is back in an instant. It is wrong to wake a person suddenly; at such a time he would say, "*Etama! Ka oho mauri ahau i a Koe*,"—you caused the Breath of Life to leap within me. The *wairua* is the source of moral ideas, it prompts a man to good or evil deeds—*nanr Katoa ana Korero*—all such promptings proceed from it.

Again, the *hau* is the essence of man, the *ahua* or invisible likeness of his being and physical life. In one sense a photo-

graph is the *hau* or *ahau* of a person, but the true *hau* is an essence and not visible to mortal eyes. The *hau* ceases to exist at the death of the body, and, unlike the *wairua*, it cannot leave the body. If the *hau* of a person is taken (by sorcery) the body dies at once.

In ancient Egypt we find that the accepted belief was that man consisted of three parts—the body, or ordinary living man; the *Ka*, or double, which was a sort of shadowy self, which came out of the body and returned to it as in dreams; and the soul, a still more subtle essence, which at death went to the gods, was judged by Osiris, and either rewarded for its merits or punished for its sins. Here the *Ka* resembles, so far, the Maori *Wairua*, but differs from it in the fact of not leaving the body at death, but continuing to abide therein for all time, save for an occasional jaunt outside to take the air and partake of shadowy food, but incapable of existing without a physical basis in the old body or some likeness of it. Even the soul occasionally came to visit its former abode. Hence the agile tourist has pyramids to gaze upon at this day and the cheerful mummy lurketh in our museums. In Maori-land, in certain ceremonies, the man fed his own *hau* and the singular rite known as *Kumanga Kai* or feeding the *atua* (spirit) by its *waka* or medium, is one of the most interesting things I have met with, but all too long to relate here.

The lands or home of a tribe are also endowed with the *hau* or *mauri*, meaning a protecting power over the tribal lands. The *hau* which protects the home from the machinations of sorcery is termed *Ahurewa*, and is a form of *tuahu*, an emblem erected in the sacred place of the settlement. The *mauri* of a forest, which protect the birds thereof, are of two kinds, the *Kira* and *Rau huka*. They are useful in attracting birds from the lands of other tribes.

In Clodd's "Story of Primitive Man," we read: "The barbaric mind, with its belief in spirits dwelling in lifeless things, in big stones as the parents of little stones, and so forth, seems to reach a higher plane when it conceives of a life shared in common by man and animal and plant, and thereupon frames its myths—real enough to itself—of human descent from trees and animals, rather than from stones." Now the Maori has not followed this line of thought, which leads to totemism; but on the other hand he has evolved the brilliant idea that trees had a common origin, and are descended from common ancestors with himself, that is, from Tane and his numerous wives. "It was Tane who went forth in search of woman; he found Hine-tu-maunga, and their off-spring was Parawhenuamea—hence the great waters. He found Hinewaoriki; their issue was the Kahika [white pine] and Matai [black pine]. He found Momuhanga; their issue was the totara. He found

Tukapua; their issue was the Tawai (fagus). He found Mangonui; their issue was the Tawa, also the Hinau. He found Te Pu-whakahara; the issue of their union was the Maire. He found Rere-noa; their issue was the Rata; He found Ruru-tangi-akau; their issue was the Ake. He found Punga; their issue was the Kotukutuku, also the Konini, besides birds and all small things (insects, &c.) He found Tutoro whenua; their issue was the Aruhe (fern root). Then it was that Tane found Kurawaka, the grand-daughter of Tiki, or she was brought to Tane by Roiho and Roake. From this union came Hineahuone, from whom we, the Maori people, are descended."

A similar account of the origin of many trees and birds is to be found in White's *Ancient History of the Maori*, vol. 1, p. 127. These matua, given by Pio and Tuhoe, were demi-gods of very ancient times, and appear to have been each the tutelary genius of the tree, shrub, bird, or what not, to which they are said to have given birth in the misty days of the long ago, when man was young upon the earth. It is probable that such myths as these have come down from the ancient people of the land, and have not been evolved since the historic migration.

Here it will be seen that trees, fern root, the kumara, shrubs, &c., and the genus homo are descended from a common source, but that the genealogical lines separated in the days of the demi-gods.

This is a custom which resembles the American Taboo, called by the Maoris "Rahui." It is designed to protect property, crops, fish, &c., from thieves or from being tampered with, and is somewhat similar to the Mauri, but would appear to have been mostly used for special occasions. To prevent a stream from being fished out of season the priest would protect them by a rahui, the mainstay of which was a sacred fire kindled by friction and over which sundry karakia of an alarming nature were repeated. Should this rahui be broken by any person, he will be afflicted by divers disorders of a discomposing nature, and on going to the priest for something to alleviate his misery, that priest, far-seeing and all-knowing, after the manner of his kind, will say, "He ahi to mate,"—you have disregarded the sacred fire, i. e., the Rahui.

THE RELIGIOUS LIFE AND WORKS OF THE CLIFF DWELLERS.

BY STEPHEN D. PEET.

Much has been written concerning the religious customs of the Pueblos, and several persons have made these their special study and have brought out some very interesting facts.*

The information which we have secured from these various sources shows that the Pueblos were exceedingly religious and that their architecture, art, domestic life, social state and tribal organization were very much influenced by the religious notions which they inherited from their ancestors. Some of these notions and customs may have been introduced after the time of the discovery, yet the supposition is that they were practiced by the Cliff-dwellers and Pueblos, who were the same people; and the information which we have received from them will apply equally to the unknown people. Let us then give attention to the facts brought out:

We may say that the American explorers have learned, during the last ten or fifteen years, more about the religious customs of the people than the Spanish missionaries did in three hundred years. The early Spanish explorers, to be sure, noticed some of the "peculiar structures, to which they gave the name of estufas or hot-rooms," which were the religious houses and places of assembly, and wrote of them as existing in every village or pueblo which they visited. They wrote also of the peculiar custom of hailing the sun every morning at its rising, a custom which is still present and which they call preaching; the following is the description given by Castaneda:

"They do not have chiefs, but are ruled by a council of the oldest men; they have priests who preach to them, whom they call papas; these are the elders. They go up to the highest roof in the village and preach to the village from there, like public criers, in the morning when the sun is rising—the whole village being silent and sitting in the galleries to listen. The estufas belong to the whole village. It is a sacrilege for the women to go into the estufas to sleep. They burn their dead, and throw the implements used by them in their work into the fire with their bodies. The young men live in the estufas, which are in the yards of the village; they (the estufas) are

* (Among these explorers are the following: Mr. F. H. Cushing, Mr. J. Walker Fewkes, Dr. Washington Matthews, Mr. A. M. Stephen, Mr. Jas. A. Stevenson, Mrs. Matilda C. Stevenson, Major W. J. Powell. All of these persons have been permitted to witness the secret rites and sacred ceremonies which are still practiced by the different Pueblo tribes.)

(Mr. F. H. Cushing was initiated into one of the secret orders of the Zunis and was baptized by one of the Zuni chiefs in the waters of the Atlantic Ocean, while on an eastern tour with these chiefs. Dr. Washington Matthews was permitted to witness the sand-paintings of the Navajos and learn from these their peculiar notions as to the nature powers, and the superstition as to the efficacy of prayer and sand paintings combined in healing the sick and expelling the evil spirit of disease. Mr. J. Walker Fewkes has made a special study of the religious dances, dramas and symbols of the Tusayans. Mrs. Matilda C. Stevenson has made a study of the mythology of the Sias, a tribe living near the Rio Grande.) The reports of the Ethnological Bureau contain these descriptions, with many plates and illustrations.

underground, square or round, with pine pillars; some were seen with twelve pillars, and with four in the center as large as two men could stretch around. The floor was made of large, smooth stones like the baths of Europe. They have a hearth made like the binnacle* or compass-box of a ship, in which they burn a handful of thyme to keep off the heat, and they can stay in there just as in a bath. The top was on a level with the ground. The houses belonged to the women, the estufas to the men."

1. Various stories have arisen in reference to the religious customs. One is that the eternal fire was kept alive by the priests who never left the estufa, and the superstition was that if the fire went out the life of the people would become extinct. Another is that Montezuma, the great chief, had predicted the coming of the white men, and that when they came the customs would be changed. This story was connected with the figure of the tree, which was found inscribed on the rock near a sacred spring, but seemed to be planted with branches downward; the prediction was that this symbolized the condition of the people after the whites should arrive.



MONTEZUMA.

This story is similar to the one which is so common among all the American tribes, uncivilized and civilized, and which recounts the exploits of a person who is represented as actually having lived among the people but was a sort of Culture hero, a Shaman or Medicine Man, and at the same time a Divinity similar to the Messiah of the whites. The tradition is that his name is "Poseyemo,"—"Moisture from Heaven." He was a poor boy, but was chosen chief, and soon began to astonish the people with prodigies. His fame spread and he exercised a power over many of the Pueblos, very much as the character called "Pope" did during the rebellion against the Spaniards, in 1780, and as Tecumseh and the prophet did in later times. Mr. Cushing identifies him with the Poshamka of the Zunis, who is supposed to have appeared in human form poorly clad, and therefore rejected by men, but who taught the ancestors of the Zunis, Taos, Oraibi, and Coconimo Indians, their agriculture and other arts, their system of worship by plumed sticks, organized their secret societies, and then mysteriously disappeared towards his home in "the mist enveloped city." He is called by the Queres, "Our Father from the East, that cometh together with the sun." He is still the auditor of

* The binnacle or box of a compass: This refers probably to the circular shape of the fireplace or hearth. See translation of Castaneda's narrative by Winship—14th annual report Bureau of Ethnology, p. 522.

prayers, the invisible ruler of the spiritual or "unseen city," the "Finisher of our lives." The folk lore connected with him embodies considerable ancient history of the tribes, especially of the Tehuas on the Rio Grande.

Another story is the one which was told to J. W. Gregg. It is that a gigantic snake was kept in the estufa and was fed with human victims. This story probably came from the custom, which is still in vogue among the Zunis, and which also may have prevailed among all the tribes, of keeping a snake effigy in some of the estufas as a symbol of the rain-god. There was also a story told to Gen. Simpson about the deluge which swept the valley of the Zunis, and threatened to engulf the village itself, which was then on the summit of the mesa; but the people were directed to let down a youth and a maiden from the summit of the cliffs as a sacrifice to the spirit of the water; when they reached the water the flood subsided, but left a mark high up in the side of the cliff which may be seen to this day. The youth and maiden were transformed into stones, and the images of them are still pointed out on the summit of the cliff near by.



TRANSFORMED YOUTHS.

These stories give us hints as to the superstitions which formerly prevailed; they however very poorly represent the religious systems of the Cliff Dwellers or Pueblos.

The story of creation is, however, more instructive. This is found among all the Pueblo tribes, including those on the Rio Grande and on the Gila, and the Zun's and Moquis and others. It prevails among the so-called wild tribes, the Navajos and the Pimas, and even the Apaches. It will be well to follow up this story as told by these different tribes, and see how much there was in common between them and yet how many things were different. The contrast is due to the ethnic affinities and training of the tribe, and especially to the coloring which was drawn from the scenery, but the resemblance shows that the story was transmitted from tribe to tribe.

The following is the Navajo version as told by Dr. W. Matthews:

"Our fathers dwelt in four worlds before this. In the first it was dark and small; in the second they found the sun and moon and different colors—south, blue light; west, yellow light; in the north, white light; in the east, darkness. In the third world they found a land bounded like

their present home, by four mountains—San Mateo, Salt Lake, San Francisco and San Juan. The flood came and took soil from all the four mountains and placed it on the mountain of the north, which began to grow higher and higher, and the people climbed upwards to escape the flood, the water following them. They planted on the summit a great reed, and through this they escaped. In the fourth world they found the mountains and seas the same as in the third world, but a great river ran through the center; on this they settled. When they came to the fifth world they found a great lake, and on the lake four swans—a black swan in the east and a blue swan in the south. Still they were in trouble for they could not reach dry land; they prayed to him of the darkness in the east; he with his horn cut through the cliffs and he made a canon through which the waters flowed away. The land was still soft and muddy; they prayed to the four winds which came and blew a gale, and the ground became dry so they could walk on it. The sun and moon went into the heavens—one began to shine in the day, and the other in the night."

Another story involves the creation of the light and rising of the sun:

"The light was made from a white shell and a greater light from the turquoise. Eagle plumes were placed upon the turquoise and the shell, and a crystal was held over them and the plumes were lighted into a blaze. On the surface there were twelve men living at each of the cardinal points, and two rainbows crossing one another made the canopy of the heavens. The heads and feet of the rainbow almost touched the men's heads. The first task was to raise the sun in the sky, for it was too near; it burned the vegetation and scorched the people. They made the attempt, but the sun tipped. At last they called upon the twelve men at the cardinal points and said, 'Let us stretch the world.' The men blew and stretched the world and lifted the sun and saw it rise beautifully, and then went back and became "the holders of the heavens."*

Among the Navajos the story was symbolized by the Kiva, which was always in the shape of a hemispherical hut which had the humanized rainbow painted upon its surface—the feet upon one side and the head upon the other—the doorway being made up of different colored skins, white representing the daylight, the blue the dawn.

The Zuni tradition is interesting. It is as follows:

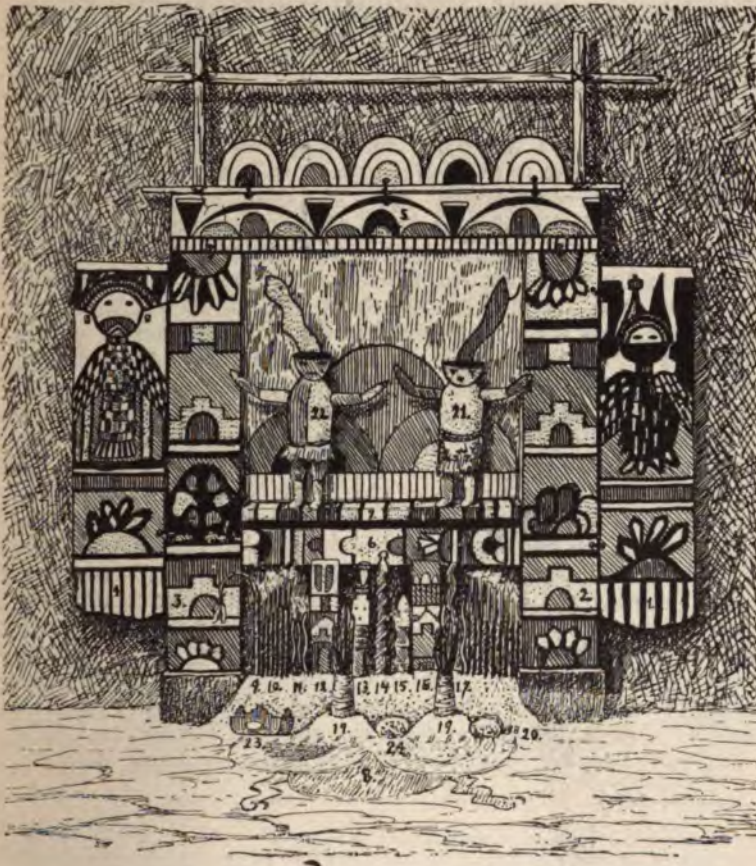
"The people were led up from the lower world by two war-gods—Ahaihta and Maasewe, twin brothers, sons of the sun—who were sent by the sun to bring the people to his presence. These gods occupy important positions in Zuni mythology.

"Another story is that a brother and sister dwelt together on a mountain, but were transformed—the youth into a hideous looking creature, the maiden into a being with snow white hair. The youth descended the mountain, swept his foot in the sands of the plain, immediately a river flowed and a lake appeared; in the depths of this lake a group of houses, and in the center of the group an assembly house or a Kiva, provided with many windows.† This lake contains the waters of everlasting happiness and the village is the final abode of the blessed, and the passageway to it is through the mountains."

* This expression reminds us of the Scandinavian myth of the dwarfs who hold up the heavens.

† The first of the Zuni to cross this river were the bear gens, the corn gens, and the sand hill crane gens.

II. A more reliable source of information is that which is furnished by the secret societies which various American explorers have been permitted to join, but from which the Spaniards were excluded. These societies probably have survived from prehistoric times, and perpetuate the myths then prevalent. Each of these different societies has its own lodge or estufa; thirteen among the Zunis; eight among the Sias; seven among the Tusayans. They are named after animals, such as snakes, ants, birds; beasts of prey, such as bears, cougars, wolves; and are subdivided into bands, which were represented as cardinal points which held esoteric relations with the cloud peo-



EMBLEMS OF THE MAMRAU SOCIETY.

In the screen of the Walpi we find the same symbols of the rain clouds, the sky arches the lightning, serpents, and sun emblems, corn maids. These symbols of widely different societies refer to the fertilization, growth and maturity of corn, and the effect of the rain clouds and the nature powers. There are representations of "supernaturals," male and female culture hero and the corn maid.

ple, also with the sun and moon, with the earth and the elements. The members had their bodies marked with emblems which represented these various objects, such as crescents, stepped figures, spots, circles, etc. They have their altars and sand paintings, their theurgic rites, their medicine ceremonials and rain ceremonials, and their mythologies, which are very carefully guarded.*

These ceremonies consist in the use either of live serpents or of serpent effigies, in connection with rain symbols, and various personages who are tricked out in strange costumes and paraphernalia, and were generally celebrated in the estufas. It was at the initiation of the children into the clan that the most impressive ceremonies were observed. At this time the priests carried the snake effigy from the springs of water up to the pueblos and deposited it in one of the estufas, to be kept over night; in the morning it was carried by certain persons who represented the cloud divinities and supernatural beings, with great ceremony and was held over the opening in the roof of the kivas, and water poured through it into the vessels which were held by other priests, as they stood on the floor of the kiva below, and distributed it to the children at the time of their initiation. This water was in a measure sacred, and was regarded as the water of life, for it was supposed to come from the clouds, and through the mouth of the cloud divinity. It was through this same snake effigy that all the seeds which were to be planted, and were to furnish food for the people, were poured into the baskets which were held by the priests as they stood below the opening in the roof of the kiva. These seeds were also carried to the children as they sat upon the ledges, beside their grandparents or the elders of the tribe, and were considered as signs of the favor of the cloud divinity. Surrounded as they were by the fetiches or animal effigies, which symbolized the divinities of the sky or the gods of the celestial spaces, the children, from the earliest age, learned to look at the powers of nature as emblems of divinity and full of the supernatural beings. They were taught that the breath which came to them from the prayer plume, as they sat in the sacred place, was the very breath of the divinity, and they must breathe this in if they are to be received or have entrance into the beautiful city, or pueblo, beneath the water of the sacred lake.†

Captain Bourke speaks of the Apache medicine shirt as

* (These societies have been described at great length by J. Walter Fewkes and Mrs. M. C. Stevenson, Dr. W. Matthews, F. H. Cushing, and others. The Dakotas have secret societies which are religious in character and are distinguished by the name of animals; they also have their lodges, but they are constructed of poles covered with skins, or with sods above the surface, while those of the Zunts, Moquis, and other Pueblo tribes, are constructed of stone or are excavated out of the rocks. It seems probable that there were societies similar to these among the cliff-dwellers, as their rock-shelters, shrines, rock inscriptions and estufas seem to embody the same myths which are dramatized in the ceremonies by the living tribes.)

† This ceremony has been described by J. Walter Fewkes at great length, as existing among the Tusayans. XV. Annual Report Bureau of Ethnology, p. 253. Also by Mrs. Stevenson, as common among the Sias.

containing figures of serpents which show that there was a similar superstition about the serpent among this wild tribe, though there was no record of such a ceremony or even of any kiva or estufa resembling those common among the Pueblos. This will show that whatever may be said about the Navajos, the Apaches belonged to a different tribe and stock from the cliff-dwellers, and were probably their enemies from time immemorial.

The snake dance was another religious ceremony which was observed in connection with many of the secret societies. This was a ceremony which symbolized the religious beliefs of the natives. The snake was supposed to be the symbol of the rain-god, so the live snakes had a supernatural power and a peculiar charm in bringing rain in its season. There were many other ceremonies celebrated by the Tusayans, Zunis, Seris and Navajos, all of them under the charge of the secret societies and at certain fixed seasons of the year. These ceremonies were also practiced by the cliff-dwellers. There were, to be sure, not the same conveniences for observing them, for the houses were high up on the cliffs, yet it is not unlikely that processions were led out from the cliffs and down the ledges, along the valleys to the various shrines where snakes and other animals are still to be seen inscribed upon the rocks. Mr. C. F. Lummis has described a race at Acoma in which the runners followed one another along the front of the pueblo, which stretched for a thousand feet in length, and then down the steep pathway. Mr. Fewkes has described a ceremony called the flute dance, and another called the antelope dance, both of which were out of doors and had to do with the seasons and the operations of nature.

Mr. James Stevenson speaks of the Medicine Lodges or Sweat-houses of the Navajos; they are placed above the ground and are mere lodges, but the sand paintings which are wrought in their ceremonies are very instructive and suggestive. The lodges differ much from the estufas and symbols of the Tusayans and they suggest an entirely different form of religion and a separate source of religious development.

III. The estufas, or kivas, are very instructive in reference to the religion of the Cliff-dwellers. It has been claimed by some that the kivas, or estufas of the Cliff-dwellers were the earliest buildings of the Pueblos, and that they perpetuate the form of hut or house in which the Cliff-dwellers lived before they adopted the pueblo style of architecture. As the villages grew and became compacted into great villages or Grand Houses, the estufas changed their shape and came to assume the square or oblong shape, similar to that of the Pueblos. They have been the objects of curiosity with all explorers, and some parts of the estufas have been a great puzzle.

Mr. W. H. Holmes, as early as 1875, noticed the circular rooms in the midst of the cliff-dwellings, and called them

estufas. He gave a full description of the one on the Rio de-Chelly, and speaks of the box-like ledges in the wall, also of the narrow opening which he imagined was the entrance to the estufa, though it has since proved to be an air chamber for ventilation. He did not connect the estufas with the rock-paintings or shrines, nor did he ascribe the circular form to the mythology which prevailed among the cliff-dwellers.

It was reserved for the later explorers, such as Mr. F. H. Chapin, Mr. Nordenskjold, and Mr. Mindeleff, to discover the existence of the ledges and the piers, and to perceive the use of the opening in the wall, which was really a flue or air-chamber, designed to ventilate the room and carry off the smoke, rather than as an entrance. Mr. F. H. Cushing has given the best interpretation of the different parts of the estufa. He says that the



ESTUFA IN ACOWITZ CANON.

different piers which are found in the walls and which separate the ledges, represent the six supports of the sky, and that the whole estufa was built so as to be symbolic of the sky with its four corners, and the zenith and nadir. The circular form represented the sky; the roof and fireplace represented the elements above and below; and the opening in the floor represented the place of beginning or "emergence." Thus the mythology of the cliff-dwellers was embodied in the estufa. This mythology has been described by Dr. Washington Matthews: it is to the effect that at the earliest date the human beings were confined in a dark cave below the ground; but the divinities took pity upon them and let the light, by degrees into the cave, in answer to their prayer. The people then managed, by the aid of certain animals, to secure an opening in the roof, and by means of a reed which was inserted in the opening, or, according to another version, by means of a ladder made from a pine tree, were able to climb up

from the dark cave. This occurred four times, the abode of the people becoming lighter and lighter as they ascended. There is another part of the story in which it appears that the waters of the deluge followed the people up through the opening in the cave and flooded the valley, and it was only after a long time that the land became dry enough for the people to cross it. The mythology of the Navajos and other living tribes may be used to explain certain parts of the estufas, but care should be taken lest we mingle the later myths with the earlier, and ascribe the white man's traditions to the aborigines. We may say that the architecture of the estufas of the cliff-dwellers, with its six piers and its ledges, its circular place in the center where was the fire, its ladder which was placed over the fire, and the double opening to the roof, embodied the myth of creation as well as the su-



ROUND HOUSE IN ACOWITZ CANYON.

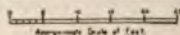
perstitutions in reference to fire. It reminds us of the construction of the rotunda among the Muskogees of the Gulf states, in which the fire was kept burning while the council was being held, the spiral column being to them a tribal symbol. It also reminds us of the temples of the Mayas which were placed on the summit of a pyramid guarded by snake effigies which seemed to descend from the sky and symbolized the rain-god. There is no doubt that the estufa, or sacred chamber, was used by the Cliff-dwellers to commemorate their past history as well as to remind them of their dependence upon the rain divinities, inasmuch as ornaments or painted bands have been discovered on the walls of some of them.* That they were places of social resort for the men is evi-

* The piers and ledges are always present and constitute the chief features of the kivas of the Cliff-dwellers. The kivas of the tribes to the south, such as the Tusayan and the Zunis, do not seem to have retained these piers.

dent, from the fact that they are placed near the cliff-villages. They were used probably as council houses as well as for the meeting of the secret societies, but they were also used as a workshop by the industrious and as a lounging place by the idle. There are still traces of the two classes of kiva; one contains the sipapuh or place of emergence, the other class has piers or ledges. The kiva with the sipapuh is not found among the cliff-dwellers, that we know of, but is found among the Zunis, Moquis or Tusayans, and so suggests a different origin. Another interpretation of the estufa, found among the cliff-dwellings, is that the walls are divided into ledges and square pillars or piers, six in number, with design to represent the four cardinal points, and the zenith and nadir, as well as the four caves through which



Plan of 1st CLIFF DWELLING Mancos Cañon.



the ancestors of the people came before they reached the surface of the earth. The piers may possibly represent the four mountains, which, according to the mythology, were recognized before they reached the surface and afterwards constituted the bounds of their habitat. If this is so, it shows that the Cliff-dwellers and the Pueblos occupied the same general territory in pre-historic times and had the same mythology. A myth to the same effect prevails among the Jicarilla Apaches, a tribe which is situated far to the north, near the head waters of the Rio Grande, and is of diverse language and origin from the Pueblos, but was once located near the Pueblo village of Taos; they retain a similar myth about the flood. This tribe mention the four mountains—one west of the Rio Grande, one to the east, and one to the southwest, also the Sierra Blanca, to the southeast. He

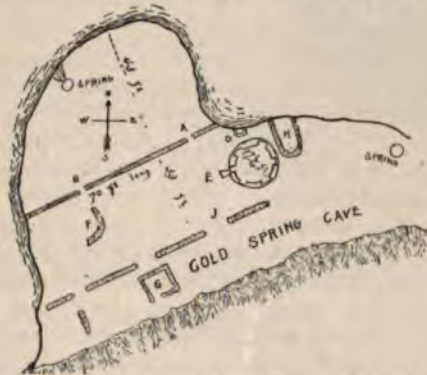
The cut represents the six room cliff village called by Mr. Chapin the Sandal Cliff House. It was the place near which the Wetherills discovered the largest number of relics.

made also four great rivers and gave them their names—in the north, the Napeshti, "flint arrow river" (the Arkansas); in the west, the Chama. He made other rivers but he did not give them names and he gave the country to the Jicarillas.* The fact that this myth or tradition of the creation is associated by this tribe with the pueblo at Taos, explains the word which was placed upon the map given by the Indians to Gen. Whipple; this word was Sipapu, or place of emergence, and the story was that from this place the Pueblo tribes originated.

It is to be noticed that the location of the kivas of the Cliff-dwellers generally are separate from

the domestic apartments. § Sometimes they are placed on the summit of the mesas above the cave dwellings, and occasionally they were on the same ledge but at one extreme of it, though on the same level with the houses. In some villages the estufa

was in the very center of the village; the entrance to the village was close by. The usual method was to place the kivas on the sides of the cliff with the openings in the roof on the level with the ledge, so that they could be entered from the top without going up to the



CLIFF VILLAGE WITH ESTUFA AND SPRING IN A CAVE.



CLIFF VILLAGE WITHOUT ESTUFA.

apartments or going down the cliffs.

They were often in front of the houses and thus might serve as quasi defenses for the villages, though there were towers

* Anthropologist for July, 1898, p. 197. Article by James Mooney on the Jicarilla Genesis.

§ This cut represents a cluster of houses and an Estufa and some walls found in a cave in Butler's Wash by Lewis W. Gunkel. The Estufa seems to be the most important part of the settlement. The other shows the difference between temporary retreats and permanent villages as the Estufa is always present in a permanent village, but rarely in a summer resort.

separate from the kivas which served as citadels, and occasionally rooms high up in the cliffs where the warriors gathered and shot arrows through the loop-holes in the walls. There seems to have been a division of the people into several classes, each of which had separate apartments; these were as follows: 1. The women and children were gathered into the square rooms, which were built compactly and clustered together on the mesas or along the ledges in the cliffs. The children are supposed to have occupied the area back of the houses, where they felt comparatively or quite secure, inasmuch as they were hidden from sight by the houses, and were surrounded by those who were constantly on the alert and were interested in their safety. The weaving and the pottery making and basket making fell to the young women, and the cooking or baking the tortillas fell to the older women. The apartments varied in their shape, location and character; they included the storehouses, or caches, which sometimes were placed in the sides of the cliffs, at a distance from the houses. 2. There seems to have been a class of warriors or "braves" composed of the rank and file of the people, who were perhaps directed by the chief or war captain. Some of these were placed in the towers, others in the loop-hole forts, and still others scattered among the different apartments. 3. There was also a religious class, composed of the priests or medicine men, who presided over the sacred ceremonies; the secret societies, their officers and members, each of which had its own lodge and its own symbolism. 4. To these should be added the young men and boys and the men who had no especial work or office. These remained in the kivas during the night and also spent much time in them during the day.

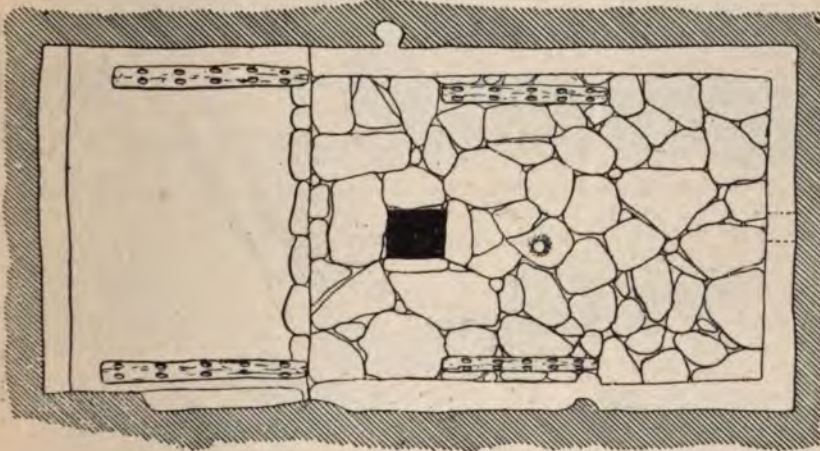
The manner of constructing the kiva was also very significant, as each part was supposed to be sacred, and so the utmost care was observed. The whole structure, when finished, was consecrated as most modern temples and churches are. There have been many descriptions of this, though that given by Mr. Ad. F. Bandelier is the most definite, which we quote:

"The ancient kivas of the Cliff-dwellers were generally round, had the fire in the middle, the entrance above the fire, but the seats were deep ledges or shelves, which symbolize the six spaces. The Sipapuh or opening has not been discovered thus far in these kivas, though the air chamber or passage, which is common, is found in nearly all. The ceremonial room among the Tusayans is separated from the dwelling, and is subterranean, but generally located at points where the depressions already existed.

The position of the kivas, as related to the pueblos, seemed to vary in different localities. Among the Cliff-dwellers, as Nordenskjöld has shown, they are frequently placed in front or to one side of the dwellings. Among the ancient pueblos on the Chaco, they were placed in the court and along the lines of the houses, and generally raised above the surface; among the Zunis they were sunk beneath the floors in the midst of the apartments of the pueblos; among the Tusayans they were sunk beneath the surface of the rock. Mr. Bandelier says: "At the present time some of the kivas of the Zunis occupy marginal positions in the cell clusters, just as in many ancient examples."

These depressions were near the margins of the mesas. The construction of their villages on the rocky promontories forced the Tusayan builders to sacrifice the traditional and customary arrangement of the kivas within the house inclosed courts of the pueblo, in order to obtain properly depressed sites.

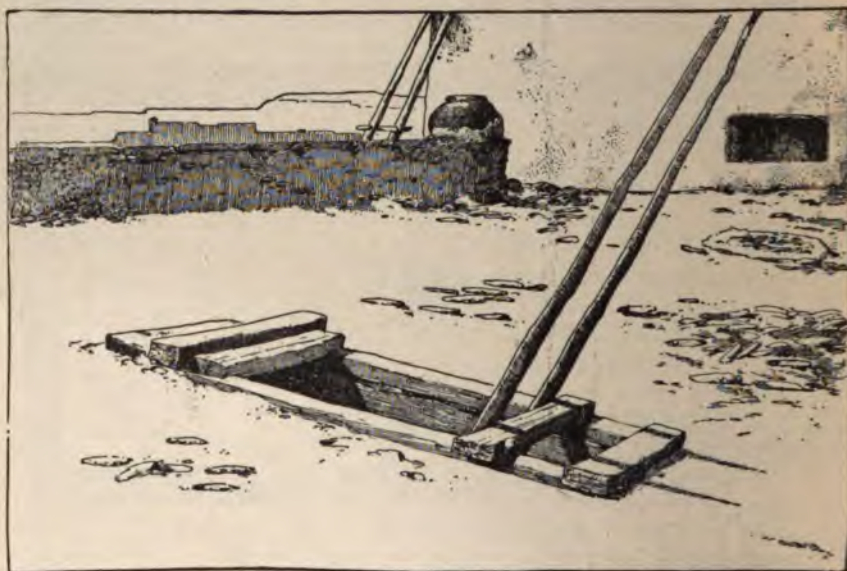
"In such cases the broken out recesses in the upper rocks have been walled up on the outside, roughly lined with masonry within, and roofed over in the usual manner. In many cases the depth of these rock niches does not project above the level of the mesa summit, and its earth-covering is indistinguishable from the adjoining surface except for the presence of the box-like projection of masonry that surrounds a trap door and its ladder. Examples of such subterranean kivas may be seen at Walpi and elsewhere. Even when the kiva was placed in the village courts or close to the houses, naturally depressed sites were still sought in conformity to a general plan of ancient practice. The kivas were supposed to perpetuate the tradition of the creation, and the underground chambers symbolized the caves



FLOOR OF THE KIVA.

through which the ancestors of the race passed on their way to the surface. The native explanation is as follows: In the floor of the typical kiva is a sacred cavity called Sipapu, through which comes the beneficent influence of the deities or powers invoked. According to the accounts of some of the old men, the kiva was constructed to inclose this sacred object, and houses were built on every side to surround the kiva and form its outer wall. In earlier times, too, so the priests relate, people were more devout, and the houses were planned with their terraces fronting upon the court, so that the women and children and all the people could be close to the masked dancers as they issued from the kiva. The spectators filled the terraces, and sitting there they watched the dancers dance in the court, and the women sprinkled meal upon them while they listened to their songs. Other old men say the kiva was excavated in imitation of the original house in the interior of the earth, where the human family were created, and from which they climbed to the surface of the ground by means of a ladder. The hatchway is also constructed after a fixed plan. Near the center of the kiva two short timbers are laid across the beams about five feet apart, leaving an open space of about five by seven feet in the roof or ceiling. The hatchway is then raised to the surface of the the ground, and over the top of it short timbers are placed, one end higher than the other, so as to form a slope; upon these timbers stone slabs are laid for cover, leaving an open space

about $2 \times 4\frac{1}{2}$ feet, which is the only outlet for the kiva. The reason for this construction of the hatchway is to give more height to the room above the fire, which is always placed immediately beneath the hatchway. The roof being finished, a floor of stone flags is laid and at one end is raised a platform some ten or twelve inches high, extending about one-third the length of the kiva, and terminating in an abrupt step just before coming under the hatchway. (See Figure.) On the edge of the platform rests a long ladder, which leans against the higher side of the hatchway and projects ten or twelve feet in the air. Upon this platform the women or visitors sit when admitted to witness any of the ceremonies, just as the women stand on the house terraces to witness a dance, and do not step into the court. In the main floor a shallow pit, about a foot square, made for a fireplace, is located immediately under the hatchway, and is usually two to three feet from the edge of the second level of the floor. Across the end of the kiva on the



OPENING TO THE KIVA.

main floor, a ledge of masonry is built, usually about two feet high and one foot wide, which serves as a shelf for fetiches and other paraphernalia during stated observances. In this bench or ledge is a small niche or opening which is called the katsina house, for the masks are placed in it when not used by the dancers. This is called the altar end of the house.

In the main floor of the kiva there is a cavity about a foot deep and eight or ten inches across, which is usually covered with a short, thick slab of cottonwood, whose upper surface is level with the floor.* Through the middle of this short plank and immediately over the cavity, a hole of two or two and one-half inches in diameter is bored. This hole is tapered, and is accurately fitted with a wooden plug, the top of which is flush with the surface of the plank. The plank and the cavity usually occupy a position in the main floor of the kiva. This feature is the Sipapu, the place of the gods, and the most sacred portion of the ceremonial chamber. Around this spot the fetiches are set during a festival. It typifies also the first,

* The figures illustrate the general plan of building the roof, ceiling, walls, floors, fireplace seats or ledges, and the openings or place of entrance of the modern kivas.

world of the Tusayan genesis and the opening through which the people first emerged. It is frequently spoken of at the present time."

"The essential structural features of the kivas above described are remarkably similar, though the illustrations of types have been selected at random. Minor modifications are seen in the positions of many of the features, but a certain general relation between the various constructional requirements of the ceremonial room is found to prevail throughout all the villages.

"The consecration of the kiva is also significant. When all the work is finished, the kiva chief prepares a "baho" and "feeds the house," as it is termed; that is, he thrusts a little meal, with piki crumbs, over one of the roof timbers, and in the same place inserts the end of the baho. As he does this, he expresses the hope that the roof may never fall and that sickness and other evils may never enter the kiva. It is difficult to elicit an intelligent explanation of the theory of the baho and the prayer ceremonies in either kiva or house construction. The baho is a prayer token; the petitioner is not satisfied by merely speaking or singing his prayer; he must have some tangible thing upon which to transmit it. He regards his prayer as a mysterious, impalpable portion of his own substance, and hence he seeks to embody it in some object, which thus becomes consecrated.

"The prayer plume, or 'Baho,' consisting of four small feathers attached to willow twig, is inserted in the roof of the kiva in order to obtain the recognition of the powers. They are addressed to the chiefs who control the paths taken by the people after coming up from the interior of the earth—a yellow to the yellow cloud and to the west; a blue feather to the blue cloud and to the god of the south; a red feather to the red cloud and to the east; a white feather to the white cloud and to the north. Two separate feathers are addressed—one to the zenith, the invisible space of the above, and to the nadir, the god of the interior of the earth and the maker of the germs of life.

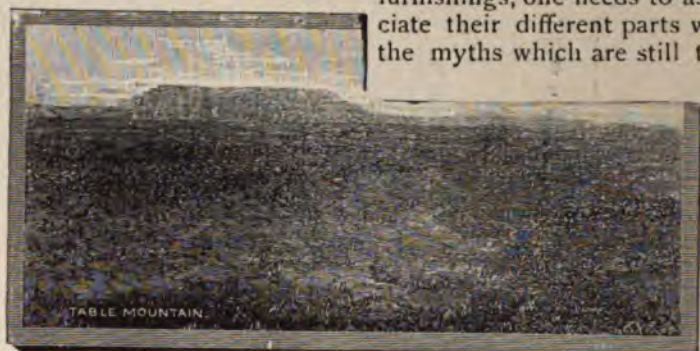
The shape of the kivas varied with the different tribes in the different districts, each tribe had myths traditions and customs peculiar to itself. With the Cliff Dwellers the style was as we now see to build it, in a circular shape with ledges and piers. This, however, was modified and changed so as to place a circular roof in a solid square block of stone—the corners being filled in with rubble. The entrance in both of these was from above, through the roof.

There is a third form found in various parts of the country which consists of a circular tower—sometimes built in one and sometimes two stories—the interior divided into a series of cells arranged in a circle, with a circle in the center for the fire, the cells suggesting that certain ceremonies unknown to us were celebrated. A fourth way of building the kiva is the one which is well known from the specimen seen on the Gila, and which some think was used as a temple if not as a kiva, the system of worship being different from any other. All of these different shaped kivas have been studied with the idea of tracing the line of development from the original rude hut to the conical stone estufa, and from this to the square structure, and finally to the two-story temple, each stage of development and each new shape of the temple having produced a new form of building.

A still more fruitful line of study would be to compare these religious houses with the various structures found in Europe,

such as the open air temples, or Cromlechs, the square tombs or Dolmens, the circular towers and the conical treasure houses, and notice their correlation to the religious system in vogue, and how thoroughly each particular stage of progress is exhibited by them. We would say, however, that nowhere in the world has there been exactly such a religious house as the kiva is, and nowhere has there appeared any such form of worship or system of mythology as was introduced in it. The structure is as unique as the system itself, and both together serve to make the Cliff dwellers and the Pueblos, their successors, a very remarkable people, though no more remarkable than the mound builders on one side or the ancient Mexicans on the other.

IV. In reading the descriptions of these estufas and their furnishings, one needs to associate their different parts with the myths which are still told



TO-YO-A-LA-NA, THE SACRED MOUNTAIN OF THE ZUNIS.

by the aborigines of the great plateau; but he needs to remember that the myths vary in their character, as much as do the estufas for those which are told by the Navajoes bring one class of divinities into prominence, and those told by the Zunis another, those by the Apaches still another, each tribe having its own pantheon and as well as its own mythology.

It will also be noticed that while the tribes regarded the mountains and the lakes as the homes of their divinities, yet each had its own Olympus, or rather its own group of mountains in which the divinities were supposed to dwell—the four prominent peaks always being pointed out as constituting their abode. It cannot be ascertained whether the Cliff Dwellers worshipped the mountain divinities, as did the Navajoes, or the personified divinities, such as the Zunis now worship, but they undoubtedly peopled the scene with beings, which were real to them, and which furnished even more sense of power and protection.

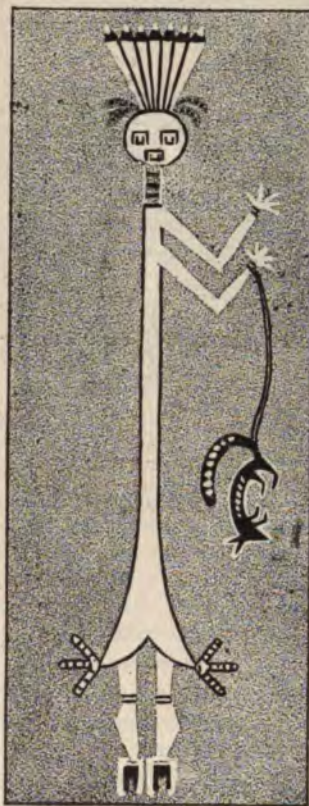
It will be remembered that the scenes with which they were surrounded were very remarkable and they must have had a great influence over their superstitious minds. They

could not have climbed to their strongholds in the sides of the cliffs without feeling that their fields were liable to depredations. There must have been a sense of helplessness amid all these dangers. The scenery was also likely to impress them with a sense of awe wherever they went. All of the travelers have spoken of the many points, where distant views can be gained—filling the mind with a sense of grandeur and beauty. Others have spoken of the views which are presented by the deep canons. We may judge from the myths, which are extant among the Navajoes, what a strange effect the colors of the rocks and the sky had upon their minds. Those colors were by the Navajoes embodied in their sand paintings and made to show the drapery with which the mountain and sky divinities were clothed. The figures contained in the sand paintings are explained by the myths which, are extant among different tribes, such as the Navajoes, the Sias, Zunis and Moquis or Tusayans. Their divinities were very much alike in their character, all having sprung from an original pair, though their birth and their activities were within the region which the tribe called its own.

The nature powers were personified by each of the tribes. The clouds, the mountains, the lightnings, the plants, the sun beams and the spray, all were represented as supernatural beings, who were clothed with beautiful colors similar to those of the sky and rocks and the sunlight.

Shells, crystals and mosses were used to decorate the persons of their gods—and all were represented by their sand paintings, the myths which are still told, giving an explanation of the paintings. It is interesting to take these myths and compare them with one another, and with those told by other nations, Greeks, Scandinavians and Hindoos.

There was in all a first pair, but generally two brothers are very prominent and serve as the chief divinities. These brothers among the Navajoes have the strange names, Hasjelti and Hostjoghon. They were born on the mountain where the



A NAVAJO GOD.

clouds meet, from the union of the sun-god and the shell-woman. These were the great "Song-makers." They gave songs and prayers to the mountains, and clothed the mountains with the colors and clouds which they now bear. They float on the sun-beams which are arranged into a raft in the form of a cross and which has the different colors of the rainbow, but edged with the foam of the ocean. They visited the different mountains: first, they visited Henry Mountain in Utah, and gave to it songs and prayers, and gave to it the color it bears. They next went to Sierra Blanca in Colorado, and gave



A ZUNI SKY GOD.

eagle plumes on its head. Hasjelti is the great mediator. He communicates through feathers, and to him the most important prayers are addressed.

He is represented in the sand paintings as clothed in a white garment, wearing white moccasins and having on his head white eagle plumes trimmed with fluffy down from the eagle's breast and carrying in his hand the squirrel bag. He is attended by certain gods, which are called Naaskidi. These are hunch-backed; but their backs represent the black clouds and so are black, streaked with lines of white sunlight and trimmed with white feathers. They bear a lightning staff in their hand which is their great ensign of power.

In many of the sand paintings there are gods which stand upon a cross, making it to resemble the Suastika. They are surrounded by the humanized rainbow. They watch over the plants which draw their sustenance from the central waters. They wear around their bodies, skirts of red sunlight adorned with sunbeams. They have ear pendants, armlets and bracelets of turquoise and coral. Their arms and legs are black, but

it songs and prayer and a clothing of white, with two eagle plumes. From here they went to San Mateo (Mt. Taylor) and gave it songs and prayers, and dressed it in turquoise. (This is the color the mountain now has.) They next went to San Francisco Mountain in Arizona, and dressed it in abalone shells with two eagle plumes—(Clouds which float above the peaks) and gave it songs and prayers. They then went to the Ute Mountain and dressed it in black beads with two

streaked with white, symbolizing the zigzag lightning across the black clouds. In one case, four goddesses are attended with four plants—the cornstalk and the four plants make a double cross, the plants one and the goddesses another—eight arms to one cross. These are all colored and represent the different points of the sky; that on the east is white and has by her side the white cornstalk; the goddess of the south is blue, and has by her side a blue beanstalk; the one on the west is yellow and has a yellow pumpkin vine by her side; the body of the goddess of the north is black and has the black tobacco by her side. These sand paintings were made by the Navajoes and show the religion of that tribe which consisted in the worship of the mountain divinities. It differed from the religion of the Zunis, the Sias and the

Tusayans who worshipped the sky and cloud divinities and represented them differently. It appears that the Navajoes rarely gave wings to their gods or goddesses, but generally represented



ZUNI SYMBOLS.



ZUNI CLOUD BASKET.

them as sailing upon rafts of sunbeams while the Zunis gave wings to their gods and placed turreted caps on their heads, though the humanized rainbow generally spanned the sky above, and the lightning hurler was below. They are bird men, but are attended by animal gods. They had not, however, reached that stage in which personal anthropomorphic gods were worshipped as they were in Central America and Mexico.

Now, the question arises, which form of religion did the Cliff-Dwellers possess? Was it that of the Navajoes which consisted in the

worship of the mountain divinities or that of the Zunis, which consisted in the worship of the water divinities? In answer to this, one can only refer to the symbols which are found upon the rocks near the Cliff-Dwellings. Thus far no image, with knife-bladed wings has been found either inscribed upon the rocks or the pottery relics of the Cliff-Dwellers, nor has there

been seen any humanized goddesses standing on crosses or rafts, and as yet not even the O-mo-wuh, which is the symbol of the rain cloud.

This winged figure called the "Priesthood of the Bow," is very suggestive.

It reminds us of the gods of the Assyrians, many of whom have birds' heads and wings. It also reminds us of the Egyptian symbol of the winged globe, as the head is like a disk and the wings are always spread. There are winged figures among the tribes on the northwest coast. Yehl, the chief god, is a bird with wings outspread, which contends with the whale.

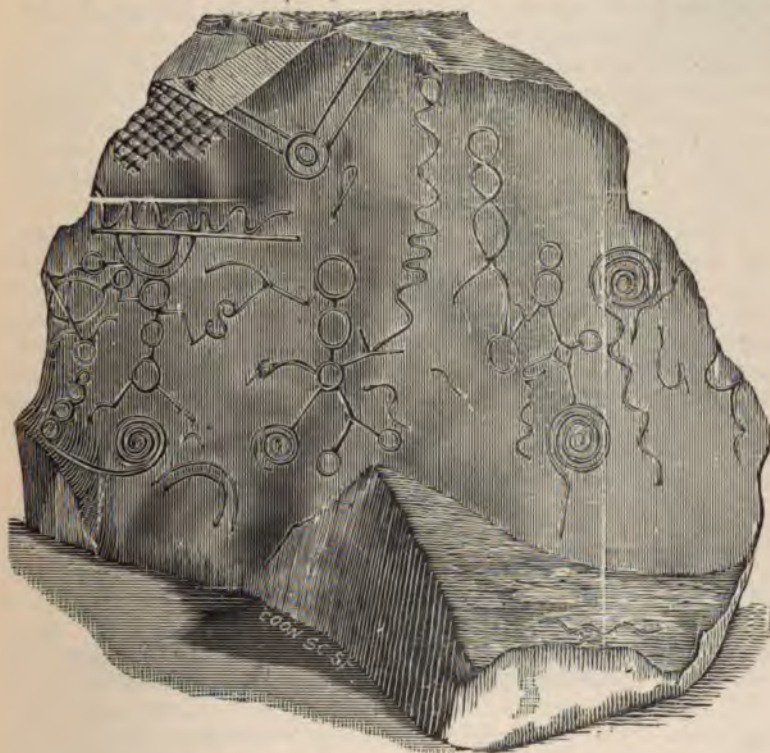
The Dakota and Algonkin tribes also had as their chief divinity, a thunder-bird, who was a sky-god, but he was the eternal foe to the serpent who was a water-god. The Zuni-bird-god was,



CLIFF-DWELLERS SYMBOLS.

sometimes, a friend to the serpent-god, as both were united in bringing the rain clouds which water the earth and so help the crops. The Zunis have also symbols of the water animals, frogs and lizards and tad-poles, as is shown in the cuts. As to the divinities of the Cliff-Dwellers there are few means of learning about them except as we study the rock inscriptions, and the symbols contained in them. There are few symbols which resemble those found elsewhere, such as the suastika which is the

symbol of the revolving sky, the coil which is the symbol of the whirlwind, the cross with arrows which is like a weather-vane, as it shows the cardinal points, the consecutive circles and the crescents which are symbols of the sun and moon and also the circle with crooked rays which is the squash flower. There are in the inscriptions many nondescript figures; as for instance, snakes with human heads and arms; lizards with serpents for



ROCK INSCRIPTIONS IN ARIZONA.

legs; centipedes with tapering bodies; circles with lightning serpents issuing from them; lizards with claws projecting from the head, reminding us of some of the figures found on the Maya codices; serpents with legs and circles for bodies and human heads. These are all represented in the cut which contains a selection from the different rock inscriptions. It will be noticed that there is no rain symbol, called the O-mo-wuh, nor is there any cross with human figures on them, nor even any prayer plumes, but there are many human figures. The nearest approach to any known symbol is found in the concentric circles

which are colored after the usual colors of the cardinal points, and the great number of human hands also colored. The most that we can say is, that those animals which generally are associated with water, such as snakes, lizards, frogs, centipedes, dragon-flies, and water-skates, are very numerous, thus showing that the water was symbolized rather than the sky. Still we may say that there is considerable resemblance between these rock inscriptions and those found at Oakley Springs, Arizona, as the same animals may be recognized in each.

In the Arizona inscriptions, the serpents seem to be uncoiling from the sky and descending to the earth, thus symbolizing the rain, while the coils near by symbolize the whirlwind and the looped squar: above symbolizes the four parts of the sky, the same as it does in the shell gorgets found in the mounds of stone graves of Tennessee.

Figures of snakes are very common among the pictographs on the Mesa, near the Moqui villages. One of these is ten feet long. The head is triangular, with two projecting tongues. The most remarkable specimen is one which is associated with other symbols of the sun, of the clouds and rain. In this snake there are six udders which symbolize the legend, that all the water and blood of the earth come from the breast of the great serpent. The neck and body are decorated with parallel lines, and arrows, the duck's foot and frog's foot which resemble those found in the serpent symbol in Mexico.

There are rock paintings on the Potrera Chetro where the Delight maker or Medicine man is represented as dancing with a serpent erect in front of him. Mr. Gunckel also describes the shrines and boulder sites in which the Serpent is represented in various attitudes and along with the serpent many other symbols. These shrines were places where the dances occur and where the mythologies are depicted upon the walls. One such shrine is underneath a huge boulder, around which was a wall built in a circle. Within the circle and underneath the boulder were rock inscriptions which represented animal figures, serpents and various symbols.* A cave town is described by Mr. Gunckel as having many symbolic figures; the following is the description:

"It was situated in a wild and beautiful spot, shut in on all sides by high sandstone cliffs except at a narrow entrance; and the foliage is almost tropical in its luxuriance consisting of the cactus of gigantic size, grass and flowering plants, studded here and there with stunted cedars and pinons. Back of the houses was a spring of delicious cold water which issued from under the heavy sandstone ledge and formed a water reservoir in the cave town which is a rare and valued thing in this arid country. The walls of the cavern are covered with picture writings, the most common of which represent the human hand painted in red, white and yellow. In another cave were also circles representing targets, painted in colors; also the figures of serpents, coiled, or springing or crawling; also circles and

*This village is represented in the cut of "Cold Spring Cave."

snakes combined, symbolizing the lightning dart ; also the figure of a bow and arrow strung to shoot ; these are represented in the cut. Among the specimens of art are fragments of bowls, cups, pegs, and pitchers, and very few specimens are found that are not painted, or covered with raised figures. Among the ornamental designs we found the scroll, the fret, and the stepped figure, in one case the suastika

Mr. C. F. Bickford speaks of rock inscriptions as the Rio de Chelley.

" Hundreds of the shapes of human hands—the autographs perhaps of the dwellers—are found adorning the now inaccessible roofs of some of the caves. They were formed by thrusting the hand into the liquid coloring matter and slapping it with fingers extended upon the rock. Symbols are frequent ; the dragon fly, the rainbow, the sun—objects of reverence to the living Pueblos. Few animals were pictured.



SHRINE AND SUN SYMBOLS NEAR ZUNI.

Mrs. Stevenson describes a shrine which was used by the Sias in which the snake society celebrated its ceremonials.

" It was a rectangular structure of logs, which had a rude fire-place in it, and two niches in the wall, in which stood two vases. The vases were decorated with snakes and cougars upon a ground of creamy tint. The superstition was that the snake was the great divinity and guards the doors to the entrance of the unseen world. There are also six societies, composed of the snakes of the cardinal points, having special influence and special emblems. The serpent of the south had cloud emblems and had influence over the cloud people ; the serpents of the east which were painted with the crescent, had influence with the sun and moon ; the serpent of the heavens, had a body like crystal and was allied to the sun ; the serpent of the earth was spotted over like the earth, and had special relations with the earth. This people have their traditions about the sun, the seven stars, the pleiades, and the constellation of Orion. They say that the cloud, lightning, thunder and rainbow spirits, followed the Sias into the upper world.

These make their homes in springs, which are at the cardinal points, zenith and Nadir, and are in the hearts of the mountains. The water is brought from the springs at the base of the mountains in gourds, jugs and vases, by the men, women and children who ascend from these springs to the base of the tree, and thence through the heart or trunk to the top of the tree which reaches to the sky (*tinia*); they then pass on to the designated point to be sprinkled. The cloud people are careful to keep behind their masks and assume different forms, but they labor to water the earth. The lightning people shoot their arrows to make it rain the harder, the smaller flashes coming from the bows of the children. The thunder people have human forms with wings of knives, and by flapping these wings they make a great noise. The rainbow people were created to work in *tinia* (the sky), to make it more beautiful for the people of the earth to look upon. Not only the elders make the beautiful bows, but the children assist in the work. They pictured the sun as a warrior wearing a shirt of dressed deerskin, and leggings of the same, reaching to his thighs; the shirt and leggings are fringed; his moccasins are also of deerskin and embroidered in yellow, red, and turquoise beads; he wears a kilt of deerskin, the kilt having a snake painted upon it; he carries a bow and arrows, the quiver being of cougar skin, hanging over his shoulder, and he holds his bow in his left hand and an arrow in his right; he still wears a mask which protects him from view of the people of the earth. An eagle plume with a parrot plume on either side ornaments the top of the mask, and an eagle plume is on either side of the mask and one is at the bottom; the hair around the head and face is red like fire, and when it moves and shakes, the people cannot look closely at the mask; it is not intended that they should observe closely and thereby know that instead of seeing the sun they see only his mask; the heavy line encircling the mask is yellow and indicates rain."

The homage paid by the Zuni to water is illustrated by the symbols at the sacred spring of the Zunis near the ruins of the Ojo Pescado and the present Pueblo Zuni.

"It was between seven and eight feet in diameter and around it a low circular wall 15 x 20 feet across has been raised. The spring is cleared out every year when an offering is made to the spirit of the fountain of one or more water-pots which are placed on the wall. One of these is described as follows: its capacity is about a gallon; a fine border line has been drawn along the edge and on both sides of the rim, horned frogs and tadpoles alternate on the inner surface of the turreted edge; larger frogs or toads are portrayed within the body of the vessel and the crested serpents are also placed at the bottom of the vessel. These represent the animal divinities that are supposed to preside over the springs. Another shrine is described by Lieut. Whipple; it seems to have been sacred to the water deities. The high priest and master of the ceremonies stands in the midst of it; upon the ground is a sacred circle and in this are twigs and arrow-heads trimmed with feathers, with threads arranged like a snare supposed to be an invocation for rain. In the midst we find the tablets in which are crescents, crosses and other symbols, all of which show the regard for the nature powers and the sanctity of the sun, moon and stars, as worthy of adoration."

DISCOVERY OF AN ANCIENT CITY IN MEXICO.

BY M. H. SAVILLE.

IN INDIANAPOLIS JOURNAL.

The scene of these remarkable discoveries is Xoxo, about five miles south of the district of Oaxaca. The most important part of the work was accomplished during six weeks of the half year over which Mr. Saville's recent trip extended.

Mr. Saville's work was prosecuted under the auspices of the Mexican government, and he was accompanied by Mr. Humphreys, a surveyor, who acted as an official Mexican representative. They took along with them a considerable force of Mexican laborers to do the work of excavating, and carried a typewriter, camera and other implements of modern civilization with which to prosecute their work.

While on the way to his intended field of labor Mr. Saville found traces of a great group of pyramids near Xoxo. This region has long been recognized as a fruitful field for the discovery of Zapotecan relics. Thinking that a little exploration might uncover something of value, Mr. Saville set his native laborers at work and in a short time had unearthed a number of pyramids and smaller mounds. The twelve largest of these pyramids are of the sort called *teocalli*, an Aztec word, meaning divine tombs. The ground throughout this region was thickly overgrown with *guamuchi* and *mesquite*. The roots from these trees penetrated to a great depth, and in several instances they had broken through the stone floors of the mounds. Specimens of ancient pottery and other relics were found, which had been broken up by the same resistless forces.

One day, while Mr. Saville was reconnoitering some distance to the north of the big group of pyramids, he came to a rise of ground forming a sort of low plateau some distance above the rest of the plain and covered with the usual heavy vegetation and undergrowth. Separating the vines and brambles as well as he could for a short distance from the outer edge of the growth and peering underneath, the explorer noticed peculiar bits of pottery and traces of ashes. On examining the pieces of broken pottery he knew at once, from their peculiar formation, that they had lain there undisturbed for centuries, sheltered from wind and storm by the impenetrable thicket through which not even the heavy tropical rains could force their way.

Hoping that he was on the scent of valuable relics, the explorer applied himself to pick and spade, and with great difficulty dug two or three feet into the earth, where he came to a hard, flat surface. In considerable excitement, he called his

laborers, who quickly cleared away the brush and dirt. The surface was found to be a cement floor, or perhaps it would be more accurate to say a cement roof. Cutting through it, the workers came to the face of a stone wall. Sealed to this wall by their rims were cazuelas (earthenware bowls). Under each bowl was a bright red funeral idol, which had been so thoroughly preserved by the perfectly dry air that it looked as though it had been newly painted.

What had at first appeared to be a stone wall was now seen to be a long slab, forming a lintel over the top of a door. After further digging, the doorway was uncovered, and was found to be blocked by a huge metate (native millstone). Its corners had been filled in with smaller stones, and the whole mass cemented over, so that the tomb was hermetically sealed against dampness and other corrosive agents.

The lintel of this doorway was a huge stone block of volcanic origin, about six feet long and eighteen inches wide. Carved across its entire surface were inscriptions in the hieroglyphics of a civilized race! No writing of such an advanced character as that of these hieroglyphics has ever before been discovered in America. The explorer took casts in plaster and paper-mache impressions of this wonderful monolith, and finally of the whole doorway. The inscriptions show in excellent relief, and Mr. Saville is now engaged in an exhaustive study of them from the casts. He intends to recast duplicates of the originals and send them to the ablest hieroglyphists and students of ancient records the world over, in order that the utmost knowledge and skill may be brought to bear for their deciphering.

As soon as the doorway was cut through Mr. Saville and his assistants entered the chamber of the tomb. Mural paintings, representing female figures draped in shrouds and in attitudes of prayer, were on the walls. Three niches in the tomb contained a number of skulls and bones, comprising parts of ten skeletons which were scattered about. These were all painted a bright red, the same shade as that which covered the bones found outside the chambers under the cazulas. Red, Mr. Saville says, was the mourning color of the Aztecs. The fact that all the bones were painted shows that they had been entirely stripped of flesh before being placed in the tomb. During the long generations which had elapsed since the sepulcher had been sealed, over an inch of fine dust had sifted down from the decayed rocks which formed the roof and walls.

The most valuable part of the find in this ancient tomb, in the opinion of Mr. Saville, was the inscriptions. Although some of them bear a generic resemblance to the Maya writing which has been found in other parts of Mexico, no written characters of so high an order have ever before been discovered in America. It is Mr. Saville's belief that the writing is at least partly phonetic. If this proves to be the case it will lift

the Zapoteca to a position in history far above that of the celebrated Aztecs or the opulent Incas of Peru.

The next step in Mr. Saville's explorations was the great crypt of Xoxo. It was discovered by Dr. Sologuren, the famous Mexican archaeologist and collector of relics, in 1886. Mr. Saville forced his way into it by a small side door, which had been previously unknown. To reach the interior, four floors, each from two to three inches thick, made of a very hard, white cement, were cut through. Peculiar architectural formations, of an important ceremonial significance, were found in the interior of the crypt. It seems likely, from the religious and ceremonial symbols uncovered here, that the origin of the Zapotecan religion may be found to be identical with that of the most ancient faith of the eastern world.

The great discovery, and the one which scientific men consider the most important yet made, was hit upon in the course of excavations among the mounds already mentioned. A terra-cotta drain-pipe was found leading from one of these mounds into the fields. The joints of the pipe were several feet long, and they were so made as to fit carefully together. The course of the pipe was followed for a considerable distance. Then it broke off, but further along it was found again, and, following it up a steep mountain, the explorer came to a huge temple at the top, surrounded by an imposing peristyle. It had been a work of the greatest difficulty to follow the long course of the buried pipe, but probably by no other means could the ancient city have been discovered, hidden as it was by thick growths on all sides. The sides of the mountain, on the summit of which stood the city, had been artificially terraced, the top had been raised and fortified on all sides till it was impregnable.

The temple itself was a magnificent piece of architecture. Beyond it, on the broad area of the mountain top, were the crumbling ruins of amphitheatres, palaces and other public buildings. Streets and passageways were exactly as they had been during the long centuries since their desertion. Here, on this terraced mountain, overlooking a great stretch of country at its foot, was found the lost capital of the Zapotecan nation, at one time, probably, the rulers over most of the other peoples of the continent, certainly their leaders in art, civilization and industry. The mountain on which the skeleton of this prehistoric metropolis was brought to view is marked on the Mexican government maps as Monte Alban. Its crowning wall is completely hidden by the surrounding growth of lofty trees, and it is so difficult of access that it has never been attacked or even seriously thought of as a field for exploration. That there were ruins upon this summit was known before Mr. Saville's visit, but they were supposed to be only the remains of some Indian fortresses instead of, as has been proved, the wreck of a stately and civilized city.

Zachila was, in all probability, the ancient name of the city on Monte Alban, says Mr. Saville. Not very far away there exists a little village which now bears the same name. The spot was, strategically, an ideal place for a great capital city in the troublous times when it must have existed. Its situation made it an impregnable fortress. The mountain stands at the intersection of the three broad valleys, Oaxaca, Etla and Jalplan. Thus it commanded a wide view in all directions, and being isolated by these valleys from the surrounding mountains and looming high above them all, it kept perpetual guard over all the country round about.

Of course, the work did not extend over a sufficient length of time to determine the exact extent of the culture, wealth and civilization of the people who once inhabited the city, but they must have been far in advance of most of those with whom we have become, in a degree, acquainted through other mounds and ruins. The city was certainly one of considerable size, extending over several square miles. We came upon some stone aqueducts over six feet wide. In the different parts of the plain are big mounds, which, on investigation, proved to be the crumbling remains of what were once great public buildings. The frequent earthquakes of that region, which probably caused the destruction of the city, have shaken these once important structures into mere heaps of dust and debris.

In the southern end of the city we found a big mound over a thousand feet long and three hundred feet in width. The slopes of its sides were regular and faced with masonry, and there was a stairway leading to its summit. It may have been the site of a vast temple or of a series of public buildings. At the opposite end of the city there was a rectangular basin of about the same size which once formed a great amphitheater where public gatherings were held, and religious ceremonies performed.

No reliable proofs are left of what a Zapotecan dwelling was like. Excavations of temples, causeways, pillars, arches and other magnificent public structures, and a searching study of the plans and general appearance of the city have furnished the most convincing data for the scientific meaning with which the explorations have clothed the masses of hitherto meaningless stone and dust. Everywhere there was found proof that the Zapotecs were a peace-loving people, who must have been governed by an elaborate code of laws and customs.

They had a literature, for we found proofs and traces of it, though, of course, there was no time to go extensively into that phase of the explorations. Their religion must have developed to an advanced stage, for we found proof that they did not offer up live sacrifices in their religious fetes. Doubtless further work will bring to light other important and interesting facts about the lives and customs of these people, whom we may justly look upon as our earliest predecessors.

DU CHAILLU BEFORE THE AMERICAN ASSOCIATION.

The chief event of the day in the Anthropological section was the address given by the noted explorer, Paul Du Chaillu, on "The Norseman as the Conqueror of Britain." M. Du Chaillu was received with a hearty salvo of applause on being introduced. "Ladies and gentleman," said he, "if I don't speak loud enough for you, don't be afraid to say so. Just sing out 'louder.'"

M. Du Chaillu went on to trace the wanderings of the Norsemen. He found traces of the Roman empire; he found mounds on the shores of the Mediterranean, similar to those found in Scandinavia, showing that even in those days the Norseman had traveled far and wide. M. Du Chaillu had here a little fling at England. "What is England?" he asked. "Where did the name come from? Why, from the Norsemen. The word 'eng' means meadow or low land, and the Norsemen had a hundred such englands. That's England for you."

EGYPTOLOGICAL NOTES.

BY WILLIAM C. WINSLOW, PH. D., SC. D.

OUR FIRST VOLUME OF PAPYRI.

Unique among the publications of this month of July will be our first volume of the papyri found at Behnesa, the site of Oxyrhynchus. Of the selections from the thousands of papyri on hand 158 papyri are printed in full, and some 50 more are briefly described. There are eleven indices dealing with such diversity of subjects as emperors, officials, decrees, coins, weights, measures, symbols, private correspondence, personal and geographical names, symbols and dates. Messrs. Grenfell and Hunt classify these documents as theological, new classical fragments, fragments of extant classical authors, Latin, documents of the first four centuries [or the Roman period] and of the sixth or seventh century [Byzantine period].

With the 300 pages of letter press, crown quarto size, are eight collotype facsimiles which include the first chapter of St. Mathew's Gospel; five new stanzas of Sappho; a fragment of hexameter by Alcman; two columns of Thucydides; bits of Homer, Plato and Demosthenes; fragments of Latin; and a private letter of odd chirography to a military officer. Thus we have the Virgin Birth; lines from the poetess of love; grave history; and on unrivalled trinity even for Greece, Homer, Plato, Demosthenes; and many pieces of state, business and social Latin, all illustrated from the original as then written or copied. This publication is indeed unique. Only one-fifth of the papyri, now at Oxford, has been unpacked. Exciting surprises, as the editors suggest, are still in reserve.

These papyri are largely a picture of a provincial town for

six centuries under Roman rule. Civilization and order obtain quite as much as in British India today. Commerce, property, marriage, indicate this much. The papyri so far touch Christianity very little. Yet Rufinus, of the days of St. Jerome, states that the population then included 10,000 monks and 40,000 virgins.

Among the private documents in this fascinating book is a contract for the maintenance of a racing stable, which begins with a religious formula. There are such papers as a contract with a horse-trainer, a butcher's bill, a list of pawned property, a school-boy's exercise, a letter of condolence and an invitation to dine.

Theon writes his father a printed letter in capitals: "It was a fine thing of you not to take me with you to the city. If you won't take me with you to Alexandria, I won't write you a letter or speak to you or say good-bye to you. And if you go to Alexandria, I won't take your hand, or cheer you up again when you are in pain. That is what will happen if you won't take me. Mother said to Archelaus, 'It quite upset me to be left behind.' It was good of you to send me presents. Send me a lyre, I entreat you. If you don't I won't eat, I won't drink. There now!"

What Theon the elder thought of this letter from his boy, I know not; but there was young Oxyrhynchus then as certain as there is young America today. It now only remains for Grenfell & Hunt to publish in volume two, some collotypes of the revenue stamps used at that time. Meanwhile we rejoice that a single impression of our five-dollar collotype notes will buy for its purchaser so absorbingly interesting a book as our First Volume of Papyri.

THE LANGUAGES OF CHILI.

BY A. S. GATSCHET.

LANGUAGES OF CHILI.—Constant progress is at present made toward an enlightened study of the dialects of the Chilean Indians, not by publishing ponderous volumes as with us, but by giving to the scientific public Indian texts of interest, containing relations of fights, hunts, travels, animal stories, jokes, proverbs and similar literature. An accurate Spanish translation and all the necessary remarks for a complete understanding of the texts are added on the column of page opposite, so that the students can acquire any of the numerous dialects of Chilean or Araucan linguistic family without much trouble or mental torture. Professor Dr. Rodolfo Lenz is the originator of this revival in the native literature and in this he acts with good common sense. His pamphlets entitled "Estudios Araucanos" are now twelve in number; of these, number ten contains national songs in the Moluche and the Pehuenche dialects; number eleven poems and other pieces to facilitate the study of Araucan folklore in the Pehuenche dialect. This number

twelve is filled with dialogues in Moluche as spoken at Choi-chel. This whole series of the *Estudios Araucanos* was published in the "*Anales de la Universidad de Chile*" at the capital, Santiago, (1895-1897) and will be continued. A lecture on "Araucan Literature" in Spanish, was delivered by Dr. Lenz before the philosophic faculty of the same institution, published 1897 in the *Revista del Sur* and subsequently in pamphlet form (44 pages).

From old and recent materials the French linguist Raoul de la Grasserie, of Rennes, has compiled a grammar and vocabulary of the Auca or Chilean after a new and suggestive method, which considerably facilitates the acquisition of this and any foreign form of speech. His work forms the 21st volume of *Maisonneuves "Bibliothèque Linguistique Américaine"* and bears the title: "*Langue Auca, ou langue indigène du Chili; Grammaire, texts, traduits et analysés, dictionnaire par Raoul de la Grasserie, Paris, 1898, pp. 372, octavo.*" The dialects are easily pronounced by Europeans and the verb incorporates the substantial direct object in many instances.

THE MEANING OF "MERRIMAC."

BY A. S. GATSCHE.

MERRIMAC, a name given to American warships which have repeatedly filled the world with their fame, is taken from a river coursing through New Hampshire and Massachusetts. The name also clings to a village on that river, formerly West Amesbury and to South Amesbury, Mass., now Merrimacport. New Englanders emigrating to Western States have named many new settlements there by the name Merrimac, which is identical with "Marameg," "Máramec," in its derivation. The Maramec is a tributary of the Mississippi river and over one hundred and fifty miles long.

Both forms of this river name come from regions where Indians of Algonquin race have lived, hence there must be a word in their language enabling us to explain that river name. It is Mialamékwa in Illinois dialects and in Shawnee designating a fish-species. The Shawnees had a clan called after the catfish: mialamékwa, msúimigi totemic gens of the catfish, whose members, the Mialamégugi, originally came from Mialamé utéwe, "the catfish settlement" in Ohio.

The catfish belongs to the class of Siluridæ, is conspicuous by its thick head and the absence of scales, and obtained its name from the long, bristly organs inserted at its mouth's base, which so strikingly resemble the whiskers of a cat. These "feelers" are called in the Peoria *missitunikani*, or *messitungi*, "hair about the mouth," and gave origin to the American French *la barbotte* or *le barbæ* as a name for the fish.

In the Odjibiwe dialect the consonant changes; *mealamékwa* becomes *mánameg*, a form which closely approximates the above *Máramec*.

That this fish-name is of a generic signification, and does not apply to the catfish exclusively, is shown by the fact that in Penobscot, spoken on Penobscot river in Maine, *mamalámekg* is the mackerel—literally the "spotted fish,"—and the Penobscot adjective, *mamalabá-u*, means "spotted in color." Indeed, in the cognate Passamaquoddy dialect of Maine, the word "*ámali*" stands for spotted, striped, checkered; *amalégék* designated calico and other variously colored prints; *amali-skthássit* is the toad, because spotted; *amali-knaúktch*, striped turtle.

The second part, *amékwa*, *amékga*, *míkwa*, *mékga*, is aquatic animal, and answers to the English "fish" so far as this term embodies, also incorrectly enough, such beings as shellfish, crawfish and others, which are not fish at all. So every Algonkin language possesses animal names composed with *amékwa*, which are not fish but live in the water. The Amikwa tribe of Canada, formerly near Lake Nipissing, were in English called "Beavers," and *mékusa*, the Peoria diminutive of *amékwa*, means water-bug.

Thus we obtain for the catfish, the mackerel, and other fish that possibly bear the above Indian name, the general signification of spotted, mottled fish or aquatic animal.

There are other dialects of the wide-stretching Algonkin family which use names for the catfish, differing entirely from the above, or designating other species of the catfish or Siluridæ class. One of these species, the mudcat, is called *wálthia* by the Peorias, because it digs in the sand or ground below the water. Delawares call it *wáhlhé-u*, mudfish, literally: "digger (in the ground or mud)." Micmacs call one of the catfishes *atkegwétch*, and the Unami: *wis-amékû*, *wis-ámek*, "fat-fish."

* A similar variety of color is probably indicated also by the *miala*, of the Peoria name, for the people call it there the "blue cat" (*fesives channel cat*).

Amal-apskihigen, nom. loc. of an island near Machiasport, Me., bearing Indian pictographs, made by fairies. I; 142. Copd. XX. 220-222.

EDITORIAL.

SCIENCE, POLITICS AND WAR.

The expansiveness of our country and of our age has been the uppermost theme within the past few months. There is one inspiration in the outlook which leads to great hopefulness. This is the case not only in commercial circles, and the great missionary causes, but it has its effect on science, on literature and on art. We would not detract from the prospect by the least shadow of doubt, nor put in a single discordant note, and yet there is another view which needs to be taken.

In the frontispiece we have given a picture of Hennepin, who claimed to be the great discoverer, and who was, at the same time, a missionary and a priest as well as an explorer. The publisher of his second edition represented him as under the direction of Mercury, the God of Letters, taking the world into his glance and carrying the cross to all parts as though science and religion and even government were waiting upon his individual effort and skill.

It will be remembered that in the very edition which contains this remarkable picture the author claims to have taken a voyage down the Mississippi river, which he never took, and to have made discoveries which he never made, and this has brought a stigma upon his name and discredit upon his character. Hennepin was a companion to a great explorer, the intrepid La Salle, but when he embarked upon his famous voyage up the Mississippi, not down, he soon fell into the hands of the savages and was taken prisoner, and would, perhaps, have lost his life except for the fortunate visit of Duluth, who came down from the North. It will also be remembered that La Salle, through the treachery of the captain of the vessel on which he sailed from France, missed the mouth of that river and found his vessel wrecked on the shores of the Gulf, farther west, and was finally slain by one of his companions in arms, and his body left to rot in the swamps of Texas, the glory of his discovery having been clouded by the writings of Hennepin himself.

There is a lesson in all this. We, in this country, have been making great progress and advancement in material wealth, as our great architectural structures, and our great expositions, and our extensive railroads show, and the prospect is that our navy and commercial fleets will surpass those of any other nation, but are there no dangers in the way? Some propose to take possession of the islands of the sea. Here comes a lesson from archaeology as well as history. To any one who looks at the connection between the standards of art in the past and the present, remembers that we have inherited systems of philosophy and

of justice and our present lines of thought, the question arises at once, are we able to carry our conquests to the distant islands, and there mingle with the indolent, the sensuous and the wild and the degraded people which inhabit them without losing our culture and lowering our standard of character and morality. Already have we seen the effect of a heterogeneous population in our own institutions and our own standards.

There is also a religious problem to be solved. It is well known that the regime of Spain has favored the establishment of great religious monopolies, both in Cuba and the Phillipines, and that the papal church and the different order of Monks hold immense portions of the cultivated lands in those islands, in their own name and by their own title. There are also several millions of Mohammedans, who occupy the islands adjoining These, with the native inhabitants, who are heathen and pagan of the most superstitious kind, all of them totally unfit for citizenship in a republic, and resembling the Indian tribes who have been and still are the wards of the nation, requiring that the islands should be governed by the United States as are Indian reservations.

Furthermore, the civilization of our own land may be at stake. Some of us remember what a struggle civilization has here had with barbarism. Fortunately we inherited, at the beginning, the best elements of the civilization of Europe through the Puritans, Cavaliers and the Huguenots, and were able to subdue the savages and absorb the foreign immigrants. The culmination was reached during the celebration of the four hundredth anniversary of the Discovery—1893.

We remember the beauty, the elegance and the symmetry of the buildings which arose, as if by magic, by the side of the blue waters of the old "Lake of Illinois," and in the city which still bears the Indian name, but the archaeologist knows the "Aladdin's Lamp" which caused that vision to arise was actually borrowed from the oldest nations, and that the elements of architecture and art which first appeared on the shores of the Egean Sea were actually transplanted to these distant regions and embodied in the White City—which so strongly reminded us of the classic standards.

But has the inspiration of that scene continued, and will it suffice for the fearful struggle which is to come in the future? We who live in the city where that vision appeared, and then so suddenly vanished, look upon the haste with which great houses are put up in the summer and winter, houses which contain the strangest medley of the architecture of all nations, and many of the ugliest patterns imaginable, conclude that the most beautiful things and the most graceful, are the most evanescent.

The question is, are we prepared to mingle the best standards of culture, of learning and of religion, which we have inherited

from our fathers, with the barbarous, the grotesque and strange types which have long prevailed among the Asiatics of the East.

The Islands of the Pacific will prove the meeting place of two great waves—these waves will certainly clash and must bring wreck to many time-honored customs; will they cause the best or the worst to triumph?

This is a side to the subject which has not been presented. We do not predict from it either disaster nor immediate success, but would have our readers realize the importance of the era upon which we are entering, and would beg them to hold to the standards which they have received, and which they know to be the best in the world.

THE FIFTIETH ANNIVERSARY OF THE AMERICAN ASSOCIATION

The American Association was organized fifty years ago by a number of gentlemen who had previously belonged to a scientific body which embraced only one or two departments—the most of whom have passed away.

The Association has had an interesting history, as it has now passed through two wars without serious hindrance, and has endured the strain incident to certain unpopular tenets which for a time raised more or less religious prejudice, and has progressed until now it is the largest scientific body in the United States, and perhaps in the world, and the officers of it may be regarded as among the most distinguished men of the present generation. It was fitting that the fiftieth anniversary should be observed in the city where the first move toward its organization was made, though the actual establishment, and first meeting, was in another city, Philadelphia, the year afterward.

Up to the present time the effort has been to draw together into one great body all the leading scientists of the country, and for this reason one department after another has been added—that of Anthropology having been established in 1876, the year of the Centennial.

The question now arises, however, whether the growth is likely to continue in the future as it has in the past, and if it does whether the very growth and success will not be likely to defeat the very object for which it was organized. Already has it appeared that it is very difficult to turn a body which was designed for calm and thorough discussion of great problems, and which

require great deliberation, into a popular body which shall have the characteristics of a great mass meeting of those who are scientifically inclined, the sessions often being mingled with entertainments, excursions and such attractions as the hospitality of a great city will offer. The question has been answered in part by the fact that several societies have been already organized which embrace only the specialist of a particular department, some of which hold their meetings just before the sessions of the A. A. A. S. begin, and often at the interim of the winter vacation, in separate cities.

There is no doubt that the council has struggled with the inevitable difficulties which have already arisen, and will continue to arise. All honor is due to their sincerity and wisdom, and yet the practical working always prove more or less disappointing. In the department of Anthropology these difficulties are very apparent. It is well known that this department has been growing during the last twenty-five years, and now embraces psychology and physical anthropology, which have at this meeting assumed great prominence. The veterans have, to be sure, disappeared, as a large number have passed away, but their places have been, or are being, filled by young men, some of whom have had their training in the schools and colleges, others in the museums, and still others in the field—the largest number of them having their homes at present in the eastern cities. The question which is to be brought before them in the future is not in reference to their own part or their own prominence, but how will they continue to hold together the workers and the students in the different parts of our great country. Already the programmes are so crowded that many gentlemen have preferred to read the titles and leave the reading and discussion of papers presented to gentlemen who are near by. This difficulty has been overcome, to a certain degree, by the migratory character of the Association, but the parties who are most prominent are generally those who have the most opportunities for making their thoughts and researches known outside of these annual meetings. Is it not inevitable that as institutions will arise in different parts of our great continent, and as the interest in the scientific study becomes local and devoted to the local surroundings, that there should arise several large societies which will take the place of the one, and in these the greatest amount of scientific work will hereafter be done, and their results be shown.

It certainly is not likely that the Secretary of the Association will again, during the next fifty years, hold positions in three of the largest museums of the country, as the Professor who has just resigned did at one time (or within one year), nor is it to be expected that this Association can establish or uphold journals which shall be recognized as its representatives for the whole country, to the exclusion of others which may be established.

The tendency to centralize may continue for a time, but there is also a great tendency to bring forth individuality. There are affiliations between gentlemen who are in different centres. While the name American has a wonderful charm yet the American spirit does not brook constraint, and it is not the name but the spirit which will tell in the scientific as in the political world. Gentlemen are living at immense distances from one another, and it is not at all likely that the American Association can hold the sway over the whole country that it has in the past. It is easy for the British Association, and the French, to gather its members from all points, but this is no longer possible for America.

We predict that the day is not far distant when societies and organizations which are somewhat sectional in their character will be organized, and that those on the Atlantic coast will have one, those in the Mississippi Valley another, and those on the Pacific coast a third, and that scientific men will gather into bodies in which the individual workers will be recognized wherever they are.

BOOK REVIEWS.

THE TARASCAN GRAMMAR OF THE PADRE MATURINO GILBERTI, the oldest of this Mexican language has just been republished by Dr. Nicholas Leon, of Mexico, in a fac-simile edition.

This edition reproduces the old type and readings, and was struck off in a limited number of copies only, on agave or maguey paper. The original was published in Mexico as early as 1558. The full title is *Arte de la lengua Tarascano de Michoacan*, por Fray Maturino Gilberti, de la orden de San Francisco. Mexico, Oficina del Timbre, 1898. Small octavo; pp. 344 and six pages in the Appendix. This language is still spoken by about 30,000 Indians in Michoacan and neighboring states. Dr. Leon has recently published in Paris, jointly with R. de la Grasserie, other materials for the study of this language, in a popular form, with French text. Paris: Maisonneuve & Co., 1896. 8vo.

THE CONSTRUCTION OF THE BIBLE. By Walter F. Adeney, M. A., Professor of New Testament Exegesis, History and Criticism, New College, London. Author of *The Theology of the New Testament*, *How to Read the Bible*, etc. Thomas Whittaker, 2 and 3 Bible House, New York. 1898.

The Bible is compared to a Cathedral in which are embodied the different styles of architecture, rude Saxon foundations, massive Norman pillars, early English windows, Tudor chapels, the various parts blending in the rich harmony of "frozen music." We have the primitive traditions, and the ancient ballads, for the earliest beginnings of scripture. "The Book of

Joshua" and the "Book of the Wars of the Lord" are referred to in Joshua xiii, Numbers xiv, 21, as sources of information. The narratives are not un-historical, or are they sun-myths, but are founded upon traditions and records which existed before the days of Moses, for writing was known long before that time, and the laws, like the "laws of many," were embodied in the Pentatuch, the Ten Commandments, the Book of the Covenant and the Law of Holiness, or the Levitical Law. These constitute the foundation stones of the Old Testament. The construction of the Bible on these foundations went on through the times of the History of the Kings, the early and the later prophets, and the gathering of the sacred writings in the days of Ezra. This period lasted for one thousand or fifteen hundred years. The progress of the doctrine of religious thought and revelation continued.

This little book is up to date in its information, but conservative in its position, and gives the best summary on the construction of the Bible in a small compass. The price is low at 50 cents, and it should meet with an extensive sale.

THE COMPREHENSIVE SUBJECT INDEX TO UNIVERSAL PROSE FICTION.
Compiled and arranged by Zelia Allen Dixson, Assistant Librarian in
the University of Chicago. New York: Dodd, Mead & Co, 1897.

This book is of permanent value, and not dependent on the passing impression or the wave of reviews which followed its appearance. Our review, though late, will be with the purpose of showing the number of works of fiction which have been devoted to the American Aborigines, and to the early local history of the Western States as compared with those on Oriental Archaeology and Ancient History. One would naturally suppose that the American Indian had had more than his proper share, but this is not true, for while the Indians have been described by Cooper in a few instances yet there are many tribes, and these the most romantic and attractive in their mythology and history, which have been totally ignored. We maintain that here is a field for the novel writer which will yield most abundant, fruitful and poetical imagery, and if properly worked will show an entirely different side from that which has so tragically presented itself.

The list of works in which American Indians are prominent number only seventy, and including those on the French and Indian wars, only one hundred and six; while those on Oriental Archaeology, including Babylon, Egypt and Athens, one hundred and two, and those on the early days of Christianity, forty-two. There are forty-nine novels whose scenes are laid in Central or South America; and Plymouth has come in for about twenty-five titles, and Pocahontas for only four. There are ten novels on the Vikings, while there are about two hundred and fifty on Spanish history; fifteen on Columbus, four on Lincoln; thirteen have their scenes laid in Cuba and forty in Mexico. Adventures, during the early times, on the Atlantic coast have formed the theme of thirty-five novels. As to the Western States, fourteen have their scenes laid in Ohio, thirteen in Illinois, eight in Colorado, twenty-two in Indiana, eight in Chicago. King Phillip's war is celebrated by five, and the Seminole war by eight. The war of 1812 has thirty-two. Virginia has been honored by forty-eight novels, but Wisconsin has unfortunately been left though several novels have certainly been written which make that State the scene of the story.

In the department of Folk-lore there are ten credited to American tales, only five to the folk-lore of the Indians, six to Negro stories. This will undoubtedly be changed in a few years, as the folk-lore of the Negro is about exhausted, while that of the North American Indian has just begun to be known.

Mrs. Dixson has certainly done good service, and her book will not only be appreciated by Librarians but will ultimately become a hand-book and guide for all who want to read fiction for the history and for the poetry and literature there may be contained in it, and possibly the passive, sensational loving people will find a few things which will benefit them.

REPORT OF THE U. S. NATIONAL MUSEUM, under the direction of the Smithsonian Institution, for the year ending June 30, 1895.

The most important part of this report is that which was furnished by Dr. Frank Boas, on the Kwakiutl Indians, and the Graphic Art of the Eskimos, by Walter James Hoffman, M. D.

The best part of Dr. Boas' article is that which treats of the totems and the ideas which are held as to descent from them.

THE HOUSE IN WHICH THOMAS JEFFERSON WROTE THE DECLARATION OF INDEPENDENCE. By Thomas Donaldson; with illustrations. Privately printed. Averill Printing Co., Philadelphia, Pa., 1898. 119 pp.

This is an elegant book, and one which will prove useful to every patriot. It contains a sketch of Thomas Jefferson, and with it a description of the different houses in which it is claimed the Declaration was written, accompanied with cuts which represent the early and later condition of the houses. There is also a review of Thomas Jefferson's career, his reputation for having great knowledge, coupled with the force and weight of his personal character, and his constant care for the personal liberty of his fellowmen. From earliest manhood he united the search for knowledge with untiring energy in its acquisition. This is followed last by Thomas Jefferson's account of the origin and adoption of the Declaration. The illustrations are, first, a portrait of Jefferson, also a group of the five members of congress who were appointed to draw up the Declaration—Thomas Jefferson, Dr. Benjamin Franklin, John Adams, Roger Sherman and Robert S. Livingston—besides the cuts which represent the different houses.

THE AWAKENING OF A NATION—"MEXICO" OF TO-DAY. By Charles F. Lummis. Profusely illustrated. New York and London: Harper & Brothers, Publishers, 1898.

In ordinary times this book would attract considerable attention, but we are making history so fast, and extending our dominion so far, that we are likely to forget our nearest neighbors. The author says in his preface, a certain "Americanism" in me gropes toward the day when we shall no longer sniff ignorantly at all "outside boundaries." These pages then largely, as they were written for Harper's Magazine, are submitted, not as a description of Mexico, but as a finger-board along the path to comprehension. Mexico has neither great publishing houses nor a great book market, and there is no one to undertake a publication as a legitimate investment. It is therefore well that the house is so well known that has published this book as the Harpers. The history of the literature is worthy of notice. In 1536 the printing press began in the City of Mexico. The first book printed in the new world was entitled the "Spiritual Ladder for Reaching Heaven." The Don Antonio de Mendoza brought the first printing press to America. We have a specimen of the printing, of the type and the illustrations used in the early books. In this volume there are a great many interesting facts about the water works taking the place of the old Spanish aqueducts, and about the houses, which so differ from our own, and resemble those in the Oriental countries, with the lawn inside. Some statements are very startling, and they are as follows: "The public schools and the free industrial schools have taken the place of those which the Spanish had established in America two centuries before we dreamed of them." Every state capital has its public model schools, and there is now no hamlet of one hundred Mexicans that has not its public school. The long era of its dishonest officials is past. There are no more brigand governors nor customs collectors waiting to fix the accounts to suit themselves. There is probably no other country in the New World whose whole public service is to-day so scrupulously clean. The public buildings are better than our average towns can

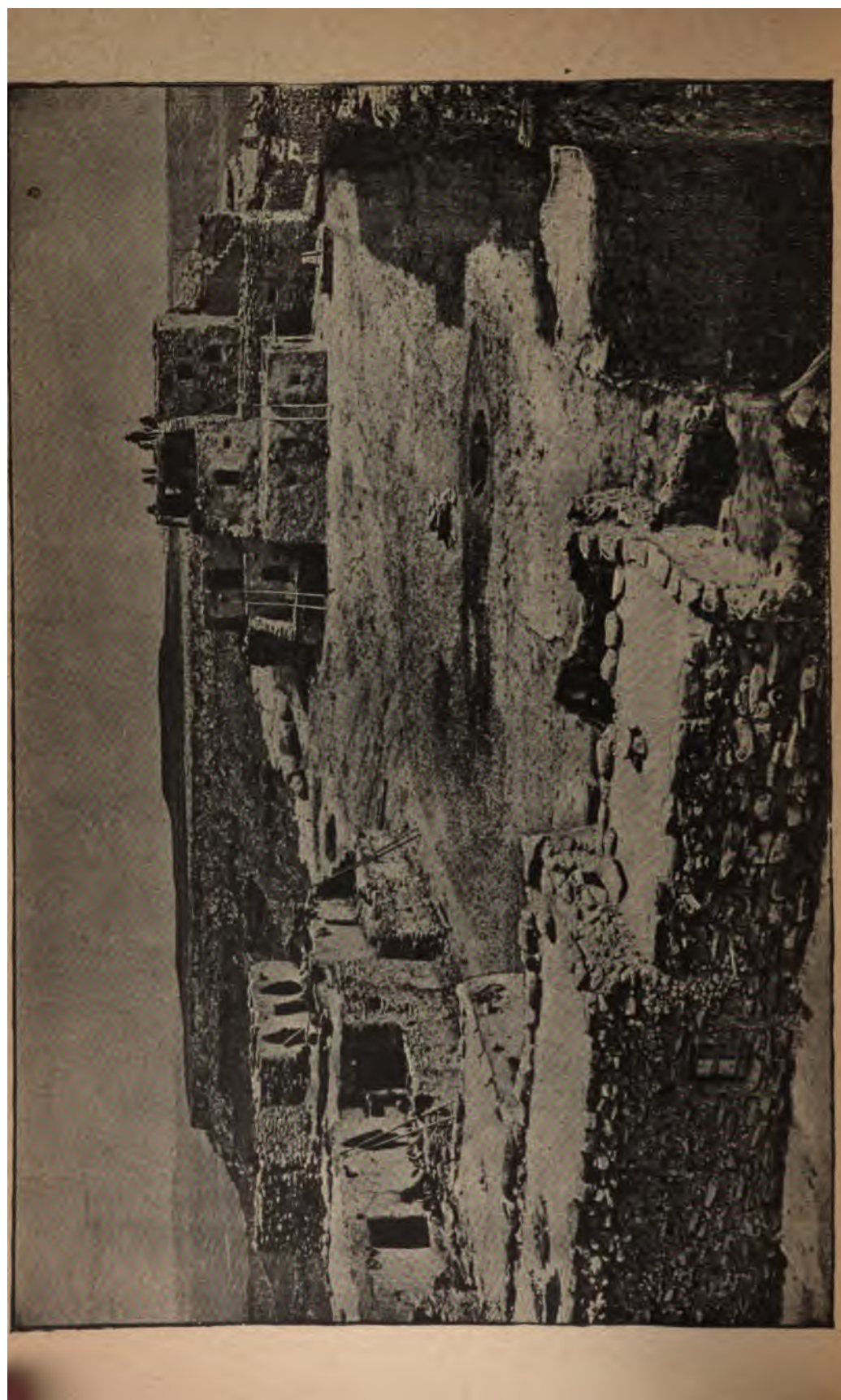
afford ; splendid prisons, markets, hospitals, asylums and training schools. The book contains a vast amount of information, and is very valuable, as it gives the new idea as to the awakening of the nation. It is well illustrated and gorgeously bound, as it contains the colors of the Mexican flag on the outside

THE GODS OF OUR FATHERS, A study of Saxon Mythology. By Herman I. Stern. New York and London : Harper & Brothers, Publishers, 1898.

Mallet's Northern Antiquities have been long out of print, but this book will take its place to a certain extent. It gives the Saxon Mythology very much as it was given in the Eddas. It commences with the formation of the world. It describes the Gods and their abodes, and the Queens of Vassgard, Loki and his brood, the giants and the dwarfs, Thor's adventures, and 1st, 2d and 3d act of the world drama. There is not the same charm of language, that is the simplicity and charm that there was in the other book, but one who wants to know about the Saxon Mythology will find this very instructive. The best part, at least the most original and suggestive, is the introduction. The following is the line of thought given :

All mythologies in common, start with the personification of nature's forces. Primitive man, on stepping from his cave, perceives not only the powers but sees that they are in a state of activity : the sun, the moon, the sea, the river, the air, are in motion. The next discovery he makes is that of conflict. Certain forces are arrayed against other forces—day and night are at variance with each other. The storm wind attacks the tree, the frost attacks the life of the plant and animal. Nature reveals itself to him in the character of a drama or warfare. The arena of this conflict widens. At first the warfare revolves within the compass of a day ; next it is perceived to include the year, inasmuch as summer is the daytime and winter the nighttime. The arena widens further—summer is the lifetime of nature, winter its death, and spring its resurrection. As the day and year have their winter and death, the world itself must have its beginning and end. Mythology ascends to the sublime conception of cosmogony. All mythologies and religious systems revert to cosmogony, and the beginnings of the universe. Mythology moves into a new realm, that of human existence in which the great problems of life and death are the eternal poles. The period of light is observed to be the period of life ; darkness is death. Divinity means superiority over all other beings. Immortality is an attribute of divinity, and must be received as a divine gift. The last point which mythology reaches is that where it teaches the distinction between guilt and innocence. When it reaches this stage of development it enters upon the highest domain, that of ethics. Norse mythology has raised and extended the law of responsibility to the ethical constitution of the world. The peculiarity or greatness of the Norse system is that it has created a marvelous eschatology. Such, in brief, is the position which the author of the "Gods of our Fathers" takes for his introduction.

OUTLINES OF THE EARTH'S HISTORY. A popular study in Physiography. By Nathaniel Southgate Shuler, Professor of Geology in Harvard University, Dean of Lawrence Scientific School. New York ; D. Appleton & Company, 1898. This book will be reviewed in the next number.



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NO. 6.

"GREAT HOUSES AND FORTRESSES."

BY STEPHEN D. PEET, PH. D.

The chief features of the architecture of the Pueblos and of the Cliff-Dwellers was that one great house always held a village, and constituted not only a home for all of the people of the village, but also a castle or house-fortress for them. There are other regions where villages are crowded into small clusters of houses, and the people make a common defense either by massing their forces or by surrounding their houses with a stockade or an earth wall. Such was the common mode of life among the tribes in the Mississippi Valley—such as the Dakotas, Mandans, and Algonquins. There were a few locations where a terraced pyramid was used as a home for the chief men and the ruling classes, and were the places of refuge for the people of the village who dwelt in smaller houses scattered on the plains—near the pyramids. Villages of this kind were common among the Mound-Builders of the Gulf States.

It has been claimed that the great palaces which are built on terraced pyramids in Nicaragua, Guatemala, and Honduras, were communistic houses, and contained whole villages, and were in fact pueblos. But this is doubtful, for society in this region was divided into classes, and the evidence is that the common people dwelt within the enclosures and smaller houses, while the ruling classes occupied the palaces, and the priests resorted to the summit of the pyramids for their sacrifices. We may say, then, that the only place where an entire village was contained in a single house is the one which was occupied by the Pueblo tribes, including with them the Cliff-Dwellers. This makes the study of the Pueblos, or Great Houses, all the more interesting and important, for by it we may learn many things about the domestic life and village organization of the Cliff-Dwellers. It is fortunate that there are so many survivors, and that they are still living in their many-

storied houses, that their domestic life and social status and time-honored religious customs have been studied so carefully. There are, to be sure, but few pueblos now standing. Out of the great number which once covered the region with a teeming population, and which made the river valleys and the lofty mesas a scene of life, there can be found only here and there a "great house" which contained the fragments of the various tribes which were gathered into them, and even these pueblos were nearly all built at a modern date; scarcely one of them is on the same site, or has the same wall and rooms which were seen by the Spaniards; some of the pueblos have changed many times; in fact the only village which remains the same is that one on Acoma. Still we may say that notwithstanding the ruin that has come upon the "Great Houses" all over this pueblo territory, enough of the ancient style of building and ancient customs of the people remain for us to draw a picture



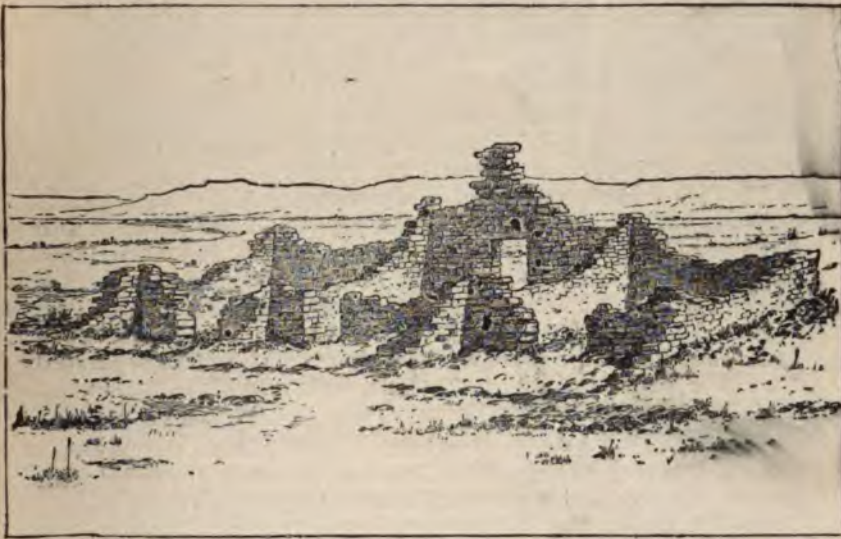
A TYPICAL GREAT HOUSE AT ZUNI.

of society as it was in pre-Columbian times, and to describe with considerable accuracy the domestic and social life which prevail. We shall take the Great Houses for our study, and endeavor to show what the domestic life was.

I. The chief peculiarity which may be recognized in the Great Houses is that they were used as fortresses as well as village sites, or pueblos. This peculiarity has been spoken of by the early explorers, and was formerly made prominent. But later

explorers have so often ignored the defensive element, and represented even the fortresses of the Cliff-Dwellers as only temporary resorts, that it is important to bring this feature forward again and make it prominent. They were, indeed, fortresses or castles which were permanently occupied, and contained all the population that there was, for it was not possible for families to live separately in such a country. Even if there were no dangers threatening from the incursions of the wild tribes from a distance, or from the attacks of neighboring tribes, it would have been very difficult for them to have gained subsistence from such an arid climate. It was absolutely necessary that the people should gather into great houses and join together in cultivating the soil, as well as protecting themselves from their enemies.

Moreover, there was a sense of loneliness in the midst of this mountain scenery which would naturally drive the people to the villages. While the views are inspiring and full of grandeur, it is the testimony of all who have visited the region that one



A TYPICAL SOLITARY HOUSE.

needs to grow to it in order to apprehend and realize what magnificent distances there are, and how much sublimity is contained in them. The country differs from most mountain regions, for there is a great lack of vegetation, and there is a strange glare to the sun, and a dreamy haze settles down on the prospect everywhere. We may conclude then that the "great houses" were the products of the country, and the results of environment. Still, they remind us of the great castles of

Europe, for they were often situated upon lofty mesas at inaccessible heights, their walls blending with the rocks, making them seem like great fortresses. They also remind us of the walled towns, which according to the scriptures were scattered over the hill country of Judea, and marked the border line of that and the wilderness.

Society was in a far lower state than that which appeared during the historic age, yet the same elements of the clan life and the village estate, which have engaged the attention of so many, were contained in these pueblos, or Great Houses, and they therefore are interesting objects of study.

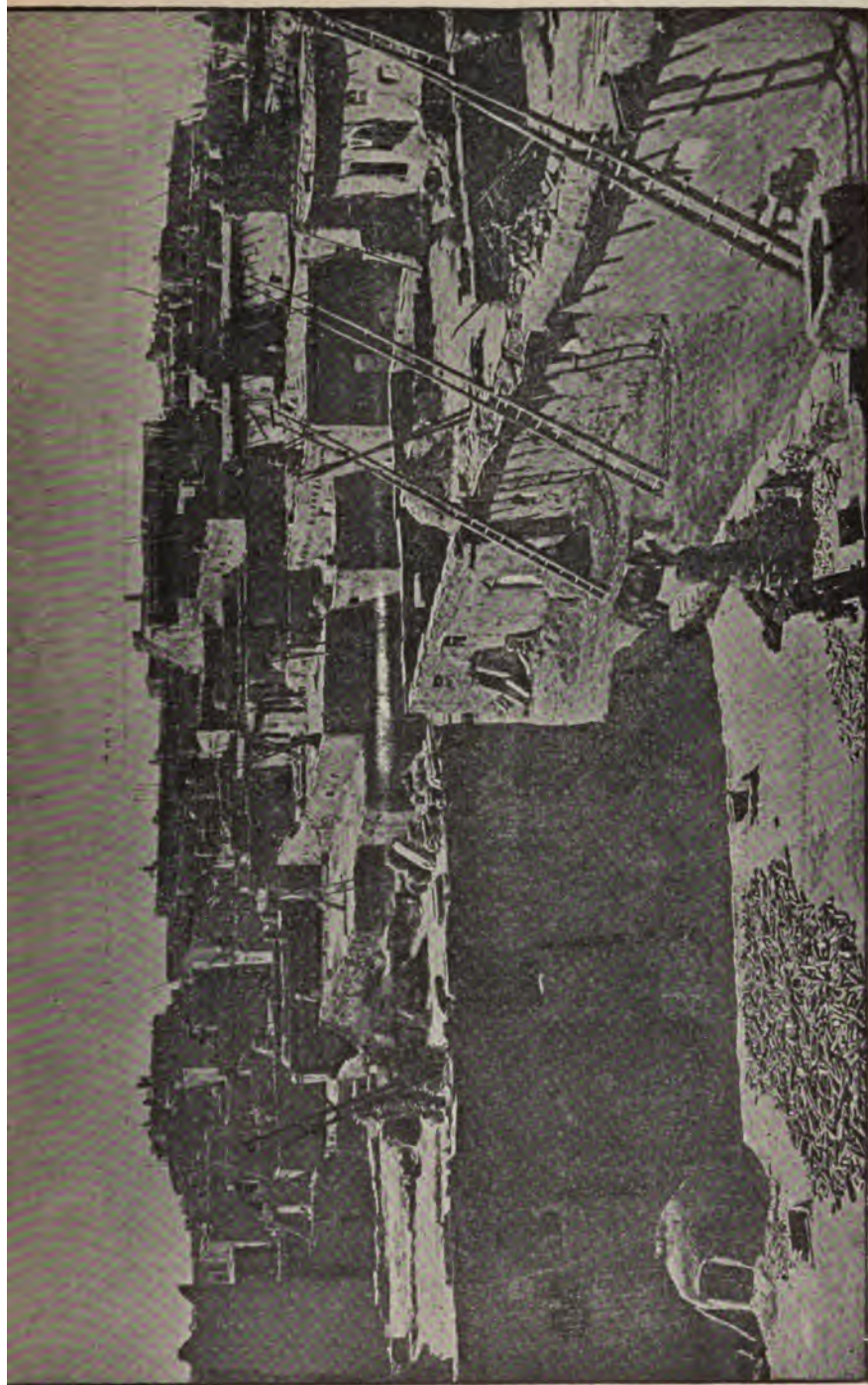
They remind us of the remains of mediæval Europe. There were no lords, nor counts, nor earls, living in castles with their retainers—nor were there any tournaments, or romances such as we read about in Walter Scott's works. There were no horses caparisoned, and no coats of mail.

Still, if there are any buildings in America that can be compared to the ancient castles of Scotland, Ireland, Normandy, and the river Rhine, they are to be found in these so-called great houses. The comparison becomes more striking, however, if we go back farther in history and take the state of society which prevailed when Joshua, the great leader, took possession of the Holy Land. The people dwelt in "walled towns," yet they were organized into clans and tribes which were separate, and Joshua with his more thoroughly organized army was able to overcome the people.

There is another line of comparison. Many nations and tribes have been driven from their homes in the valleys, and have been compelled to resort to the hilltops, and mountains, and have there erected citadels and forts for defense. Such seems to have been the case all over the plateau, even in the region that extended into the southwest as far as Chihuahua in Mexico; for here there were fortresses which were separated from the other houses and which had resemblances to the castles or citadels of the East.

II. We shall take up the description of these villages with their Great Houses, or Casas Grandes, before we proceed with that of the Pueblos, or Great Houses proper. These make a class of villages and fortresses quite unlike the Great Houses concerning which we are speaking.

The description of these has been given by various writers, and we shall quote from them in order to show the difference between the two classes of structures. These have gone by the name of Casas Grandes, which signifies Great Houses, but they were more properly straggling villages, with a Great House, or castle, in the midst, or one side of the village. The houses of which the village was composed were often scattered along side of a stream or irrigating canal. We will begin with the ruins which the Spanish came upon in Sonora, but would say that these resembled the ruined villages which were



MODERN PUEBLO WITH COVERED PASSAGE WAY.



MODERN PUEBLO, SHOWING WALLS, TERRACES, AND DOORS.

situated upon the Gila, and in some respects those in the valley of the Tempe in Arizona. The characteristics of these ruined villages were as follows:

1. They were made up of a series of mounds, or ruins, which marked the sites of houses, which instead of being close together and compact, as were the pueblos, were scattered over a wide area.

2. The villages were sometimes surrounded by a wall, and so they might well be called "wall towns." In Sonora the villages were upon the high lands, but in Arizona they were situated on the low lands. In Sonora the houses were built of adobe as the material was convenient. In Arizona they were built of adobe and sometimes of wattle work, but the houses were separate. No such structure as the honey-comb, communistic houses called pueblos are to be found in this region.

3. There was always in the center or at one side of the village, an imposing group of ruins, to which the name of Casa Grande was given. This group was supposed to be the castle or fortress, and was evidently designed as a place of retreat in case the village was attacked.

4. There was a marked difference in the architecture and the art of the two regions, showing that the people in this southwest province had reached a stage of advancement several grades higher than that which was known to either the Cliff-Dwellers or the Pueblos.

5. The citadels, or Great Houses, called Casas Grandes, were actually castles, and marked that stage where a fortress was entirely separate from the abodes or ordinary houses, indicating that a military class as well as a religious class had risen even when the clan life had remained the same.

6. There was near these ruined houses and castles, or citadels, a certain amount of cultivatable land which was irrigated by the arroyas, or canals, showing that they were agricultural people who dwelt in the villages.

7. The Great Houses were not always in the centre of the village, nor were they always on the low land, for there was a variety in their location. Still, so far as they have become known the villages are all characterized by the presence of some such imposing structure. In this we see the difference between the two classes, a difference which nearly all writers upon the subject have spoken of. Mr. Bandelier has spoken of the difference between the two classes of structures in the following language:

Although the communal Pueblo houses of the North seem to be different from the structures on the Gila and at Casas Grandes, they still show the same leading characteristics of being intended for abodes, and at the same time for defense. In the northern villages, generally, both features are intimately connected, whereas further south the military purpose is represented by a separate edifice, the central house or stronghold, of which Casa Grande is a good specimen. In this, the ancient village of the Southwest approaches the ancient settlement of Yucatan and of Central America, which consisted of at least three different kinds of edifices, each

distinct from the others in the purpose to which it was destined. It seems, therefore, that between the thirty-fourth and the twenty-fourth parallels of latitude the aboriginal architecture of the Southwest had begun to change in a manner that brought some of the elements that were of northern origin into disuse, and substituted others derived from southern influences; in other words that there was a gradual transformation going on in ancient aboriginal architecture in the direction from north to south. At Casas Grandes a marked advance over any portion of the southwest was shown, particularly in certain household utensils, in the possible existence of stairways in the interior of houses, and in the method of construction of irrigating ditches. Nevertheless the strides made were not important enough to raise the people to the level of more southern tribes. Their plastic art as far as displayed in the few idols and fetiches remains behind that of the Nahuas, or Mayas. They seemed to have reached an intermediate stage between them and the Pueblos, though nearer to the latter than the former. Large halls are not found in the ruins of the north. They appear to be almost the rule at Mitla and in Yucatan, and they are met with on the Gila under a climate which is semi-tropical. The usual supposition is that Casas Grandes was the "capital" of a certain range or district, and that the small ruins were those of minor villages. It is my impression that several tribes, probably one of the same stock occupied the country in separate and autonomous groups, and that Casas Grandes is probably the past refuge of one of these tribes. The site is well selected and commanding an extensive view. The cultivatable land commences at the foot of the terrace which is only a few feet above it. No enemy could approach Casas Grandes in the daytime without being discovered. The question of the form of these edifices, whether they were like the pueblos of the north, with retreating terraces, or with straight walls to the top, and a central tower like that of Casa Grande on the Gila, is a difficult one to determine. The conical shape of the mounds would lead to the inference that the central parts were higher than the outer ones; on the other hand, there are outer walls still standing which are three stories in height.

As to the height, Mr. Bandelier says:

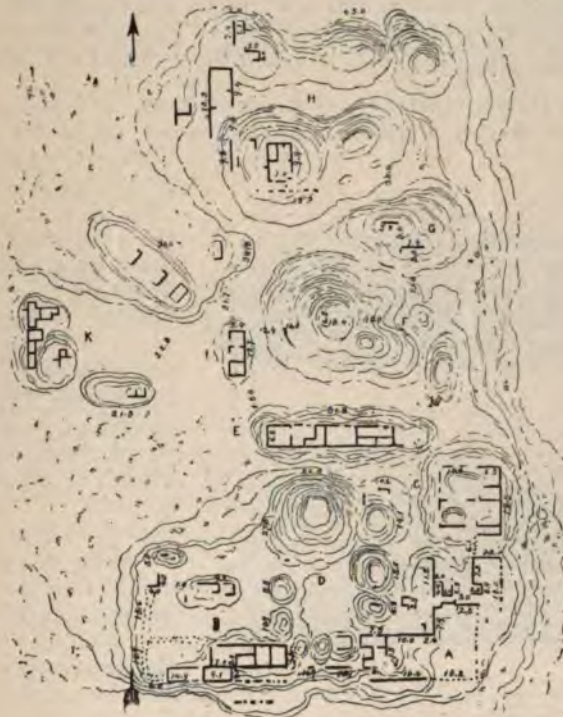
Besides being quite extensive for southwestern ruins, they are also compact, so that the population, if we take into consideration the fact that the buildings were several stories high, may have amounted to more than three or four thousand souls. In that case it would have been by far the largest Indian pueblo in the southwest—and twice as large as the most populous village known to have existed farther north.

From a close examination of what remains of the building, or buildings, I came to the conclusion that the outer portions were the lowest, and not above one story in height, while the central ones were from three to six stories. Hence the large heaps of ruined walls and rubbish in the centre, and in consequence the better preservation and support of that portion of the edifice. By far the larger portions which have fallen are the exterior walls. This arises from the moisture of the earth and the greater exposure to rains. The central parts are in a measure protected by the accumulation of rubbish, and by the greater thickness of their walls.

In reference to the resemblance of the ruins to fortresses, Mr. Bandelier says:

Comparing the architecture of Casas Grandes with that of the Gila, it strikes me that the settlement was more compactly built, and that the edifices present a higher degree of skill, if not in the manner in which they are constructed, at least that in which they are arranged. These were manifestly not for habitation alone, but also with a view of defense. There are, as far as I could see, no fortifications proper, but the size and situation of the buildings, their number, and the strength of the walls, were a means of protection against an Indian foe. The buildings were really fortresses as well as houses. Where a cluster is as large as Casas Grandes it is probable that the downfall was gradual, and probably brought about by various causes.

Mr. Cushing has recognized the same distinction between the northern and southern tribes by means of their traditions as well as their architecture and art. He says there are traditions which show that a people from the north mingled with the people of the south and introduced two forms of culture and two sets of legends and myths. According to these tra-



PLAT OF RUINS OF CASAS GRANDES.

ditions one branch of their ancestral people had at some remote time descended from the north and had there become the aborigines, while another branch was intrusive from the west, or southwest, but had formerly occupied the country in the lower Colorado. This evidence was also confirmed by the customs of the people.

Mr. Bancroft describes the location of Casas Grandes in Sonora as follows :

These ruins are situated on the Casas Grandes River—which flowing northward empties into a lake near the United States boundary one hundred and fifty miles northwest of Chihuahua. They are frequently mentioned by the early writers as a probable station of the migrating Aztecs,

See Bancroft's "Native Races," vol. 4, p. 606.

The cuts on this and the opposite pages represent views of the ruins from the different standpoints, as sketched by Mr. Bartlett.

but these early accounts are more than usually inaccurate in this case.

The ruined casas are about half a mile from the modern Mexican town of the same name, located in a finely chosen site, commanding a broad view over the fertile valley of the Casas Grandes or San Miguel river, which valley—or at least the river bottom—is here two miles wide. This bottom is bounded by a plateau about twenty five feet higher, and the ruins are found partly on the bottom and partly on the more sterile plateau above. They consist of walls generally fallen and crumbled into heaps of rubbish, but at some points, as at the corners and where supported by partition walls, still standing to a height of from five to thirty feet above the heaps of debris, and some of them as high as fifty feet, if reckoned from the level of the ground.

These villages extend over a large area, and the central building, or castle, commands an extensive outlook; that of



RUINS OF CASAS GRANDES.

Casas Grande, of Arizona, covers about sixty-five acres, and the view gained from the Casas Grande is for miles in every direction. Bandelier says: "In the whole southwest where there are thousands of ruins, many of which represent villages located with reference to outlook, there are few if any so well situated as this. There are irrigating ditches near all these villages." Bandelier says of the ditch near the Casas Grandes in Sonora:

"The main irrigating ditch enters the ancient village from the northwest, and can be traced for a distance of two or three miles. It takes its origin near a copious spring, and looks as if it had conducted the waters of the spring to the settlement for household purposes only. It empties into a circular tank 49 feet in diameter and 5 feet deep, and seems to have also passed through this, and supplied a larger tank 72 feet in diameter and 7 feet deep. Another acequia 14 feet wide looks more like a road-bed than a ditch, but it is slightly raised above the ground and shows four longitudinal rows of stones laid at intervals from 4 to 6 feet apart. There are ruins and mounds scattered in small clusters near the various rivers which suggest the former existence of a number of settlements, composed of large many-storied houses, similar to those of Casas Grandes. There are dams and dykes; and between the dykes plots of tillable land, artificial garden beds. The

plains are covered with grass, on which antelopes were grazing in herds."

We here have a picture of village life which differs entirely from that of the Pueblos of the plateau, and still more from that of the Cliff Dwellers of San Juan; thus making three classes of settlements, in two of which there are what are called "Great Houses," though these serve very different purposes. On the plateau they contain the whole village and so are called Pueblos. Farther south they are isolated and form only a part of a village,



FORTIFIED PUEBLO WITH OUTER WALL AND INTERIOR COURT.

and serve as a fortress, or outlook and final place of retreat.

III. The defensive elements which were embodied in these Great Houses are to be considered here. They consisted of the following features:

1. The Great House was erected in such a manner that it became the abode of a number of clans which were governed by a chief with his subordinates, and a fortress which was defended by the people who were gathered en masse, and so constituted a fortified village, as well as a Great House.

2. The arrangement of the terraces and the apartments was such that a dead wall was always presented to the face of an approaching foe, and must be scaled in the presence of the inhabitants of the entire village, who might easily gather on the first terrace for the defense of their homes. Thus a Great House was a fortress which was constantly occupied. Every part of it was arranged for the security of the people.

3. There were ladders which furnished access to the first terrace, and were easily ascended by men, women, and children, and were drawn up by night, and so the house was secured from prowling foes.

4. The stores or provisions for the sustenance of the people were placed below the first terrace, in rooms which were

dark and difficult of access, as they were reached by trap doors and rope ladders, which led into the domestic apartments ; but the people would need to be driven away before the provisions could be reached.

5. Nearly all the Pueblos had a reservoir of water in the court. This was sometimes fed by a spring and small springs which flowed through the village. It was drained, also, so that the water could pass through the gateways to other reservoirs below, and used to irrigate the fields near by. This enabled the people to undergo a siege of considerable length.

6. The Cacique or Governor lived in the upper story, and the houses were high enough so that a view could be gained of the surrounding country. This was the method of defense of



FORTIFIED PUEBLO WITH DRAINED COURT AND RESERVOIR OUTSIDE.

the Mound-Builders of the south, but it was more effective among the Pueblos.

7. There was always a look-out near by in the shape of a tower where sentinels were placed. These look-outs commanded a view of the surrounding country for many miles, as they were either on the mesas or at points in the valleys where the view would be extensive up and down the canon.

8. The pueblos were generally built in groups at varying distances from one another, but always near enough so that signals could be exchanged. The people living at the various villages would come to the defense of the one that was attacked. There were no confederacies, and no general leader for the entire tribe, as each pueblo was like a feudal castle ; yet the tribal bonds were sufficient to hold them together.

9. The government was also defensive, but there was a religious class which held the people closely to the customs which were inherited from their fathers, and thus always had a separate house for their ceremonies. In this respect the

Pueblos differed from the villages southwest. There were no estufas in any of the Casas Grandes, or Great Houses on the Gila, but in their place there was a central house which was used both as a citadel and a temple. In the pueblos the estufas were very prominent, but they were generally beneath the surface and were used merely as sacred chambers, or houses for religious ceremony. Still it is more than likely that even the estufas furnished defense for the Pueblos, inasmuch as they were the places where the men and boys were constantly assembled and from which the real defenders would emerge in the time of danger, their situation in front of the terraces being such that no attack could be made without attracting the attention of the inmates.

10. In nearly all the pueblos there were gateways, some of which were marked by solid abutments of stone, others were mere



GATEWAY TO THE COURT AT PECOS.

passage ways through the walls over which the apartments of the upper stories were built. These were in reality covered ways. They are more common in the modern pueblos than in the ancient. Illustrations of the ruins at Pecos with the courts and reservoirs and gateways and ancient walls are given in the cuts.

Now such were the defensive elements which were embodied in the Pueblos and which attracted the attention of the discoverers and early explorers. There are many illustrations which might be given, but we shall only refer to the descriptions which have been given of the Pueblos on the Rio Grande and the Zuni by the different explorers. The following is Mr. Morgan's description :

They show the principle features : First, the terraced form of architecture, common also in Mexico, with the housetops as the social gathering

places of the inmates; and second, a ground story for safety. Every house, therefore, is a fortress. The first story is closed up solid for defensive reasons, with the exception of small window openings. The defensive element so prominent in this architecture was not so much to protect the village Indians from each other as from attacks of migratory bands coming down from the north. The pueblos now in ruins, and for some distance north testify to the perpetual struggle of the former to maintain their ground as well as proves the insecurity of their condition.

With respect to the manner of constructing these houses, it was probably done from time to time and from generation to generation. Like a feudal castle, each house was a growth by additions from small beginnings as exigencies required.

Mr. Morgan describes a cluster of ruined pueblos on the Animas river, one of which was five or six stories high; "It consisted of a main building, two wings, and a fourth structure crossing from one wing to another, enclosing an open court. The mass of material used in the construction of the



MANNER OF CONSTRUCTING PUEBLO ROOFS.

edifice was very great. The walls were surprising. They varied from two feet four inches to three feet six inches in thickness. Every room in the main building was faced with stone on the four sides, with an adobe floor and a wooden ceiling. The house was a fortress and a joint tenement house of the average American model. These pueblos, newly constructed, and in their best condition, must have presented a commanding appearance, from the material used in their construction, from their palatial size and unique design, and from the cultivated gardens by which they were doubtless surrounded, all of which were calculated to impress the beholder with the degree of culture to which the people had attained."

Mr. Morgan speaks also of nine pueblos within a compass of a mile square, and a round tower, which was the most singular feature in the structure. It differs from the ordinary estufa in having three concentric walls—the inner chamber about twenty feet in diameter, the spaces between the encir-

clinging walls about six feet, the thickness of the wall about two feet and six inches. This tower stands entirely isolated.

IV. We see, then, that the defensive character of the "Great Houses" was very prominent, and that the name they were, to be sure, not ordinary houses, such as people live in nowadays, unless we take the apartment houses or flats. Fortress is appropriate for them. There was, however, a domestic life which embodied itself in them, and which makes the term houses, or "Great Houses," even more appropriate. which are so common in the cities, as our model. The following are the elements of domestic life which became embodied in them:

1. There were apartments for the families; each family having a suite of rooms which was arranged vertically, the storerooms below on the first story, which was closed, and the living apartment in the second and third story, the apartments of the chiefs on the highest stories.



RUINED PUEBLO ON THE CHACO.

2. There were estufas, or kivas in connection with every pueblo or "Great House." These varied in size and position, but were generally in the court and in front of the terraces. They were places where the secret societies assembled, where the youth were initiated and the children were educated, and religious ceremonies were conducted.

3. The houses were built around three sides of a square and had a double wall across the other side. The area thus enclosed was used for religious ceremonies, processions, and for playgrounds. Where the "Great House" was built on the level ground the court was in front of the building, but in some there were two or three courts.

4. There were walls and windows, ceilings and floors, lintels and door-sills in these houses, exactly as in modern houses.

5. The walls were ornamented and whitewashed, and presented an attractive appearance. The outside walls were also built with varied colored stones, and were symmetrical and showed much taste. The angles where the great buildings joined were sometimes bungling, for there were no connecting joints. One wall was set up against another. There were no columns and

no arches, no piers nor lintels, and even the sills were rude, unhewn stone.

These peculiarities indicate the social state of the people. They show that they were in the middle status of barbarism, or about half way between the Mound-Builders of the Mississippi Valley and the partially civilized tribes of Mexico and Central America. The fact that they could build such massive structures which could be occupied by such a great number of families, prove that they were much in advance of the ordinary Indian. They certainly present forms of architecture and styles of art which no ordinary Indian has ever reached. There has been a tendency to minimize their skill and bring down their social status to the level of the hunting tribes, but the contrast between these and the round huts of the Pimas and the conical huts of the Apaches is enough to refute all this. The testimony of the early explorers is in this respect more reliable than some of the later, for they realized the difference between the Indians and the Pueblos. There is certainly a difference between an Indian village and a Cliff-Dweller's village. There is also a marked difference between a Cliff-Dweller's village and the ordinary Pueblos. There is also a difference between these Pueblos and the straggling villages which have been found on the Gila and from there to Chihuahua. These, taken together constitute four or five grades of architecture, and indicate four or five types of life, each one of which was undoubtedly closely conformed to the environment. This is the testimony of nearly all the early explorers, and has been confirmed by the particular study of the structures in these several localities, and especially those which are now in ruins.

We notice further that there is a great difference between an Indian wigwam and a Cliff Dweller's house. There is also a difference between a Cliff-Dweller's house and a Pueblo. There is also a difference between the Pueblos on the plateau and the Great Houses on the Gila, though the people may have all followed an agricultural life, and may be classed with agriculturists rather than with the hunters. If we were to draw the comparison between the prehistoric agriculturists and the modern agriculturists, we should say that those who dwelt in the pueblos give full as much evidence of a comfortable, peaceful, and contented domestic life, and can by no means be classed with savages, or ordinary blanket Indians. This is true especially of the Cliff-Dwellers as well as the Pueblos, for the early explorers have recognized the superiority of the architecture and art of this unknown people, and give their testimony in reference to it, while some of the later explorers seem to bring everything which this mysterious people have left, down to the level of the rudest class of the aborigines. We do well to take this testimony and make our

ideas of the domestic state of the Cliff-Dweller and Pueblo as correct as possible.

The best illustration of the peculiarities of the Pueblos or "Great Houses" which have been spoken of, as well as the differences which exist between them and the other structures, will be found in the ruined pueblos which are situated in the Chaco canon, and which have been often visited and described. We shall therefore give considerable space to these.

Mr. Morgan says:

The finest structures of the village Indians of New Mexico and northward of its present boundary are found on the San Juan and its tributaries, "unoccupied and in ruins." The supposition is reasonable that the village Indians north of Mexico had attained their highest culture and development where these stone structures were found. They are similar to the style and plan of the present occupied pueblos, but as superior in construction as stone is superior to adobe, or cobble-stone and adobe mortar. They



are also equal if not superior in size and in the extent of their accommodation. They are all constructed of the same material and on the same general plan, but they differ in ground dimensions, in the number of rows of apartments, and in the number of stories. They contain from one hundred to six hundred apartments each, and would accommodate from five hundred to four thousand persons.

The impression formed is that these ancient ruined pueblos were both fortresses and agricultural settlements, as they were situated in the midst of a rich valley, but were built up like fortresses. The valley differs from the great cañons in the lowness of the bordering walls. The cañon is about five hundred yards wide, and is perfectly level from one side to the other. There are no traces of irrigating ditches, yet it is evident that agriculture was practiced by the people who dwelt in the pueblos. This is proven by the fact that so many pueblos are crowded together, some eleven or twelve within the space of fifteen miles, each pueblo having been the abode of several hundred people. We may say that scarcely any settlement in modern days has so abounded with a teeming population, and very few have presented more evidences of comfort as well as of culture. If we com-

pare them with the frontier cabins and hamlets we should say that the pueblos were not only the more densely populated, but they were better furnished with the conveniences of domestic life, and the struggle for existence was less intense. The artistic skill which is shown by the specimens of art is quite equal to that which is found among the whites who have made their homes in the same region.

General Simpson first discovered these pueblos in 1849, and furnished an excellent description of them. He, however, found only seven "Great Houses." Mr. Jackson visited them in 1876, and identified eleven sites and made a plat of them all. Mr. F. T. Bickford in 1890 visited them and found them in ruins. He took photographs of them which exhibit their peculiarities. The map given by Lieut. Simpson will show their location and the relative distances between them. The table given herewith will show the size of each and the number of estufas and the number of stories, as well as the distances from one another. The plans which are given in the plates will show the shapes of the pueblos. The cuts which are taken from Mr. Bickford's engravings, will show their present condition. The quotations from Mr. Jackson's account will give their general characteristics. Speaking of the Pintado, he says:

It was not terraced symetrically, but irregularly after the manner of the present pueblos. The ground floor was divided into smaller apartments than the second floor, the rooms in the lower story being divided into two or three. The second story was ten feet between the joists, and the third seven feet. Every room had one or two openings in the form of window-like doorways, the largest of which are twenty-four by forty inches, leading into living rooms. The sills of these doors are generally about two feet above the floor. In the west wall are several large windows looking outward from the second story, and in the north wall very small ones only in the second and third stories. There were a few very small apertures in the first story, mere peep-holes. The walls of the first floor are 28 to 30 inches thick, those of each ascending story being a little less. The masonry, as it is displayed in the construction of the walls, is the most wonderful feature in these ancient habitations, and is in striking contrast to the careless and rude methods shown in the dwellings of the present Pueblos. Great pains were taken in the construction of the doorways, the stones being more regular in size and the corners dressed down to perfect right angles; the same care was given to the openings in the lowest floor as to those in the upper. In the northwest corner of the main building, back of the estufas, and on the second floor, a doorway has been constructed and leading diagonally from one room to another, which displays particularly nice workmanship. The lintels were in nearly every case composed of small round sticks of cedar or pine, placed in contact, but in the smaller openings formed by a single slab of stone. Although there is a great diversity in the size of the stones employed, still they are arranged in horizontal layers, rows of the larger stones alternating with rows of smaller ones, presenting at a little distance a beautifully laminated appearance.

Twelve miles from the Pueblo Pintado are the next important ruins, those of the Pueblo Wejigi. The walls are still standing of considerable height and indicate at least three stories. Two miles and a half farther down are the ruins of Una Vida. Here there is a break about a half mile in the bluff in the center of which stands a remarkable butte some three hundred feet in height. In the gaps we have five distinct views of the

Sierra San Mateo (Mount Taylor). The Canyon is about 500 yards wide and is perfectly level from one side to the other. The pueblo has an L shaped main building, with a semicircular wall. In the enclosure remains of the largest estufa are to be found.

One mile further on are the ruins of Hungo Pavi in quite perfect condition. It is built around three sides of a court which is enclosed by a semi-circular wall. The single estufa is situated midway in the north building, and extended up to the top of the second story. The interior has six counter-forts or square pillars of masonry like those of the pueblo Pintado built into the encircling wall at equal distances from each other.

Two miles further along are the ruins of the Chetro Kettle, whose dimensions are 440 by 250 feet. There are seven estufas, four of which are built together in a solid body, and project from the main building. One of these is noticeable for its height, rising as it does above the general level of the ruin. It was originally divided into three stories all above ground. The remnants of the abutments, between the first and second floors still remain in the wall. In this pueblo was the room described by Simpson, which is 14 x 17½ in size, and 10 feet in elevation. In this ruin there was at one time a wall running around three sides of the building 935 feet in length, 40 feet in height, giving 37,400 square feet of surface. Millions of pieces of stone had to be quarried and dressed and fitted to their places. Massive timbers had to be brought from a distance and fitted to their places and then covered. The other details of window and door making, plastering, and constructing of ladders, must have employed a large body of intelligent, well-organized, skilful, patient and industrious people, under thorough discipline for a very long time.

Five hundred yards below and close under the perpendicular walls of the canon are the ruins of the Pueblo Bonito, the largest and most remarkable of all. Its length is 544 feet and its width 314 feet. A marked feature is the difference in the manner of construction. It was not built with unity of purpose, but large additions have been spliced in from time to time, producing a complexity in the arrangement of the rooms. Several of the interior, parallel and transverse walls are standing full thirty feet high. Three kinds of masonry appear at various places throughout the building, showing that it was built at different periods. The estufas form an important feature, both from the number, size, and from the manner in which they were built. There were twenty-one of them in all.

Three hundred yards further are the ruins of Pueblo Arroyo, so named because it is on the verge of a deep arroyo that traverses the middle of the canon. The walls of the first story are very heavy and massive, still standing to the height of the third story. The arroyo is 16 feet deep, but there is an older channel cutting in near the large ruin of about one-half the depth in which are exposed some old lines of masonry. Since the desertion of this region the old bed has been filled to the depth of at least 14 feet.

Two miles further down are the ruins of the Pueblo Penasca Blanca, which next to the Pueblo Bonito, is the largest in exterior dimensions of all the ruins. The dimensions of the court are 346 x 269 feet; the outer building 400 x 363 feet, four stories in height. There are seven estufas. The rooms average 20 feet in length.

Two hundred and fifty yards below Pueblo Del Arroyo was a stairway hewn into the hard sandstone, each step 30 inches long and 6 inches deep, with hand-holes in the rock in the steepest part of the ascent. On the summit of the bluffs, half a mile over the plateau, are the ruins of the Pueblo Alto. They are situated so as to command the entire horizon. Away to the north stretches the great basin of the Rio San Juan, the summits of the La Plata mountains glimmering faintly in the distance. The Sierra Tunicha stretches across the entire western covered summits of the Sierra San Mateo. In the east the summits of the Jemez mountains are as view, the frosted crown of Pelado shining above them all. This ruin in thus nearly midway and above all the others—dominating them so far as position is concerned.

V. The comparison of the Cliff-Dwellers with the Pueblos will be interesting in this connection. We have shown that the cliff-dwellings were fortresses as well as houses, and were permanently occupied and so had the same character as the "Great Houses" which were situated on the mesas and in the valleys, and were called Pueblos. This has been disputed by Mr. Mindell, who has explored the cliff-dwellings in the Rio de Chelly, as well as the pueblos on the Zuni and elsewhere. His theory seems to be that the cliff-dwellings were temporary resorts, and only to be compared to the Tusayan "Kisis," brush shelters, and the "watch towers" of the Zunis—in other words they were horti-



SPECIMENS OF MASONRY ON CHACO CANYON.*

cultural outlooks, occupied only during the "farming season."†

In speaking of the ruins in Canyon de Chelly he says:

Here, if anywhere, we should find corroboration of the old idea that the cliff ruins were the homes and last refuge of a race harrassed by powerful enemies and finally driven to the construction of dwellings in inaccessible cliffs, where a last ineffectual stand was made against their foes; or the more recent theory that they represent an early stage in the development of pueblo architecture, when the pueblo builders were few in number and surrounded by numerous enemies. Neither of these theories are in accord with the facts of observation.

This view is, however, entirely erroneous for the cliff-dwellings on the Canyon de Chelly and on the Mancos Canyon were plainly permanent dwellings, and may well be called pueblos, for they had all the elements contained in the pueblos, and constituted villages which were placed in the sides of the cliffs for the sake of defense. In other words they were "Great Houses," and resembled those which we have been describing with the single exception that they were built on the ledges instead of on the mesas or in the valleys, and were better fortified than other pueblos or Great Houses.

As a proof of this we would refer to the names which have been given to them. It may be noticed that every one has been

*Rep. Ethn. B. p. 92. †For description of walls, see page 338.

called a house—viz.: Long House, Balcony House, White House or Casa Blanca, and Montezuma House. One has been called the Cliff Palace, another has been called Montezuma Castle; but not a single one has received the name of "outlook," or "summer-house," or "farming shelter," or "refuge," which would indicate that no one else had formed this idea of the cliff villages. Furthermore, if we take specimens found in the Cliff Canyon, the Acowitz Canyon, Montezuma Canyon, Mancos Canyon, or any of those found on the Rio de Chelly, such as Monumental Canyon, Canyon del Muerto, we shall find that they are as worthy to be called "Great Houses" as any of those situated upon the mesas south and east, and far more worthy than those which are found in the valleys to the southwest. This is an



BALCONIES AND DOORS.*²

important point for it helps us to distinguish between the two great classes which are found in this entire region, and which were evidently built by two different races or stocks of pre-historic people. It helps us also to decide about the history of the Cliff-Dwellers and to realize how their history was connected with that of the Pueblos, and is disconnected from the ruins in the southwest.

We shall point out the resemblances and dwell upon the particular features somewhat in detail, for the reason that these are important for the solution of the problems. They are as follows:

1. The cliff-dwellings were built of stone, the very material from which the large majority of the pueblos or "Great Houses" were built. There were, indeed, a few "Great Houses," or pueblos constructed from adobe. These, however, are far to the south in a region where it was more convenient to build of this

*This cut shows the balconies and the doors and the walls of the cliff-house in Navajo Canyon, which was first described by Mr. F. H. Chapin. The following cut shows the doors and the walls in a cliff-house which was discovered by Mr. W. K. Moorhead and Mr. L. W. Gunckel. This doorway resembles those which are common in modern houses, except that there is no stone lintel, but in its place are several wooden rods which are held together by wythes, the ends projecting over the walls which constitute the sills of the door. The resemblance is more one of appearance than of construction. Both of these styles of doors appear in the pueblos.

material. The adobe was the stuff from which the walls of Casa Grande were erected, and constituted also the substance which was used in the scattered houses, which are now buried underneath the mounds of the southwest. There were a few houses built up of wattle work, the posts having been supported by boulders which form the foundations of the houses. These constitute an entirely different class. Their location is marked by what are called the boulder sites, which are very numerous



DOORWAYS OF A CLIFF DWELLING.

in the valley of the Verde. A few houses were built of lava blocks. These have been called solitary houses.

2. They were built two or three stories high and were always closely connected and resembled the pueblos which follow the honey-comb pattern. They differ in this respect from the villages in the southwest and from those in the valley of the Verde. The first are generally isolated houses; the last are not only isolated but are inferior in their method of construction, having been built of boulders, and were only one story high. This is an important distinction, for the "Great Houses" were always more than one story in height. The ruins of the cliff-dwellings are scattered over the sides of the cliffs and are on different levels, but they were evidently when constructed more than one story high. The number of stories in the cliff-dwellings varied according to locality, but were generally equal to those of the pueblos. In the Cliff Palace the buildings were five stories high. The upper stories were on the ledge and the lower stories below. The two lower stories had been built outside the limits of the arch, and lower than the platform of the cave. In the White House (Casa Blanca), in the Rio de Chelley, there was a pueblo several stories high below the ledge and a cliff dwelling on the ledge. It is supposed that they were connected.

3. As to the courts we may say of the cliff-dwellings when defense was the chief thing these were back of the house, between the houses and the cliff. Access to them was prevented by the row of houses, towers and walls which formed a line close to the ledge. But the kivas were placed outside of the row of houses on the sides of the cliffs. Courts were as common among the Cliff-Dwellers as among the Pueblos, but more

irregular in shape, as they followed the lines of the cliff. The courts were used for play-houses, sometimes for weaving, and a part of them for cooking, and resembled the terraces of the "Great Houses." The stores were frequently placed in niches back of the courts. Storage rooms were placed in the sides of the cliffs above the houses, as can be seen in the case of the High Houses on the Mancos (Fig. 3 and 4). These were sometimes placed in niches, or cubby holes in the rock, a few feet above the river valley, which were used for caches or store-houses and were reached by either rope ladders or by climbing up the precipice through the aid of hand-holes. Mr. Cushing says the stores were placed in such out-of-the-way caches in order to keep them from the depredations of the smaller animals which frequented the region, as well as to protect them from the hands of men.

4. The terraces are prominent in all the cliff-dwellings. They were generally turned in toward the cave, or the rock. The houses presented a dead wall to the outside of the cave. In this respect they were just the reverse of the pueblos, or "Great Houses," for in them the court was inside of the house and the walls were either made to curve, or to bend around the three sides of the court, the round towers having their walls made in a complete circuit, the court inclosed by the crescents, which were concave toward the court. In the cliff-dwellings the horns of the crescent were generally turned out and the largest houses were in the concave. The courts were between these and the rocks, the walls and the rocks making a double crescent.

5. The balconies are common in the cliff dwellings and the ancient pueblos. One house is called "Balcony House" on account of the balconies found in it. The Spaniards found balconies in the pueblos at Zuni and Acoma and elsewhere. They took refuge under one during a snow storm. Castenada speaks of this.

6. Roofs, floors and timber work are essentially the same in the cliff dwelling as in the pueblos. Lieutenant Simpson has described the floors in the ruined pueblos on the Chaco. The cut given with this will show how the floors were made. Mr. Mendelliff says, so far as regards the use of timber as an element of construction of the cliff dwellings, the specimens of de Chelly are rude and primitive as compared with the works found in other regions.

7. The doorways † in the cliff dwellings are very interesting. These contain a history in themselves and give hints as to the development of architecture in this far-away region, and its

* Mr. Chapin says the Cliff-Dwellers used hampers in which they carried burdens, and straps to put through their handles, ollas, or water jars.

† An illustration of the doorway in a Cliff-Dweller's house is given in the cut. It is to be seen that there are no piers and no lintels, and that the sides are made of rude masonry, and yet the attractiveness of the doorway consists in its simplicity.

adaptation to the surroundings. The typical Cliff-Dweller's door was made narrow at the bottom and wide at the top, with a square jog half way up. This was for the convenience of those who carried burdens from the valleys below up the cliffs, on their backs, and who could not lay them down before they had reached the inside of the houses. The doors are suggestive of a life which was peculiar to the Cliff-Dwellers. The people were compelled to carry corn from the valleys up to the houses hidden among the cliffs. Even the water was carried in pottery vessels which were placed in a net, which was supported about the head by a band, the net being hung over the back. This would require strength and courage. The women were the water carriers and the doorways were for their convenience.

8. The walls* of the cliff-dwellings resembled those in the "Great Houses." They varied in their finish. Sometimes there were two or three kinds of walls in the same buildings, showing different periods of occupation. Generally the walls of the cliff-dwellings were superior to those of the pueblos. This is the universal testimony of all the explorers. The opinion has been expressed that there was a great decline after the Cliff-Dwellers left their original habitat. There are many specimens of highly finished masonry in the walls; these especially are found in the towers, for in them the stones are cut or broken so as to conform to the circle. The walls were sometimes decorated so as to present a very tasty appearance. A specimen of this ornamentation is seen in the "Cliff Palace" which is represented in the cut. The description of this has been given by Mr. F. H. Chapin, who says "a broad band has been painted across the wall, and above it a peculiar decoration," which is shown in one of the illustrations. The same kind of decoration was found by Mr. Mindeleff in an estufa in Canyon de Chelly. No such decoration has been found in the modern pueblos.

* The similarity of the Cliff-Dwellings to the Pueblos may be seen by examining the cuts and comparing the two classes of structures, especially the cuts which show the many storied houses of Cliff Palace and of the Pueblos on the Chaco; also those which show the masonry of the ruined walls on the Chaco and those on the Animas. Also those showing the terraces of the Pueblos of the Tusayans, and those of the Cliff-Dwellings on the Rio de Chelly.

THE SWASTIKA AND OTHER MARKS AMONG THE EASTERN ALGONKINS.

BY WM. WALLACE TOOKER.

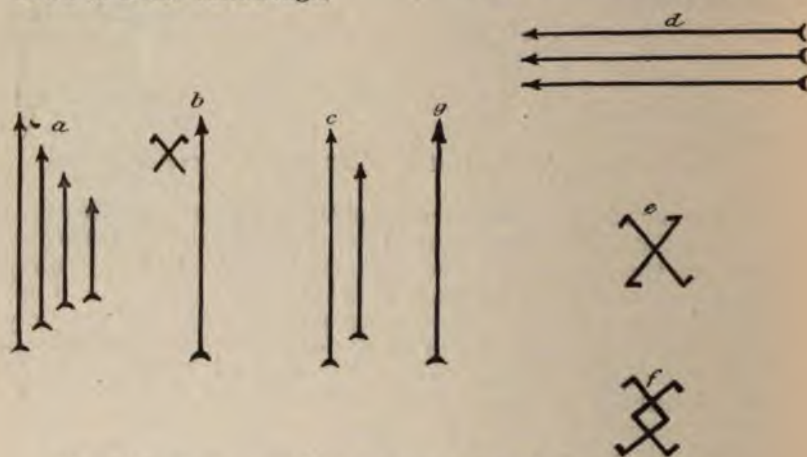
Read before Section H., A. A. A. S., at Boston, August 25th, 1898.

So much has been written expressing various theories concerning the significance, symbolical use, migrations and occurrence in this country of the gammated figure now so widely known all over the globe as the Swastika or Fylfot [i. e., four-footed] that it seems rather remarkable, considering how very thorough all the early works on the genesis of our settlements have been examined and studied for the past decade or more, for everything relating to this and kindred subjects, that the first illustrated form of this figure, as well as the first authoritative information we have as to its uses among the North American Indians, should have been so entirely overlooked. This oversight was probably caused by the excessive rarity of the original work in which it appears, although the matter contained therein as well as the illustrations accompanying the same have been for some years of easy access to students in the form of an excellent reprint at a moderate price.

If those interested in the possible migration of the Swastika figure from about the island of Roanoke on the eastern shore of the United States, westward, through the Carolinas, to Tennessee, and States adjacent, will turn to Hariot's Narrative of the First Plantation of Virginia, in 1585, reprinted by Quarvitch in 1893, from the edition of 1590, containing DeBry's engravings of Jonn White's beautiful and artistic drawings of the natives and their customs,—drawings that speak plainer than words of their anthropological value and truth, they will find delineated in plate number xxiii, a picture of an Indian together with several engraved figures numbered with the first seven letters of the alphabet: The plate is entitled in the quaint style of the period, "*The Marckes of Sundrye of the Chief Mene of Virginia.*" The artist, in description of the "marks" displayed on the plate, and drawn undoubtedly from life as they appeared on the Indians themselves, remarks: "The inhabitants of all the countrie for the most parte haue marks raised on their backs [i. e., tattooed] whereby yt may be knowen what Princes subjects they bee, or of what place they have their originall. For which cause we haue set downe those marks in this figure, and have annexed the names of the places, that they might more easelye be deserned, which industrie hath God indued them withal although they be verye

simple and rude, and to confesse a truthe I cannot remembe that euer I saw a better or quieter people than they

"The marks which I observed among them, are heare put down in order followinge,



THE MARCKES OF SUNDRYE OF THE CHEIFE MENE OF VIRGINIA.

"The mark which is expressed by A, belongeth to Wingino, the cheefe lorde of Roanoac." Wingino was the chief of a village situate on what is still known as the Roanoke Island. His mark is a vertical figure of four arrows of unequal length arranged parallel with the smallest arrow to the right. "That which hath B, is the marke of Wingino his sisters husband." This mark is represented by a single verticle arrow, with a cross figure to the left near the point of the arrow. The top branches are gammated, pointing in opposite directions. This figure may possibly refer to two pipes, or to two tomahawks with the handles crossed, to which further reference will be made. "Those which be noted with the letters C and D, belong unto diverse chefe lordes in Secotam" [a village on the main land]. Here we have in C, a vertical figure, represented by two arrows of unequal lengths placed parallel, while D is a horizontal figure of three arrows parallel also of unequal lengths with the shortest at the top. Three arrows, according to John Lederer, as mentioned in his "Discoveries, etc.," 1670, were the "particular ensign of the Nahyrsan Nation," in Virginia,—a nation now concluded to have been the Monahassanoughs of Captain John Smith. This was a tribe now assigned to the Sioian linguistic group, and in no wise related to the Indians under discussion. "Those which have the letters E, F, G, are certaine cheefe men of Pomeiooc and Aquascogoc." These were two palisadoed Indian villages situate a short distance to the south-west of Roanoke Island on the main land

Here we have under E, the Swastika figure in full bloom,

with the toots bent from left to right, a form more often occurring in America, than that which Dr. Thomas Wilson, in his excellent monograph on the subject, terms the normal Swastika (Report U. S. Museum, p. 149, 1894). In F, we have a double cross figure, which may be made by taking the gammated figure given under B, and reversing another beneath in juxtaposition. It is this particular figure that is depicted under the left shoulder blade of the Indian drawn by White, and, as will be noticed, this figure is really more complex than the Swastika. The figure G is represented by a single vertical arrow with the point to the top,—a mark of common use among many Algonkin tribes. In fact, it was also the mark of the Sachem Miantonomoh on the "Sachem's deed" to Roger Williams in 1638.

This ends the series as noticed and drawn by John White, and which with his description of their use, surely teaches that each and every one are simply marks of tribal or individual identification, and are placed upon the back of an Indian almost the same as we would brand a beast to prove ownership. There is a possibility that the gammated figures represented by B and F, may be intended to indicate, in the first a pair of crossed tomahawks or war clubs, and in the second four tomahawks crossed in pairs with the handles inverted end to end. This again may be the origin of the Swastika figure here shown, i. e., four tomahawks handle to handle forming the cross. However, it really makes no difference what is represented; it is a simple figure, which when compared with other elaborate figures of aboriginal origin, might be evolved in an Indian's brain without accounting for a foreign migration.

Du Pratz remarks of a similar custom observed among the Indians of Louisiana (Jones' Antiquities of the S. I., p. 8): "Warriors who had rendered themselves famous by some gallant exploit caused a tomahawk to be pricked upon the left shoulder. Underneath was indelibly imprinted the hieroglyphic sign of the conquered nation. The figure intended to be pricked was first drawn on the skin, which was then punctured to the depth of the tenth of an inch, and powdered charcoal rubbed in. Marks thus caused were never effaced."

Beverly, (History of Virginia, Book 3, p. 4-23.) a careful observer, also says: "The mark upon his shoulder blade is a distinction used by the Indians in traveling to show the nation they are of, and is perhaps the same with that which Baron La Hontan calls the arms and heraldry of the Indians. One nation paints their arms upwards, another downwards, another again uses the distinction as in all, from whence it came to pass that the Virginia Assembly took up the honour of making Badges of Silver, Copper or Brass of which they gave a sufficient number to each nation in amity with the English plantations, and it was law that the Indians should not truck among the English nations without one of these Badges in their company to

show that they are friends, and this is all the Heraldry that I know is practised among the Indians."

The writer becomes more and more impressed in studying carefully the works of our early historians, in connection with the conclusion of our Bureau of Ethnology as revealed by excavations carried on under its auspices and exemplified in the reports by Dr. J. W. Powell, Dr. Cyrus Thomas, Dr. W. H. Holmes and others, that the best class of the objects of art, whether of shell or copper, do not date back to pre-Columbian times, but in reality belong to the era of settlement. This possibility has been admitted by the best authority on these objects, Dr. Holmes, who remarks (2d Annual Report B. of E., p. 269): "Year after year articles of European manufacture are being discovered in the most unexpected places, and we shall find it is impossible to assign any single example of these crosses to a pre-historic period, with the assurance that our statement will not some day be questioned." These words of acknowledgment merit the most judicious consideration when it is known that these shell tablets, unearthed from mounds, bearing the Swastika, as well as other more complicated designs, in description correspond identically with those made one hundred years after the first plantation in Virginia. Lawson (*Hist. of Carolina, etc.*, p. 315) alludes to this class of ornaments as worn by the Carolina Indians in his time (1700-9) and comments on the appreciation in which they were held, in the following words: "They oftentimes make of this shell a sort of Gorge, which they wear about their neck in a string; so it hangs on their collar, whereon sometimes is engraven a cross or some odd sort of a figure which comes next in their fancy. There are other sorts valued at a doe skin, yet the Gorges will sometimes sell for three or four buck skins ready dressed." Beverly (*Hist. of Virginia, Book iii, chap. xii, p. 58*) also bears testimony to the same effect that: "The Natives of Virginia, of this shell [conk] also make round tablets of about four inches diameter which they polish as smooth as the other [peak], and sometimes they etch or grave thereon Circles, Stars, a Half-Moon, or any other figure suitable to their fancy." Thus from these early authorities it becomes evident that the Swastika figure drawn by White may antedate many years each and every engraved figure of like character from the mounds. In fact, all the more elaborate of these tablets, bearing spirals, circles, volutes, etc., show every evidence of having been laid out and engraved with metallic instruments such as compasses, scissors or knives,—the use of which enabled the natives to execute more artistic work, and to make them in more accurate lines, than those of an earlier date. This is also true of the wampum industry, which under the influence of Europeans, reached its greatest height about the middle of the 17th century when the Indians worked with better tools, and as we are informed by Roger Williams did much better work.

The engraved shell with Swastika, circles and dots, figured by Dr. Thomas Wilson in his work on the Swastika (Report U. S. Museum 1894, Fig. 238. p. 880), as well as the engraved Fulgur (plate 10), resembling statue of Buddha, presents nothing really antagonistic to the foregoing remarks. The "Big Toco Mound," in Tennessee, where these tablets were discovered, corresponds to the site of the "Overhill Cherokee" town of Tommotley on Timberlake's Map of 1762, and I believe with Prof. Cyrus Thomas (12th Ann. Rpt. B. of E., p. 803) that these must be attributed to the Cherokees probably of the previous century. In one of the mounds on the site of the Cherokee town of Chilhowey was found a perforated iron chisel, which from its position when discovered was evidently the centre pendant of a string of shell-beads. In another in same vicinity, corresponding to the town of Sittacoo, interred with the remains of a child, were found four copper sleigh bells or rattles, together with shell ornaments and pottery of the natives. The Buddha figure is probably intended to represent the god *Kiwassa*, *Oke* or *Cakeres*, as he was variously termed by the Algonkin tribes of the coast. Some of these tribes amalgamated with the Cherokees as early as 1623, hence the survival of some Algonquian customs as well as language among that nation. John White illustrates the god *Kiwassa* in plate xxi of Harriot's work. It reveals the figure in nearly the same Buddha-like position as that on the tablet, with clout, beads, etc. It is possible that the same god, dressed in Indian garb, is represented on the copper human figure plates from the Etowah mound, Georgia. John Smith (Arbers Smith, p. 75) says: "In their temples they haue his image euill favoured caured and then painted and adorned with chaines, copper and beads; and covered with a skin, in such a manner as the deformity may well suit such a god." Lawson also informs us (Hist. of Carolina, p. 285-6): "That at the corn dance among the Carolina Indians—the one when the harvest is ended—the old men in order to encourage the young men to labor stoutly in planting their maize, set up a sort of idol in the field, attired in the customary habit of an Indian, with string of wampum about its neck." These extracts prove that the principal god of these Indians was dressed as displayed on the tablet and copper-plates, and would lead us to infer that they were badges of the priests. But even if the shell gorgets incised with the Swastika are post Columbian there is no reason to doubt their aboriginal workmanship and art, for we are told by the same early authorities that it was a monopoly that the English could not compete with on account of time required to work the hard material. To assign these designs, however, to esoteric or mythologic uses is a mistake, and would lead one to believe that the Indian possessed no practical nature in anything he did. The value of "four buck skins," demanded for the best gorgets,

proves his business sense as well as his eminently practical nature. I believe with Prof. Holmes, that they are part of his decorative art work, which necessarily began with simple lines, and were not any more symbolical to the maker, than the finger-nail indentation, or the "pie-crust" impression of the thumb, also appearing upon the clay vessels of the native American potter.

The information given by Beverly, that "Badges of Silver,* Copper or Brass," were ordered to be made for presentation to the Indians by the Assembly of Virginia, has never been mentioned by any archæologist in connection with the discoveries of those remarkable copper objects from various mounds. The statement therefore deserves the unbiassed consideration of those interested, and further research should be made into the archives relating thereto. If same were made and distributed with the designs modeled after Indian tribal marks or types, as Beverly seems to hint and as some of the copper objects seem to indicate, a similar origin might account for some of the copper objects in repoussé work found associated with the shell tablets, for both seemingly belong to the same epoch. The eagle effigy in copper, dug from a mound near Peoria, Illinois, by Major Powell, may have come from the pack of a trader. It was this very object found in a grave with glass beads—a combination that first aroused a doubt in Major Powell's mind (12th Ann. Rpt. B. of E., p. 39) as to the great antiquity of some of the mounds. The eagle effigy similar to the above, and enough like it to have been made by the same hand, together with the copper plates in repoussé work discovered in mound C of the Etowah group, Ga., gives us testimony to the same effect, in bearing marks of metallic tools, as well as repairs made by riveting cracked and broken parts. The same origin may account for the brass plates of the Tookabatchas referred to by Prof. Thomas in his Shawnees in Pre-Columbian Times (*Amer. Anthropologist*, vol. 4, p. 248-9). The same might also be said of the large copper plates found by Mr. Clarence B. Moore in the Port Royal Mound, Fla., which bear in the same stamped work the conventional birds' heads, in each corner, copied after those on the shell tablets,—in fact, European work made to resemble Indian designs.† However this may all be, there is a grave doubt about the

* Since this paper was written I am informed by Mr. Philip A. Bruce Secretary of the Virginia Historical Society, that in their Society's collection there is a badge-like medal of silver in ornamental repousse work. It is stated that it was presented to the Potomac Indians about the time of James II. This badge is about one and one-half inches in its largest diameter, and is quite ornamental. On its obverse are the words 'Patomeckes,' on the reverse "Yr King of."

† The shell gorgets, incised with four birds' heads, issuing from each side of a central square composed of three or more lines with looped corners, thus making the Swastika, are the most interesting of the series so far discovered. Dr. Holmes in his "Art in Shells," suggests that either the Ivory-billed woodpecker, swan or Heron was represented, but prefers the first, which has been generally accepted. He may be right, but another bird impresses himself on my mind, and he meets the drawing as averaged up from the different tablets fully as well as the others; that one being the King-bird (*Tyrannica Carolinensis*)—a bird, favorably regarded by all the Indians on account of his courage. Roger Williams (*Key*, chap. xv) says of him: "Sachem; a little Bird about the bignesse of a swallow, or lesse, to which the Indians give that name because of its Sachem or Prince like courage and command over greater Birds, that a man shall often see this small Bird pursue and vanquish and put to flight the crow and other Birds farre bigger than itselfe."

aboriginal workmanship on all these copper objects, whether in repoussé, incised, or in stencil,—a doubt which does not effect the shell-gorgetts. The personal exploit marks, from which the Swastika probably took its birth in eastern North America, are simply emblematic signs of personality. These marks, whether tattooed on the individual or otherwise, must have been often noticed in the colonial days, but are very seldom mentioned. That they were in evidence among our early settlers, and emblematic of the individual or his deeds, without regard for the clan system and totem of the nation, every conveyance of land dated in the 17th century bears witness. It is also quite evident from the constancy and frequency of the same mark, delineated by the same hand, on various deeds, that these marks were regarded by the grantor and grantee in much the same light as we regard our own sign manual to-day.

Sir William Johnson is the earliest authority I have been, so far, able to find, that refers to this custom of the Indians. He writes to Arthur Lee, Esqr., of Virginia, in 1777 (*Doct. Hist. N. Y.*, vol. 4, p. 437): "The figures which they affix to deeds have led some to imagine that they had characters or a alphabet. The case is this, every Nation is divided into certain number of Tribes, of which some have three, as the Turtle, Bear & Wolfe, to which others add the Snake, Deer, &c., each of these Tribes form a Little community within the Nation, and as each has its peculiar symbol, so each Tribe has the peculiar Badge from whence it is denominated, and a Sachem of each Tribe being a necessary party to a fair conveyance, such Sachem affixes the mark of the tribe thereto, which is not that of a particular family (unless the whole tribe is so deemed) but rather as the public seal of a corporation."

These remarks concerning the Iroquois customs of one hundred and twenty-one years ago, refer to the clan system of that nation so well explained by Morgan in his "Houses and House Life of the American Aborigine" (*Contrib. to N. A. Eth.*, vol. 4). The remarks will apply to other nations as the same clan system prevailed among the Algonkin tribes (see Heckweler's *Indian Nations*, Phila. 1876, pp. 253, 4). Loskiel (*Mission of the United Brethren*, p. 23, 1894) remarks on the custom in vogue among the Delawares in his time. "If any treaty of peace, contract or commercial papers are required to be delivered to Europeans, signed by their Chiefs or Councillors, they never do it themselves, but get others to subscribe their name. Then each puts his mark to his name, which is often nothing but a crooked line or a cross, sometimes a line in the form of a turkey's foot, a tortoise or some other creature." Loskiel probably referred to those able to read and write, which many of those of whom he speaks, were able to do in his day, but preferred the old customs of the tribe. The quotation also shows that the Delawares in affixing the "turkey" or "turtle or some other creature," adhered to their tribal symbol in some cases. That the Indians did not always follow this cus-

tom, but affixed their own personal marks or whatever else suited their own taste and convenience has been also referred to by Sir William Johnson in the letter before mentioned. For instance, when interpreting a deed of 1726, a copy of which had been sent him, he remarks:—"All the natives of the Confederacy [Five Nations] did not subscribe it, and those chiefs that did, neglected to pay due regard [to] their proper symbols, but signed agreeable to fancy, of which I have seen other instances, altho' the manner I have mentioned is the most authentic and agreeable to their orig^l practice."

It is believed that Johnson is partly right and partly wrong in the above statement, and that the chiefs and other Indians when not employing the tribal symbol made their own particular mark. That is, in most instances they did so, the exception being, where a common Indian had no mark. This is the conclusion arrived at, in the examination of many original deeds so signed by members of the Algonquian family in the 17th century. "Cockenoe-de-Long Island," for instance, an Indian whose career I have sketched at length from documentary sources—see John Elliott's *First Indian Teacher and Interpreter, Cockenoe-de-Long Island*, 1876—who affixed his mark to more deeds and papers than any other Indian of his time known to me, invariably, on every original deed seen by me, used the letter A, thus indicating his own distinctive mark, although he could read and write. The reason for the choice being found in the fact that it was the first letter he learned from John Eliot, as well as the first letter of the Alphabet; otherwise it could present no particular significance.

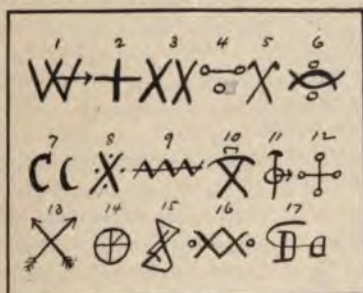
Some of the best examples, as well as the most varied of these personal marks, for none as far as we can learn, show any tribal or clan symbolism, appear upon the Indian deed dated July 10th, 1757, for Staten Island or *Equahous* (Dutch notation); *Aquehonga* (English notation); *Achwowängcu* (German of Zeisberger); "high steep bank" to Hendrick Van der Capellen the Ryssel, and signed by the hereditary owners on the land of *Wearhinnis Conwee*, at the *Hespatingh* "hill place," near *Hackensack* in New Netherlands. This deed is preserved in the archives of the State at Albany, N. Y.; but can be seen and studied nearly as well in the copy printed with fac-simile marks in the *Colonial History of N. Y.*, vol 14, pp. 393-4. These marks evidently represented something to the Indians that made them; in fact, may be intended as a hieroglyphic representation of their own names,* as the possible interpretation of some would seem to indicate.

The remarks on each mark will be brief as the limits of this paper will not warrant extended comments, as it is intended as only a preliminary study of a very interesting branch of American archæology.

* Mallery (10th Annual Rpt. B. of E., p. 611) says: "The several tribal designations for Sioux, Arapaho, Cheyenne, etc., are their emblems precisely as the star-spangled flag is that of the United States, but there is no intrinsic symbolism in them. So the designs for individuals, when not merely translations of their names, are emblematic of their family, totems or personal distinctions, and are no more symbols than are the distinctive shoulder straps of an army officer."

Taking them in order *Waerhinnis* Couwee of Hespatingh makes his "marks" [sic] both as grantor and witness with slight variation, as represented in figure 1. This mark, without the arrow addition occurs on other Algonquian deeds of about the same period, but from the exactness with which some are drawn they are undoubtedly copied from the letter W. His name signifies "the waving pine-tree;" and the marks therefore may indicate the sharp needles of the pine, while the arrow may have been the mark of a vanquished foe. The mark of *Necktan* of Hackingsack as under figure 2, is a simple Greek cross. Sir William Johnson says: "They frequently make use of a cross when they subscribe an ordinary deed, after the example of the illiterate among us."

Saccis, or *Sackis* (*P'saks* "a bird") Sachem of Tappaan, as given under figure 3, affixes a pair of oblique or St. Andrew's crosses. Among some tribes in the west such characters have



MARKS FROM AN INDIAN DEED OF
STATEN ISLAND.

a definite meaning, but it is probable that they mean nothing whatever as made here.

Mattenouw of Hespatingh as in the curious figure under 4, also affixes his mark both as grantor and witness. The figure may represent his name "he overtakes (*Mattannau*) i.e., one caught, and the other not yet taken. Among the Iroquois, however, a similar figure was once the emblem of the Potato gens. It also resem-

bles some of the western time-counts.

Taghkoppew of Tappaan, as represented by figure 5, makes use of the double Tomahawk figure, to which I have already alluded, as having been seen by White in Virginia. *Taghkoppew* (*Tohkupunneau*) "he bindeth up." In the Ojibwa, according to Dr. W. J. Hoffman (7th Ann. Rpt. B. of E., p. 186-7), a similar figure in the Medé record represents a woman, which shows that characters made by one set of people have a different meaning. Among others, *Temere* of Gueghkongh, affixes the curious decorative figure given under 6, which may represent almost anything that fancy might dictate, in the absence of actual knowledge of what was the intent of the maker. *Temere* is possibly an abbreviation of *Temenend* "the affable," so often mentioned as a chieftain's name in the Legends of the Lenni Lenapé, as translated by Dr. Brinton. *Weertsjan* of Hackingsack, as will be observed under figure 7, makes two curved upright lines, one of which resembles, if it is not actually, the letter C. *Weertsjan* has a decided Dutch appearance and sound owing to its notation in that language, but still it

may be the Algonquian *Weenishean* "he surrounds or encompasses."

Kekinghamme or *Kekinghauwe* of Hackingsack, as his name is varied, affixes the figure 8, an oblong cross with notes at the intersections. "He hath found it" (*Kahkenauwe*) is the signification of his appellation.

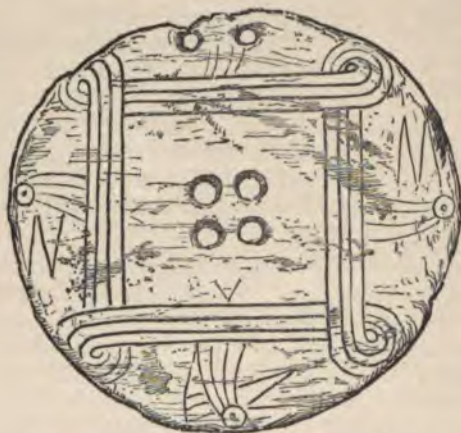
The mark of *Wewetackamen* of Hackingsack, as under figure 9, is a character sometimes employed by Algonkin tribes to indicate the trail of a serpent along a path. It is doubtful whether it has the same meaning here. The centre line dividing the zigzag may indicate his name "much divided."

THE TABLET FROM LONG ISLAND.

Minquasacking of Hackingsack, as in figure 10, affixes the conventional figure of a vanquished foe, i. e., a headless human figure, so often occurring in aboriginal photographs. Sir William Johnson says of the Iroquios: "They delineate bodies without heads to express scalps." In my collection of Long Island relics, now in the possession of the Brooklyn Institute of Arts and Sciences, there is a unique stone tablet which is very accurately represented in the above cut. The

"vanquished foe" is engraven on both sides of the tablet, and sixteen tally marks on its edges probably indicates the number vanquished. *Minquas-acking* seems to denote "in the *Minqua* (Susquehanna Indians) country." He was perhaps a *Minqua* adopted into the Hacking-sacks.

Mintamesseeww Sachem of Gueghkongh, as under figure 11, affixes a trophy-like emblem of a Toma



SHELL GORGET FROM TENNESSEE.

hawk, Shield and Arrow. His name signifies "corn-cut-with-a-knife."

Teringh or *Terneke* of Queghkongh, as under figure 12, affixes the same mark both as grantor and witness. It is a cross figure bearing circles instead of being gamated, and in that respect resembles the ogee Swastika. His name signifies "the crane" (*Tarecke*.)

Acchipoor Sachem and Chief Warrior (sic, of the tribes uniting in the conveyance) as in figure 13, is represented by two crossed arrows, giving possibly the emblem of war, as two ar-

rows tied with a snake's skin was equivalent to a declaration of war. The arrow and bow are common marks on many Indian deeds.

Oratam, Sachem of Hackingsack, as witness only, affixes figure 14. This is the ring cross, so often occurring in native American art and elsewhere; this figure, however, differs slightly in having a division in one of the segments. His name signifies "always the same."

Pennikeck, Sachem of Hackingsack, as a witness affixes figure 15, which resembles the familiar hour-glass figure of many Algonquian pictographs. In this instance, as it is drawn rather irregular it may indicate his name "the falling-house."

Keghtackaan Sachem of Tappaan, as witness, make the decorative figure given under figure 16.

Keghtackeean Sachem of Haverstroo, as under figure 17, affixes what seems to be two letter D's facing each other connected by an irregular line. Still the intent may have been to represent two bows shooting at each other. These last two Sachems seem to have names alike, the main elements of which denote something "mild" or "gentle."

It will be observed that some of these marks are fully as elaborate and were as difficult to originate as the Swastika, while others are more so. How much of this art is due to contact with the whites, for the Indians were great copyists, it is difficult to judge. The Dutch of the same period, especially those unable to read or to write, used some very elaborate marks, among which was the Swastika (Col. Hist. N.Y., vol. 1. p. 195) and other cross-like figures.

RECENT EUROPEAN ARCHÆOLOGY.

BY DANIEL G. BRINTON, M. D.

Palaeolithic Finds. M. Thieullen, a member of the Anthropological Society of Paris, tried to persuade the Society last winter that he had discovered an abundance of human objects in the glacial drift of Northern France, and that they represented the customary tools and weapons of the earliest man. The Society were not convinced by his demonstrations and persisted in believing that the specimens were merely natural forms, vaguely simulating man's handiwork. M. Thieullen has published at his own expense a handsome memoir, freely illustrated, in order to defend his position.

The Palaeolithic Age. In the picturesque valley of the river Vesdre, in Belgium, some interesting cave explorations were conducted last year by M. Tihon, who reports about them in the "Annals of the Archæological Society" of Brussels. From a single one of the caves he was lucky enough to take out 2,300

history of the fine arts should put aside about eight dollars to buy the admirable book of Dr. Hoernes, published this year in Vienna, entitled *Urgeschichte der bildenden Kunst in Europa*. Even if he do not read German, the numerous illustrations will prove instructive enough for the money. Its over 700 large octavo pages are devoted to portraying the history of fine art in Europe, beginning at the beginning and ending when history begins, about 500 B. C.

The introduction contains some suggest vereflections on the evolution of the esthetic arts in general and their relation to the development of civilization. Unlike many other anthropologists, Dr. Hoernes maintains, and certainly with justice, that the taste for fine art, the esthetic sense, belongs to man in all places and ages, to the primitive cannibal as well as to the modern esthete. All the arts he teaches have been cultivated by all tribes and nations; but in widely different degrees, one always more than the others. Thus, this art became, at the time and place, the principal vehicle of the esthetic feelings and occupied a guiding or "hegemonic" position with reference to the others. For example, in the Middle Ages, architecture overshadowed all other arts, and developed itself to such a degree that its creations have never since been paralleled.

Dr. Hoernes commences with the art products of the oldest stone age, and is very full upon the bronzes, carved figures, pottery and plastic productions of the pile-dwellers, early Greece, Italy and the Hallstatt necropolis. For a long time to come this must remain an indispensable work of reference to the student of European archæology.

The publication of this costly volume is but one of many evidences of the zeal with which pre-historic archæology is cultivated in Europe. There are so many local societies and journals devoted to it on that continent that one despairs of keeping informed except through abstracts and reviews. This assures one great satisfaction;—that is, if an explorer *does* make a discovery of importance he is sure of a large audience and prompt recognition.

University of Pennsylvania, Philadelphia.

THE ORIGINAL HOME OF THE ARYANS.

BY CHAS. W. SUPER.

One of the problems to the solution of which comparative philologists have, during the the last five or six decades, given much thought is, Where was the original home, the birth-place, so to speak, of the Aryan race? What part of the earth's surface did it occupy before it split up into the several branches that still point to a primitive unity? Investigators, though working with the same data, have reached widely different conclusions, some fixing the starting point in central Asia, others in different parts of Europe, and a few even in northern Africa. Closely related to this question and indeed constituting a part of it, is the inquiry into the civilization attained by the undivided people. What advances had they made on the road to their subsequent predominating position among the races of the earth while they yet spoke the undivided language that subsequently sent out the eight or more different shoots in which are preserved all that we know, or think we know, of the mother-tongue. Into the answers that have been given so much that is subjective has from the very nature of the case entered that they differ widely from each other. Max Müller, who represents the poetic extreme, pictures the primitive people as living an idyllic life, free not only from many of the ills that afflict our over-wise and hyper-reflective age, but likewise as endued with some moral qualities that subsequently almost vanished from the earth, and as practising virtues that have rarely guided the relations of their descendants to each other. He says among other things: "It should be observed that most of the terms connected with chase and warfare differ in each of the Aryan dialects, while words connected with more peaceful occupations belong generally to the common heirloom of the Aryan language. All the Aryan nations had led a long life of peace before they separated, and their language had acquired individuality and nationality as each colony started in search of new homes—new generations forming new terms connected with the warlike and adventurous life of their onward migrations. Hence it is that not only Greek and Latin, but all the Aryan languages have their peaceful words in common, and hence it is that they all differ so strangely in their warlike expressions." It is safe to say that the distinguished professor will find few among the more recent investigators to agree with this main contention. The theory of evolution is against him; the whole history of the human race contradicts him; and much that he sees in the primitive stock of Aryan

words, no one else who has studied them at first hand, has been able to discover. It is an attempt, albeit an unconscious attempt, to clothe the exploded myth of a Golden Age with the garment of modern science. The other extreme—and we may call it that of plain prose—is represented by the late Victor Hehn in his important work on domesticated plants and animals.* He undoubtedly came much nearer the actual facts. He makes it exceedingly probable that the primitive Aryans before their dispersion and perhaps for a long time afterwards, advanced but little above the lowest stages of social progress; in short they were hardly any more than savages, such as are still found in many parts of the earth.

It is a well established fact that while Europe was yet almost unknown or at least buried in the obscurity of the prehistoric age, the regions about the lower course of the Euphrates and Tigris and a large portion of the Nile valley were the seats of an advanced civilization. The arts and sciences flourished, commerce to different lands was carried on, systematic governments had been established, and literature was cultivated. In fact, it is probable that the whole of western Asia was covered with an advanced culture, centuries before the faintest beginnings had been made on the opposite shores of the Aegean, assuming that it occupied its present site.

The most important of the recent writers, if not the very latest, who has discussed the relation of the Aryan to this earlier civilization, is Rudolph von Ihering, the celebrated writer on Roman law. In an incomplete posthumous work edited by Victor Ehrenberg entitled "*Vorgeschichte der Indoeuropäer*," the learned author discusses in a new and original way a number of problems in such a manner as to throw light on this interesting question. Von Ihering says that he was led to write this book by the desire to find out what the Romans had devised for themselves in their political system, what they had inherited and what modifications they had made in the inheritance. He thinks that owing to their tenacious adherence to ancient customs these people were particularly well suited to afford an insight into the remotest times. Some of his conclusions it is here proposed to lay before the reader.

The primitive Aryans dwelt in a hot climate. Their clothing was scant, consisting only of an apron. They began their migration from their original seats early in March. They were unacquainted with agriculture. They were very numerous. They were a settled, pastoral people, had no cities, did not know the use of metals, and their legal system was on the lowest plane. The starting point was the region lying on the northern slopes of the Hindoo Koosh mountains. Contrary to the view defended

* *Kulturpflanzen und Haustierte in ihrem Uebergang nach Griechenland und Italien so wie in das uebrige Europa.* Berlin, 1894.

by a majority of the historians of antiquity, von Ihering stoutly maintains that the European made Europe, not vice versa. One of the leading questions which he tries to answer is, What is the ultimate cause that gave the European such a different character from his brother who remained behind in Asia? Yet he is not always consistent in his answers, for in several passages he lays great stress on the transforming power of habitat: so that he not only seems to believe that the European made Europe, but that Europe made the European. The truth of the matter is that in such a case we have to do with forces the strength of which no man can estimate, and it is not surprising that our author is not always sure of his ground. How different the history of South and Central America would have been if it had fallen into the hands of the English instead of the Spanish! The English people found themselves settled in an island that had not a single first-class harbor, and yet they have become the greatest sea-faring people on the globe. It is not the whole truth to say that they were compelled by the exigencies of their situation to become a commercial people. It is probable that if the English had settled the Iberian peninsula and the Spanish had occupied Great Britain, the history of the two nations would have been substantially the same, but that of the respective countries widely different.

Von Ihering maintains that the great change in the original character of the Aryan took place in what he calls his second home. This second home he locates in the region between the mouths of the Volga and the Don. Here his dreamy, apathetic and unpractical character as exemplified by the Indic and Iranic people of history was transformed into the energetic, restless and enterprising nations that spread over Western and Southern Europe. This region was, however, not a vacant wilderness; it was inhabited by a people who were tillers of the soil, and who had in other respects made the first steps on the road toward civilization. When the westward-moving Aryans came upon this vast plain they subjugated its inhabitants and reduced them to serfdom. This milder form of slavery, Tacitus found still in existence among the Germans. Here the new comers, partly from choice and partly from necessity, adopted a more settled life and became likewise tillers of the soil. More system was also introduced into the military affairs of the conquerors and another step forward was taken. The agriculture that he learned was, however, of the most primitive sort. He had not yet acquired the use of iron, and his plow was wholly of wood. As animals had not yet been domesticated, at least for draught, man and wife drew the primitive implement. Ihering finds proof of this in the Latin *con-jux* (Gr. *zeugos*, a yoke of oxen), and *jug-um*, which words and their congeners are to be taken in a literal, not in a figurative sense. Here he differs, "*toto cœlo*," from those com-

parative philologists who see a metaphor in almost every primitive word. In these terms, then, we have a reminiscence of the wooden yoke, by means of which the simple wooden plow was originally drawn by two human beings.

In this Indo-European community, land was held in common, a form of ownership that still prevails to some extent in Germany and quite extensively in Russia. On the contrary, among the Greeks and Romans no trace of it has yet been discovered. Slavery, likewise, as it existed in Greece and Italy, was a modification of the early serfdom, made necessary by the institution of private property. Yet certain ceremonies, partly juridic, partly religious, practiced to the latest times, were survivals of earlier customs that arose in the communistic period.

In determining the order in which the various branches departed from their second home, Ihering is guided by the probability that the first goers having the choice of territory would make the shortest journey. The Greeks and Romans accordingly remained the briefest time in their original European abode, the Greeks departing first, the Italians next. These were followed by the Kelts, who were compelled to go farther westward. The Germans were still later. As the portion of territory which they were forced to occupy was inferior in quality and productiveness to that which their predecessors had taken possession of, they were restless and tried to better themselves. For this reason they were the most unruly of the peoples of Europe, not by nature, as has been often affirmed, but by necessity. As they were continually trying to improve their condition, we find them making inroads into almost all parts of Europe except the northeastern. While the other peoples of the Aryan stocks were in a measure content with their lot, the soil and climate of their new habitat, the Germans were not.

The last branch to leave their second home was the Slavs, in fact they can hardly be said to have left it at all. They simply extended its boundaries in the direction of least resistance. They are the most conservative, apathetic, and servile of the people of Europe, for the simple reason that in virtue of their geographical position and the direction of their expansion they were to a large extent freed from the necessity of driving out earlier occupants. Nearly half of Ihering's volume is devoted to an examination of Semitic civilization and the underlying causes of its peculiarities. There is room here to call attention to but one or two more points. He holds that the oldest inhabitants of the Mesopotamian regions were originally mountaineers who descended into and settled in the plains below. With the conservatism that is so prominent a trait in the character of primitive people they endeavored to preserve their ancestral mode of worship so far as possible. As their sanctuaries had been built on high places before their

descent into the fluvial regions, they constructed artificial hills below, the stagings of which were feeble imitations of the rocky sides of their native hills.

The author's explanation of the origin of the Sabbath is also, I believe, original. Reasoning from the well established fact that the Babylonians reckoned according to the duodecimal system twelve days would make a complete period. As their stupendous artificial structures, like those of the Egyptians, were constructed by laborers who were either actual slaves or subjugated peoples, it was a problem with their taskmasters how to make their labor as profitable as possible. To this end a periodical day of rest was indispensable. One day in twelve was not sufficient, but one in six was found to yield the best results. The seventh or Sabbath thus became a day of rest from economic, not from religious motives. He cites a number of passages from the Pentateuch to prove that the Jews, who got their Sabbath from the Babylonians, regarded it solely as a day of rest, not as a day for worship. It was a holiday, not a holy day, as the Christians afterwards made it. To keep the Sabbath holy is to refrain from labor.

This book of Ihering's is certainly one of the most suggestive that has for a long time been written on the theme of which it treats. Whether many of its hypotheses will receive the assent of competent judges remains to be seen. Unfortunately, it is incomplete. Had its distinguished author lived to finish his work he might have modified some of his views.

THE BONES OF COLUMBUS.

The Spaniards just now are wringing their hands at the idea of the ashes of Columbus falling into the hands of the detested Yankees. The remains of the great discoverer lie buried in the choir of the cathedral at Havana. The dead body of Columbus has been as restless as that of our own St. Bede. It has never been able to find a quiet resting place.

The great sailor died at Valladolid, in Spain, on Ascension day, 1506. He expressed a wish to be buried in the island of San Domingo. Joannes' his wife, took incessant care of the dead body of her husband. She carried it about with her when she travelled. For three years the body was deposited in the church of San Francisco, in Valladolid, where it first found its resting place. In 1513 it was removed to Saville. There it remained for twenty-three years. The body was again disinterred and carried across the Atlantic. It found its next resting place in San Domingo, as Columbus had wished. When the island was ceded to France the bones were taken to Havana, and solemnly buried in the cathedral in January, 1796. What remained of the body was placed in an urn in a niche in the left wall of the chancel, and covered with a marble slab.

Recently the inhabitants of San Domingo have claimed the bones of the discoverer of the new world still rest in their soil. The fact appears to be that when the bones were removed to Cuba the priests of San Domingo kept back half and hid them in the south of the sacrista of their cathedral. Here they were discovered in 1879. If the Spanish government again claim the ashes of Columbus, the restless spirit of the explorer will have to return to Spain, for every inch of the territory which he presented to his adopted country will have passed from her rule. The Havanese will probably, however, not surrender their principal relic without a struggle.—*London News.*

EDITORIAL.

OUR NEW NEIGHBORS.

American civilization has had many difficulties to contend with, but so far has been able to triumph over them. Herbert Spencer said in 1882: "The Americans can reasonably look forward to a time when they will have produced a civilization greater than any the world has known." He, however, did not anticipate at that time that we would, before the century ended, be taking in, the islands of the sea on both sides, or that races which are counted as among the lowest would be numbered among our citizens. The question now is, what will be the effect upon our civilization? From a commercial standpoint the expansion of territory seems to be very fascinating, especially as the larger kingdoms, such as Russia, England and Germany, are seeking to take advantage of the changes which have occurred in the earth. Dismemberment has been threatened to China. Slices of territory have been sought for by the Czar of Russia; and monopoly of trade and the control of the railroads is sought for by other nations further away. Spain has shriveled to a fifth-rate power. America has taken rank among the *first*. Every citizen feels proud of this, and the patriotism and unity of feeling are very gratifying. But civilization is as important as trade—it is, in fact, paramount.

Missionary zeal has been awakened by the opportunity to Christianize the heathen nations situated in distant lands. This has been advocated so warmly, that it has eclipsed every interest at home. But has the assimilating of the diverse elements in our own population advanced so far as to permit us to take the new work into our hands without providing for that which is near by, but is liable to be forgotten?

The populations of the islands of the sea must be considered at the same time that we review the additions made to our territory. We have taken Indians and negroes into our body politic and made them citizens since the war of the Rebellion. We are now thinking of taking Cubans and the inhabitants of the Phillipine Islands, as well as those of Hawaii. Let us consider for a moment what elements are likely to be introduced. Cuba is first to be studied. What are plainly the elements of population here? If we go back to the time of the discovery and read the descriptions given by Columbus we find that there was a "ground race" there, which was allied to that in South America. The Arawacks were the aborigines; a people who plied the sea in dug-outs, and "carried canes dried in the sun in place of weapons, and always went as naked as they came into the world." "In all these islands there is no difference in the appearance of the inhabitants, and none in their customs and language, for all understand each other." In each

island there are many boats made of solid wood, quite narrow, yet in length and shape similar to our two-bankers, but swifter in motion, and manned by oars only. Some of them are large, some small, and some of medium size; but most are larger than a two-banker rowed by eighteen men.

"The island was well populated and divided into a number of tribal areas, the names and locations of which have been preserved. Their villages consisted of ten or a dozen communal houses, built of perishable material. Stone structures are not mentioned. The natives were of medium stature, with narrow noses and large eyes. Artificial deformation of the cranium is distinctly mentioned.

"They were skilful boatmen, and there is ample evidence that their trading voyages extended to Yucatan, whence they brought wax and woven goods to the Bahamas, and to Florida, whence it is likely they obtained the gold which they had in small quantities.

"The conquest of Cuba occurred in 1514. In 1532 the first official census of the Indians took place. They then numbered only 4,500. Their destruction had been rapid, and they often killed themselves in groups of twenty or thirty at a time to escape capture and slavery. A few of their descendants, of mixed blood, are said to have survived until this century."

The population of Cuba after the discovery was not greatly improved for the importation of blacks from the coast of Africa took place even when the missionaries were declaring against the enslavement of the Indians. The Spanish have been the ruling class, but a specimen of their rule has been given to us during the past few years. No nation has ever benefitted by the Spanish rule. Whatever civilization has been introduced, it has always been that of the middle ages, a survival of feudalism which in Europe has long since passed away. Colonies were impoverished for the enrichment of the mother country.

As to the Phillipines, we have to remember that they are 8,000 miles from our coast in the torrid zone, where earthquakes abound, where plagues peculiar to the hot climate prevail, where the inevitable tendency is to sink into indolence and sensuality. Even if the opportunity is given for America to secure a new market for its products, and for American citizens to find new places to which they may migrate, the question will be, "What will be the effect upon our civilization?"

The following extracts are from an article by F. de P. Castells, Guatemala, C. A., formerly agent of the British & Foreign Bible Society in the Phillipines:

"The Phillipine Islands were taken possession of by Spain in 1565, forty-four years after their discovery by Magellan. (The friars who came there endeavored to turn the natives into Romanists, and combined with the soldiers to establish Span-

ish authority.) The islanders of that time, far from being savages, had already attained a considerable degree of culture. They believed in a Supreme God, the Creator of all things, whom they named *Bathala*, and also in a number of other invisible beings, called *Anitas*, whom they worshipped and sought to propitiate by the sacrifices offered in the temples by their priests and priestesses. They held commercial relations with the neighboring countries, and their political organization was fairly good, the supreme power being hereditary. They were masters of the musical art, and had a system of writing all their own. In the north monogamy prevailed, and the women were respected."

In 1883 the population of the Phillipines was estimated at



MANNER OF PLOWING IN THE PHILLIPINES.

"nine millions." Romanists, 7,000,000; Heathen, 1,300,000 and Mohamedans, 700,000. Mohamedanism was introduced in the Fourteenth Century. The Chinese population is now about one hundred thousand. The native population is made up of the following: In the mountainous parts of the interior are the dwarfish Negritos, a people of the Papuan,* or New Guinea type. They are the aborigines of the country. The main population is made up of Malays, who are divided into two sections—the Tagalogs inhabiting the northern portion of

* Mr. C. Staniland Wake, who is authority on these subjects, says that the Negritos are not Papuans, but Andamanese. They are a short and small black race which seem to be scattered through various parts of Polynesia. They might be compared to the Dravidics of India. We call them the ground race because there is everywhere throughout Central Asia and Polynesia an inferior race like these which is regarded as the earliest and most primitive. They may be the survivors of the pre-glacial and pre-Adamic race. A race which even preceded the Accadians, Finns, North American Indians, who belonged, some think, to the Turanian stock.

the archipelago and the Visayas occupying the southern part. The seat of government is in Tuzon, and this is the largest and most populous of the islands. The Tagalogs are the best known of these people and have taken the lead in every respect. Among other people we see much licentiousness and drunkenness, witchcraft and idolatry, lying and stealing. They are grateful, sensitive and hospitable; have a most remarkable aptitude for the fine arts, and are "the Italians of the East." Though commonly accused of indolence, they are a great improvement over all the other branches of the Malay race. Hardly a town is without its band of music, and they delight in using their talent in the service of their superstitions. The name Tagalog is a compound of *Toga* (by) or *Talog* (a river), meaning the settlers beside the river, to distinguish them from the aborigines, whom they drove to the interior. As to the language, Viwayan is spoken by about 2,000,000 people, Cebuans by some 400,000, Tagalog by 1,300,000, Vical (a dialect of the latter) by 325,000, Ilocans by 350,000, Pangasinan by 300,000, Pompango by 200,000.

This negro race is said to have occupied the islands undisturbed 2,500 or 3,000 years ago, but they have remained the same, even through all the changes which have occurred. See figure on page 360.

In culture they are very primitive, owning no fixed habitations, not tilling the soil, no pottery, and leading vagrant lives. Their clothing is merely a girdle. They have no musical instruments and no clubs. They occasionally use the blow-pipe, which some have borrowed from the Malays, but their chief weapon is the bow. This is about six feet long. In discharging it they rest on one knee, and use the "primary" release, that between the thumb and forefinger. Their arrows are well made and of three lengths. It is said that some tribes poison the tips, but this lacks confirmation. They are adepts in stone-throwing, and can readily kill birds, etc., in this way.

As to the history of the islands, it is held by Dr. Brinton that there were three migrations and three periods. The earliest people were allied to the Dyaks of Borneo. They were a rude and savage people. The second migration was by a more cultured people and one acquainted with the alphabet. This occurred about 100 B. C. The third migration was as late as the 14th Century. At this time the Malays, who had mingled with Arabs and who had become Mohamedans, migrated into the southern archipelago and to the Sulu Islands. They were the dreaded pirates against whom the villagers set up their defenses in the form of watch-towers. Here then we have the races with which the islands were filled when the Spaniards began their voyages. The new ingredients have not very much improved the character of the people. They are made up of Spanish, Chinese, and a few Japanese. It was held by Quatrelages and



MALAY SERVANT GIRL.



MALAY WATER CARRIERS.

others that a non-Aryan race, called "Indo-nesians," a branch of a pure white race which preceded the Aryan occupied portions of Borneo at a very early date, and some of them migrated to the Philippines, but this is very doubtful.

Quite a variety of dialects is spoken in the island, and it is interesting to see the farther we travel southward the clearer becomes their affinity to the Malays. When we reach Sulu, near Borneo, the fact becomes more apparent than ever, owing to the ancestors of the present people having come from the south by way of western Borneo, where we find the Malays in possession of all the waterways and the aborigines driven inland. The three principal products of the island are sugar, hemp and tobacco. The quantities exported annually are worth about twenty-five million dollars. The public revenue is equal to ten millions.

It is from these items that the Catholic missions in Formosa, Tonquin and Southern China are maintained. From them the last Carlist of Spain received most of its funds. Observing the baneful effects of priestly domination, the liberal governments of Spain tried honestly to mend things, but their schemes were always defeated by the strong reactionary influence of the friars and their home supporters.

The following are extracts from "Yesterdays in the Philippines," by Joseph Earle Stevens:

"Do we want them? Do we want a group of 1,400 islands nearly 8,000 miles from our western shores, sweltering in the tropics, swept with typhoons and shaken with earthquakes? Do we want to undertake the responsibility of protecting those islands from the powers of Europe or the East, and of standing sponsor for the nearly 8,000,000 native inhabitants that speak a score of different tongues and live on anything from rice to stewed grasshoppers? Do we want the task of civilizing this race, of opening up the jungle, of setting up officials in frontier, out-of-the-way towns who won't have been there a month before they will wish to return? Can we run them? The Philippines are hard material with which to make our first colonial experiment and seems to demand a different sort of treatment from that which our national policy favors or has had experience in giving? Besides the peaceable natives occupying the accessible towns, the interiors of many of the islands are filled with aboriginal savages, who have never even recognized the rule of Spain, who have never even heard of Spain, and who still think they are possessors of the soil. Even on the coast itself are tribes of savages who are almost as ignorant as their brethren in the interior, and only thirty miles from Manila are races of dwarfs that go without clothes, wear knee-bracelets of horse hair, and respect nothing save the jungle in which they live. To the north are the Igorroahy to the south the Moros, and in between, scores of wild tribes that are ready to dispute possession."

— Prof. Dean C. F. Worcester, in the *Century* magazine for September, says:

"The Moros entered the Philippines from Borneo at about the time of the Spanish discovery, before the conquest of Palawan was completed. They had their first serious collision with the Spanish troops. They forthwith began to organize forays against the Spanish and native towns. Their piratical expedi-



CHINESE MANDARIN.



MALAY FARMERS.

tions soon became annual events. For two and a half centuries this state of affairs continued. The delight of the grim Moslem warriors was to make prisoners of the Spanish priests and friars, toward whom they displayed the bitterest hatred. Near many of the more important Phillipine villages the traveler finds old stone towers. The village watch-tower was an important institution; for day and night vigilant sentries turned their keen eyes sea-ward and watched for the approach of a fleet of the dreaded Moros and "Malay pirate." These pirates dwelt near the Spanish town of Sulu, in houses which were built over the water."

Thus we have in the Phillipines, structures resembling the pre-historic Palafittes, or lake dwellings of Switzerland, and the old round towers of Sardinia and Great Britain. The first suggest the survival of the primitive villages of the sea-faring people, specimens of which we find in Siam, near Venzuela, and all over the globe. The towers suggest the survival of the defenses of the agricultural people which seem to have spread over the continents of Asia, Africa, and Europe in pre-historic times. These primitive people were influenced by modern forms of religion, which naturally made them hostile to one another. The Moros are Mohammedans and the fiercest kind of warriors; but the simple-minded Malays, who were heathen, have nominally been converted to the Roman Catholic religion. Spanish priests have oppressed them, but at the same time they converted them, but they defended their home villages by their own methods. We have the history of the struggles represented in their architecture. The knotty problems of diverse population are revived by Prof. Worcester in the October number of the *Century*. He says: "The Cubans have not been the only subjects to suffer oppression. By a strange chance we have it in our power to strike off the shackles of ten millions of unfortunates,"

What then are to do? Has not every crime against civilization in Cuba been duplicated in the Phillipines a hundred times? Some of the priests have accomplished an immense amount of good; on the other hand, many of the parishes in the Phillipines are under friars who would not be allowed to hold such charge in any other country. Many of them are ignorant beyond belief, and are given over to open and brutish licentiousness and practice inhuman extortion. The inevitable result is the utter demoralization of the communities which they control. There exists a large class which has suffered from the friars' wrongs that it is not human to forget. Provision should be made for these people and the other races which we will find among them, as well as among the more docile of the pagan tribes, abundant occupation for all the men they can throw into the field.

The development of the enormous natural resources of the archipelago affords a problem which will richly repay solution. The wonderful fertility of the soil, the immense wealth in forest

and the presence of valuable and extensive mineral deposits are matters of common knowledge. Still it will be many a day before Anglo-Saxon civilization will appear in the Phillipines. There may arise an oriental civilization which shall be made up of a compound of Papuan, South Sea Islanders, Chinese and Americans ; but what will it be?

RELICS OF THE IRON AGE.

This cut, which has been loaned to us by the *Fireman's Journal*, illustrates how this age, which is the iron age of history, is leaving tokens of its progress beneath the surface. It will not be long before vessels which have been recently wrecked may be buried beneath the sands. In after years they will be ex-



AN OLD WRECK ON LAKE MICHIGAN.

humed, and their patterns compared with those of the earliest vessels built upon the lakes, such as the "Griffon," which was wrecked in the same vicinity about two hundred years ago; and these again with the Indian canoes, or dug-outs, and bark canoes which plied the waters even before the "Griffon." The progress of naval architecture is represented by these different vessels. The cut is very suggestive.

BIOGRAPHICAL NOTES.

THEODORE MOMMSEN.

This great historian and archæologist was born in 1817 at Garding, in Sleswick. He is now 82 years old. He studied at the University of Kiel, and graduated there in 1843. Having received funds from Berlin, he spent three years in investigating Roman inscriptions in France and Italy, and published the results of his studies in *Annals of Archaeological Institute of Rome*. He was appointed professor at law at Leipsic, but was dismissed on account of his political opinions. He was made professor at law at Zurich in 1852, and at Breslau in 1854, where he remained until 1875. He returned to Leipsic in 1875. His attention was given to those branches of archæology which are connected with ancient history, and especially the history of Rome. Among his works are the following: CORPUS, INSCRIPTIONUM NEOPOLITANARUM Leipsic; ROMAN COINS (1850).



THEODORE MOMMSEN.

He was engaged many years in editing "Corpus Inscriptionum Latinarum" projected by the Berlin Academy. He commenced them in 1863. He was elected secretary of the academy in 1870. His great work, however, was his Roman History, which was published in 1868 and in 1870, and has reached a fifth edition. It was translated into the English by W. P. Dickson, and is still the standard history. His valuable library was destroyed by fire in 1880, whereupon a number of English students presented him with a

collection of books to make good his loss. In 1882 he was tried for slandering Bismarck in an election speech, but he was cleared in the upper and lower courts. Freeman characterizes Mommsen as "the greatest scholar in our times, well nigh the greatest scholar of all times; languages, law, mythology, customs, antiquities, coins, inscriptions—every source of knowledge of every kind—he is master of them all." The portrait given herewith shows his intellectual ability and suggests the breadth of thought and the powerful grasp upon all sources of information.

HENRY C. AND GEORGE RAWLINSON.

Two brothers in England have done more to advance the knowledge of the ancient history of Babylonia and Assyria than any other two men. These names are given above. Sir Henry C. Rawlinson was born in Oxfordshire, England, in 1810. In 1833 he went to Persia to assist in organizing the Persian army. He there saw the celebrated trilingual inscription which still remains high up on the rock at BEHISTUN; an inscription which is almost as important as the Rosetta Stone, for it led to the decipherment of the cuneiform language, and so opened up a whole realm of history and literature. This is written in three languages—the Cuneiform, the Assyrian, and Greek. Rawlinson was able to trace up the names of the kings in all three inscriptions, and so gave the key to the whole. His translation was published in the "Journal of the Royal Asiatic Society," a copy of which is in the library of the editor of THE AMERICAN ANTIQUARIAN. It contains fac similes of the inscriptions and Rawlinson's translations. He was made K. C. B. and was appointed by the Crown, Director of the East India Co., and was elected Vice-President of the ROYAL GEOGRAPHICAL SOCIETY, and a trustee of the British Museum. He was made a Baronet in 1891. His writings consist of the following: A COMMENTARY ON THE CUNEIFORM LANGUAGES OF BABYLON AND ASSYRIA (1859); OUTLINES OF THE HISTORY OF ASSYRIA (1852); THE CUNEIFORM INSCRIPTIONS, edited by Geo. Smith, 5 vols. (1861-70); ENGLAND AND RUSSIA (1875), and other books. Rawlinson was an explorer, geographer, and scholar as well as a sportsman and a soldier. * He took his residence in Persia from 1835 to 1839; in Bagdad in 1844 to 1850. He thus had contact with Laird, George Smith, Grotefend, Burnouf, Sir George Ousley. The decipherment of the Persian cuneiform alphabet took place after his visit to Behistun in 1851. He was called the father of assyriology. His work is familiar to all Semitic students.

George Rawlinson, the brother of Henry, is a clergyman and author. He has written many books on ancient history of the East, and has done much to increase the knowledge of these lands as connected with the scripture record. His great work is entitled the ANCIENT MONARCHIES OF THE EAST. This includes the five "great" monarchies with additions. He also wrote the HISTORY OF PHÆNICIA AND ANCIENT EGYPT, in 2 vols. It is published by Dodd, Mead & Co. (1892); also MANUAL ON ANCIENT EGYPT; MOSES, HIS LIFE AND TIMES; KINGS OF ISRAEL.

ERNEST CURTIUS.

The life and career of this eminent archæologist forms a subject of an article in the *American Journal of Philology* for

*By Prof. Robert Francis Harper in the *American Journal of Semetic Language*, October, 1898.

July, 1898. In 1832 he graduated from the University of Berlin, and immediately attended Niemdis, who was instructor of King Otho, King of Greece, and was thrown into the best intellectual life of Athens. He there became acquainted with Karl Ottfried Müller, who was the most brilliant, classical scholar in Germany, and accompanied him in his explorations. Müller died from exposure to the sun. Curtius became private docent in the University of Berlin, where he became acquainted with Humbolt, Ritter, and Vockh. Here he became the instructor of Prince Frederick William, afterward German Emperor, and wrote his work on the Peloponnesus. He was called to Göttingen in 1855, and began his popular history of Greece. He became Professor of Archæology at Berlin in 1868, and delivered the yearly oration to the Prussian King and the German Emperor. The excavations of Olympia were the result of his enthusiasm. In 1895 a bust of Curtius, the gift of some 200 of his pupils, was set up in the museum amid a gathering of the Greek people, who came by thousands from the neighboring towns. The unswerving devotion with which Curtius gave himself to the study of Greek antiquity is noteworthy, for he felt that he was studying the highest manifestations of the human mind. Most characteristic was the place which he made in his life, for Christian faith. He did not hesitate to avow, on many public occasions, his conviction of the necessity of Christian faith to quicken patriotism and to keep alive scientific investigation.

GEORGE MORITZ EBERS.

George Moretz Ebers, the celebrated Egyptologist and novelist, was born at Berlin, Gy., in 1847. He was educated at Froebel's School and studied law at Göttingen. He was a lecturer at Jena in 1865, and was called to Leipsic as Professor of Egyptology in 1870. A visit to Egypt led to the discovery of the celebrated hieratic *Papyrus Ebers*, which he published in 1875. His most important works are: "Egypt and the Books of Moses," 1868; "Through Goshen to Sinai," 1872; "Egypt, Descriptive, Historical and Picturesque," 2 vols., 1880. He began writing historical novels in 1864. "Egyptian Princess" was his first. In this he brought out much of his Egyptological learning. He had a stroke of paralysis in 1879, and was doomed to inaction, but continued writing to the end of his life. The novels which have been most popular are those which have their scenes laid in Egypt—"Uarda" and "Serapis." The fact that his novels have been read so extensively shows that archæology is, after all, not so dull and dry a subject as some suppose. Some of the most interesting novels have been upon historical subjects which required a knowledge of archæology, among which may be mentioned "Ben Hur," and "The Fair God," an illuminated edition of which is to be issued soon for the Holiday trade.

TO EN MHΔABA EΥΡΕΘΕΝ

TELEPHONE MECHANICAL CAPTOR

DEBACATA ET IN CONFLUENTIBUS REACTA

4.4. TRADESOME THIRD PARTY



THE MADABA MAP
Courtesy of the Biblical World

NOTES ON BIBLICAL ARCHÆOLOGY.

"MADABA MAP."

Madaba is a town east of the Jordan. In 1896 a Mosaic map of Palestine was found in a church which was made between the middle of the fourth and fifth centuries. The size of the map was originally 280 square metres, but eighteen square metres are left out. The Dead Sea forms one of its great features. There are upon it two ships—a bridge stretches across the Jordan. The scenery is enlivened by palm trees, a bird, a lion chasing a stag, a large number of houses, castles, forts and towns. Jerusalem holds the main place. This city, with its walls, its colossal streets, its houses, churches and other large buildings, form a very interesting part of the map. The Church of the Holy Sepulchre, built by Constantine and dedicated in the year 336, was made up of a basilica on the alleged site of Golgotha, and a rotunda, in the middle of which was the tomb of Jesus. The mosaic places it before us. Curious questions arise as to the whole matter of the orientation of churches. The churches of Madaba are oriented. This map is described by Prof. C. R. Gregory, of Leipsic, in the *Biblical World* for October, 1898, and the plate of the map is given as a frontispiece.

BOOKS ON ARCHÆOLOGY.

Christian Archæology, a book on Christian Rome, giving a view of its memoirs and monuments, translated by Lady MacDonald was published in 1898. A Painters' Study of the Likeness of Christ from the time of the Apostles to the Present Day, by W. Bayliss, has been published by Macmillan.

First Steps in Assyrian, being a series of historical, mythological, Religious and other texts printed in uniform characters with interlinear translations; Kegan, Paul, Trubner & Co.; '98; 399 pages. Assyrian Deeds and Documents Relating to the Transfer of Property, 7th Century B. C., by C. H. W. Johns; G. Bell & Co., London; '98; 573 pages. History of the New Testament Times in Palestine, by Prof. Shaler Mathews; Macmillan & Co.; '98. Introduction to the Books of the New Testament, by Prof. B. W. Bacon, in Yale University Macmillan & Co.

The Religion of Babylonia and Assyria, by Morris Jastrow, Jr., Ph. D., leads us back to the earliest times in history, and to the very earliest forms of religion. The author treats of the old Babylonian Pantheon, also of the Babylonian Gods and their consorts; the minor gods, also the survival of Anamism. He also treats of the Assyrian Pantheon, the Triads, the combined invocation of deities, of oracles and omens, myths and legends, the zodiacal system of the Babylonians, the views of life after death, the temple and the cult. His method of treating the subject is very thorough and the book will undoubtedly be valued as a permanent reference for all who are studying comparative religions.

ARTICLES IN MAGAZINES.

The site of the Church of the Holy Sepulchre at Jerusalem on the mosaic map at Madaba is discussed in the *Palestine Exploration Quarterly* for July, 1898, pp. 177 to 183.

An article on Hebrew and Babylonian Poetry, by C. R. Conder, is found in the same quarterly. 'The Influence of Assyrian' in Unexpected Places, by T. K. Cheyne, is found in the *Journal of Biblical Literature*, vol. xvii, page 103. The Christian Legends of the Hebrides, is a subject of an article by A. G. Freer, contained in the *Contemporary Review*, pages 390 to 492. The Original Hindoo Triad, by H. W. Magoun, in *July Exploration Fund*, xix, pages 137 to 144. Jonah's Mission to Nineveh, in *Biblical World*, page 195, by A. W. Akerman. Jahveh in Early Babylonia, by A. H. Sayce in *Expository Times*, page 522.

Light on Scriptural Texts, from recent discoveries by J. F. McCurdy, *Homiletical Review*, page 23, also page 123; '98. Ezekiel's Temple, by G. C. M. Douglas, in *Expository Times*, page 468; also page 518. '98. Damascus, the Oldest City in the World, by E. W. G. Masterman, in *Biblical World*, page 71. '98. Biblical Lands—their Topography, Races, Religions, Languages and Customs, Ancient and Modern, by Hormuzd Rassam, in *Journal of Victoria Institute*; xxx, pages 29 to 85. The Bible Among the Indians Before the Discovery, by P. DeRoss, in *American Ecclesiastical Review*, Sept., '98; page 252. The Palestinian Syriac Version of the Holy Scripture, by E. Neute, in *Expository Times* for Aug., '98, page 510. Contributions of Prof. Maspero to Biblical Science, by Fr. Hommel, in *Homiletic Review* for July, '98. The Cosmogony of Berossus, by Fr. LaGrange in *Revue Biblique*, page 395; '98. Magic Divination and Demonology Among the Semites, by T. W. Davis, in *American Journal of Semitic Languages*; xiv, p. 341. Epistolary Literature of Assyrians and Babylonians, by C. Johnston in *Journal of American Oriental Society*; xix, p. 42.

ASTRONOMICAL TABLETS AT KOJUNDJIK.

Prof. James A. Craig, of the University of Michigan, spent the summer vacation in London, at work in the British Museum on the astrological astronomical *tablets* of the Kojundjik (Nineveh) collection known as the illumination of Bêl. This is the most important series of unedited texts in the British Museum and by far the most important in many respects to be found in any of the collections extant. Prof. Craig has now completed all the texts of the series, which numbers about 130 tablets. His manuscript is already in the press with Die Hinrichessche Buchhandlung, Leipzig.

CORRESPONDENCE.

INDIAN PLACE NAMES.

SAG HARBOR, N. Y., Sept. 16, 1898.

MY DEAR DR. PEET:

I notice in July number of THE AMERICAN ANTIQUARIAN a discussion on some Indian Place Names.

In the spring of 1896 I was asked, through the late Dr. Hale, the meaning of several Indian names or Place Names. Among them were *Conneaut* and *Ashtabula*. I made considerable search at the time, and after stating the difficulties involved I gave the following suggestions; "*Conneaut*," Heckewelder says, is from *Jun-niati*, "it is a long time since he or they were gone," Boyd (Indian Names) repeats this and under "*Con'eaue Lake*," gives "Snow Lake." None of these are acceptable, although it is evident that Heckewelder 'caught on' to the meaning of the first element, *Conne*, "long." From some of the forms which I have in my possession, furnished me by Dr. Brinton, from the Col. Rec. of Penn., such as *Conneyaut*, *Conneyaught* and *Conneaught*. I would suggest its derivation from *Conne-aney nt* at the long path or way." It probably referred (if correct) to a long path taken to avoid some natural obstruction, such as a lake or a mountain. I regret we have so little on which to build up a derivation for *Ashtabula*, still it will do no harm to suggest one—one perhaps better than any heretofore suggested (I have forgotten now those suggested). It is evident to me, that it is of Delaware origin, and I would suggest that it is a variation of *Aschetch-phella*, "a crossing over stream;" *Aschetch* denotes a going over, *-he* "water," *-hella*, a suffix. This root *he*, "water," is frequently sounded by many Indians of Algonquin stock, as *be*, *bo*, *bu*, *bang*, etc. The name seems to be related to the Long Island (N. Y.) *Achbushanesuck*, "a going over little brook." I find in our early words (Southampton, L. I.) under date of 1686: "at *Acha bacha we-suck* about 50 poles below the going over." Compare *Azwazogusawa'dik*, a place where on account of the distance, one drags his canoe through a stream rather than to carry it. *Onzwazoge'hsuck*, Penobscot Brook, when they carry by there they have to wade across. (Hubbard's Woods and Lakes of Maine, 2d ed., pp. 195-206).

Yours truly, WM. WALLACE TOOKER.

This interpretation of *Conneaut* and *Ashtabula* corresponds with the geographical features of the locality. The editor is gratified at receiving even so much toward the interpretations of the names. If other correspondents will furnish even the common traditional interpretations of Indian names they will confer a favor.

BOOK REVIEWS.

INTRODUCTION TO THE STUDY OF NORTH AMERICAN ARCHÆOLOGY, by Prof. Cyrus Thomas; Cincinnati. The Robert Clarke Co., 1898; 391 pages.

The first impression of this book is a pleasing one, for the publishers have done all that is required to make it attractive in appearance. There has been a need of a book which would give a summary of the results which have been reached by the archæologists of this country, and this book meets that demand. But in some respects it fails utterly and will prove disappointing to many. It purports to be an introduction to the study of North American Archæology; but it is like playing Hamlet with Hamlet left out, for very many of the most prominent archæologists are not even named, and their books do not seem to have been read. The name of Dr. D. G. Brinton appears several times, of Profs. Mason and F. H. Cushing and Prof. Starr just once. But the names of Prof. F. W. Putnam, Gen. Gates P. Thruston, Dr. Thomas Wilson, Prof. J. T. Short, and many others do not appear at all, and no reference to their writings can be found. These gentlemen have contributed as much to the advance of archæology in this country as Dr. Thomas, and even more, and there is no reason why they should be ignored so completely.

If Nadaillac, a French author, and Nordjenskjöld, a Swedish explorer and writer, know more about North American archæology than North American scholars themselves, it is time some one was waking up. But is this the case? There are books on prehistoric America written by gentlemen who have been familiar with the antiquities of America all their lives, and have spent years in preparing them. Prof. Thomas does not seem to have read them, and as a result has fallen into some grievous errors. He says that the Effigy Builders of Wisconsin were composed of hostile tribes, —the stronger occupying the level and choice localities, while the weaker were forced to seek refuge in the rugged regions or amid the swamps and marshes. "If the author had done any exploring in that state among the effigies he would have known better, for the effigies are the clan totems of a tribe of Indians which made their habitat in this state, and who constructed the long mounds for game traps, through which they would drive the large game. He speaks also of the altar mounds of Ohio in the following terms: 'These masses are supposed by some *leading authorities* to have been altars on which sacrifices were made, or some religious act performed'

"There is," he says, "no valid reason for this supposition or any evidence which seems to justify it. Every one knows that Prof. Putman, E. G. Squiers and all who have explored the altar mounds of Ohio, discovered that the altars were, many of them, filled with relics of various kinds, and even human bones, which had been offered as sacrifices, (probably to the sun) and that the relics, in the mounds themselves, were full of an elaborate symbolism. This mistake of Dr. Thomas' comes from not having been long enough in the field to ascertain the facts. Another error is found on page 66. An *iron chisel* was found near by a skeleton in a layer at the bottom of a mound in Tennessee. The inference is that the mound had been built after the advent of the white man. A diagram given in the book, however, shows a central shaft of "alternate disc-shaped layers of burnt clay and ashes," which extends from the top to the very bottom of the mound, making it very probable that the iron chisel was an "intruded" relic.

Gen. Thruston, who has spent much time and money in exploring mounds and stone graves in Tennessee, finds no such evidence of the modern character of the mounds, but claims that they are pre-Columbian, the same as Prof. Putman does. Dr. Thomas has also his theories about the migrations of the Indian tribes from the north to the southward. Other gentlemen, who are as good authority as he is and have had favorable opportunities for studying the subject, hold an entirely different opinion; but

their names are not mentioned. The fact is, that American Archaeology is in just that unsettled condition that *no* author who covers the whole ground, and advances his theories on all subjects as Dr. Thomas does, can be accepted as authority, and it is a great mistake that he should ignore the opinions of those who differ with him, and never mention their works. This mistake Dr. Thomas has made throughout his *Introduction*; otherwise than this the book furnishes a good summary of the subject. The author begins at the relics of the Eskimos and passes on southward, making three main divisions—Arctic, Atlantic, and Pacific—with sub-divisions, and includes nearly all of the pre-historic works, taking the monuments of Central America as the last to describe. The last part is devoted to the origin of Central American civilization (and this is the best part).

He seems to have abandoned the position he once occupied, namely, that it may have been introduced by way of the Pacific and Easter Islands from the Eastern Asiatic coast, and has adopted the theory that it was introduced from the northwest. In this he follows the lead of the Chief of the Bureau, though there are many things to be said on the other side. It is to be hoped that this *Introduction* to North American archaeology will open the way to others to enter the field and to solve the problems which are still unsettled. What is now needed is that some system should be adopted according to which the mass of facts which have already been gathered can be classified, and the relics and remains be arranged in such systematic order that one can see that archaeology is a science, and not a mass of unclassified facts.

European archaeologists are in advance of the Americans in this respect, for they have classified their material and have reached conclusions which are admitted by all. There are advantages for the study of archaeology in America, the chief of which is that the geographical districts are so separate and distinct. This is a point which Prof. O. T. Mason has brought out very clearly. He calls them cultural areas. If his classification could have been adopted it would certainly improve the book; but every author has his own plan. We commend this book to the public as the best "Introduction" to North American archaeology which has been written.

MEMOIRS OF THE PEABODY MUSEUM OF AMERICAN ARCHEOLOGY AND ETHNOLOGY, Harvard University. Vol. 1, Nos. 1, 5. Researches in the Uloa Valley, Honduras. Cavern of Copan, Honduras. Report on Explorations by the Museum 1897-'97. By George Byron Gordon, Cambridge. Published by the Museum, 1898.

The excavations that were made at Uloa Valley brought to light a group of ruined structures containing idols, pottery vessels, terra cotta figures, and statuettes, stamps, stone vases and ornaments and obsidian green stone celts. The most interesting were pottery whistles, some of which were in the shape of nondescript animals resembling dogs. The decorations on the pottery are very interesting. One vase is decorated with a couple of serpent figures with a divinity near it. The serpent's body is bent in the form of an arch, under which are two square crosses. One vessel from Guatemala contained hieroglyphics and human faces. A clay pipe, which is said to be the only pipe from Honduras of which we have any record, was found. The terra cotta figures and masks are very grotesque—no two alike. The statuettes are more artistic and are somewhat true to nature. The stamps are interesting, inasmuch as most of them contain human figures and faces, the figures often in contorted attitudes. The remarks upon the significance of the relics are as follows: "There is no evidence of different periods of culture, or separate epochs, marked by the advancement of the arts or by radical changes of any descriptions. What we find is evidence pointing to an extended period of constant culture, during which certain arts which flourished in this region manifest a development equal to that attained by the highest civilizations of Central America. There is no evidence of the use of metals, and architectural remains are entirely wanting. In certain forms of stone-cutting the traces,

although meagre, show considerable proficiency, while in the matter of color decorations there is abundant evidence of a skill equal to that attained by the people of any of the neighboring provinces. The great body of art relics are in clay; and while in some respects they are clearly related to the art of neighboring provinces, in other respects they possess a distinct individuality. It is surprising to find in a region of such small extent such a variety of form and types as is exhibited by these relics from the Uloa Valley. Art in clay, which in the ancient centres of Maya culture occupies a subordinate position, in this region takes the place of art in stone almost entirely, and accordingly the former is given a wider application than elsewhere. Although here, as elsewhere, the vessel represents the first idea and the leading feature of ceramic art, images, musical instruments, seals and articles of personal adornment occupy a very important place, and there is a conspicuous ambition to model life forms—natural or mythological—apart from objects of utility. The attempt to model the human form is worthy of especial mention, and is more meritorious than any similar attempt of which traces have survived in the neighboring provinces."

THE REPUBLIC OF PLATO WITH STUDIES FOR TEACHERS, by Wm. Lowe Bryan, Ph. D. of Indiana University, and Charlotte Lowe Bryan. Chas. Scribner & Sons, New York; 1898.

It is very useful to take up the writings of Plato, the Greek philosopher, in these days and see what wisdom he had in reference to the republic. There was the same mercenary and craven spirit then that prevails now. "The universal voice of mankind is saying that justice and virtue are honorable, but grievous and toilsome; and that the pleasures of vice and injustice are easy of attainment, and are only censured by law and opinion. They say also that honesty is less profitable than dishonesty; and they are quite ready to call wicked men happy, and to honor them both in public and private when they are rich or have other sources of power, while they dispise and neglect those who may be weak and poor, even though acknowledging that these are better than the others." The book is timely and should be read by the American people.

The Northwestern Archaeological Survey, by Prof. T. H. Lewis, under the auspices of Alfred J. Hill. Guide to the Peabody Museum of Harvard University, with a statement relating to Instruction in Anthropology. The University of Chicago, department of anthropology, Bulletin 3. The Mapa de Cuauhtlantzinco or Codice Campus, by Frederick Starr. Journal of the Asiatic Society of Bengal, vol. 61, part 1, extra No. 3, 1892, edited by Philological Secretary, Calcutta, India, 1897.

JOHNS HOPKINS UNIVERSITY STUDIES. Historical and Political Science. Herbert B. Adams editor. The Transition of North Carolina from Colony to Commonwealth. Enoch Walter Sikes, Ph. D. Prof. of Historical Archaeology Lake Forest College.

STORIES OF THE CHEROKEE HILLS, by Maurice Thompson; Boston and New York. Houghton and Mifflin & Co.; Riverside Press Cambridge. 1898.

The title of this book is somewhat misleading, for it has nothing to do with the Cherokee, but rather with the negroes, and that peculiar class of white men who had inhabited the mountains of North Carolina and East Tennessee. The book carries us back to times which immediately followed the war and to a condition of things that has long since passed away. The descriptions are amusing and the experiences comical, and the book is interesting.

THE MAGIC OF THE HORSE-SHOE WITH OTHER FOLK-LORE NOTES, by Robert Means Lawrence, M. D. Boston and New York. Houghton, Mifflin & Co.; Riverside Press, Cambridge. 1898.

There is more to be said about the magic horse-shoe than one would think. This is shown by the sub-titles which are given in this book. 1st. History of the Horse-shoe. 2d. The Horse-shoe as a Safeguard. 3d.

Horned and Two-pronged Objects. 4th. The Symbol of the Open Hand. 5th. Crescents and Half-moon Shaped Amulets. 6th. Iron as a Protective Charm. 7th. Blacksmiths' and Supernatural Attributes. 8th. Fire as a Spirit-Scoring Element. 9th. The Serpentine shape of the Horse-shoe. 10th. The Horse-shoe Arch. 11th. Symbol of the Horse. 12th. Horses Heads as Talismans. 13th. A Favorite Anti-Witch Charm. 14th. A Protector of Buildings. 15th. The Lucky Horse-shoe. 16th. A Phallic Symbol. 18th. On Church Doors. 19th. Legendery Lore. It is mainly as a phallic symbol and a fire symbol having a serpentine shape, and the shape of an arch and a hand that the horse-shoe most interests the archæologist. The symbol of the open hand is in this book connected with the horse-shoe, and the author has hardly done that subject justice. Though judging from his manner of treating the horse-shoe he will be well qualified to follow up the subject, and could make a larger book than the one already published. The one great merit of the book is that there are so many "foot notes," and they have been carefully edited. These show that the author is a conscientious and thorough scholar, and what he says can be taken as truthful and correct. There are, to be sure, many objects in America which bear the horse-shoe shape, and there is always a desire to know about their significance. The author has not treated of these because so little is known, and yet the query arises whether still further diligence would not have brought out the explanation of these. The latter part of the book is devoted to other topics. The folk-lore of common salt; the omens of sneezing; days of good and evil omen; Superstitious dealings with animals, and the luck of odd numbers. This variety will give more popularity to the book, and afford an insight into the operations of the human mind in early times. They do not, however, connect with the prehistoric times. The publishers have brought out the volume in their usual elegant shape, and we have no doubt that it will meet a ready sale.

LITERARY NOTES.

Folklore, vol. ix., No. 3, Sept., 1898. London. David Nutt. Contains several articles on the survival of ancient customs. The following are examples:

Sacred fire was produced by a Scotch family in 1810 by cutting a branch off a tree, carrying it to a small island, twirling a big stick upon it, and from this sacred fire the fires in the houses were kindled and life was entered upon anew. The occasion of this ceremony was the breaking out of a plague as a penalty for interfering with one of the pre-historic ruins known as Brochs. In 1897 a large wheel adorned with flowers was rolled by two men at the feast of St. Amable. A rain ceremony occurred in Bengal, which is a survival of the days of Rig Veda. Twenty-one Brahmans stand in water up to their necks singing the Vedas and praying to Indra to give rain soon. Another method is to form a reservoir in the temple and pour water over an idol, symbolizing well-worship and the rain god. Variations of the story of "Jack, the Giant Killer," prevailed among the Gypsy folktales. The same number contains a sketch of Kristoen, a Danish folklorish.

Old South Leaflets, vol. ii, embraces pamphlets on American Indians as follows: "The Mound-Builders," by Prof. G. H. Perkins; "The Indians Whom Our Fathers Found," by Gen. H. B. Carrington; "John Eliot and His Indian Bible," by Rev. Edward G. Porter; "King Philip's War," by Miss Caroline C. Stecker, Old South prize essayist, 1889; "The Conspiracy of Pontiac," by Chas. A. Eastman, M. D., of the Sioux Nation; "A Century of Dishonor," by Herbert Welsh; "Among the Zunis," by Walter Fewkes, Ph. D.; "The Indians at School," by Gen. S. Armstrong.

The American Numismatic and Archaeological Society, New York. Proceedings and Papers, Fortieth Annual Meeting, 1898. Contains an illus.

trated article on pre-historic Egypt by Henry E. Morgan. A pre-historic station at El Amarah was discovered with neolithic vases, vessels, large urns buried with a body, the vases forming a circle around the body. Also the tomb at Negadeh, a connecting link between Pre-historic and Pharaonic Egypt. Flint implements continued to be in general use, and were of great perfection. But the presence in the Nile Valley of a new race that brought metals and writing besides other characteristics of an undeniably foreign origin becomes apparent. This tomb is the oldest royal document ever exhumed in Egypt. The *Report* contains an illustration of a large image or idol, armed with a bow—a dagger in the hand and an ax in his belt. It bears the title "Stele de Houson Chukh Khan." This *stele* has on the right side an inscription in very primitive cuneiform characters. It is considered as belonging to the time of Sargon of Guda'a.

American Hist. Review for October, 1898. IV. No. 1, contains articles on the "Historical Opportunity in America," referring to the opportunity of local societies for preserving valuable material. An article by Prof. L. B. Hart; also, "The Outcome of the Cabot Quarter Century," by Henry Harris; "Spain and the United States in 1795," by George L. Rives. The book reviews are especially full; the notes and news valuable.

The Bulletin of the Essex Institute for Dec. '98, has a plate representing the first meeting house in Salem, A. D. 1634-'39. The *Journal of Geology* for August, 1898, has articles on "The Ulterior Basis of Time Divisions and the Classification of Geological History," by T. C. Chamberlain. He assumes a rhythmical periodicity instead of uniform continuity of life. 1st. The great earth movements effect all quarters of the globe. 2d. The major movements have consisted in the sinking of the ocean bottoms and the withdrawal of waters into the basins. 3d. Every continent develops a sub marine terrace about its borders. The development of the circum continental is subject to inter-current disturbances from local and from general sources.

Archaeological Papers of the Peabody Museum, Vol. 1, No. 6, contains a description of the pre-historical burial places in Maine. One at Ellsworth, another at Bucksport, a third at Orland, with implements—and the implements from the graves. It is intimated that they may belong to the Esquimaux or to the Beothuks. The relics are all of neolithic character and are pear-shaped pendants, flint hammer—stones celt-like blades, slate and spear-points.

The Home Magazine for November has an article on the "Unexplored Parts of the World," by Theodore Waters; also some "Japanese Fairy Tales," by Wm. Mills Butler; also "Through Unknown Thibet," by Rev. D. F. W. LeLaschem, missionary (American.)

Popular Science Monthly has published during the year the following papers on archaeology—1st. Archaeology a True Science; p. 282. Christianized Megalithic Monuments; M. de Mortillet; Mr. Baudelier's Explorations; Remains at Carnac, Brittany; The Houses of Saga Times. Also the following on anthropology. Literature of the African Negroes, Mr. Muret; The Romance of Race, Grant Allen. and Racial Geography of Europe; Ripley.

Science for October, 1898, contains the address by J. McKeen Cattell, of Columbia University, before the American Association on the Advance of Psychology. Hall, in 1883, established the first American laboratory at Johns Hopkins University. Ladd published his "Elements" in 1887. James at Harvard, Baldwin at Princeton, Jastrow at Wisconsin, Tickner at Cornell, Dewey and Meade and Angel at Chicago, are carrying on the work.

The Open Court during the year has contained several articles on anthropology, social science, comparative religions e.g. One in December, '97, on "Animal Worship," by T. Achelis; a series on "Ethnological Jurisprudence,"

by Justice Albert H. Post, and also series by Dr. Topinard. Other articles—"The History of Israel," "Christian Customs and Conceptions," are written from the historical standpoint, but lack the anthropological basis.

Saturday Evening Post for October 8 has a description of a last song composed by Mozart—entitled "The Requiem," which was his masterpiece. It was written after a dream in which he heard the song, and was sung by his friends at his death bed, the great composer carrying the principal part.

Scribner's Magazine for October, 1898, has a very interesting article by Henry Cabot Lodge on the "Story of the Revolution," one of the series. Also one, on the "Workers," by Walter A. Wyckoff. Also four pages on "Medals and Artistic Die Sinking," with cuts. Also an article on "American Popularity."

Education for September has an article on the Relation of American Literature to American Life, by Franklin B. Sawnel, Ph. D.; also Education in Hawaii, by Mrs. Cora D. Martin, and one on the Significance of Illiteracy in the United States. All these articles show that the educators realize that "Barbarism is our first danger."

BOOKS RECEIVED.

The Religion of Babylonia and Assyria, by Morris Jastrow, Jr., Ph. D. (Leipsic), Prof. of Semitic Languages in the University of Pennsylvania. Boston, U. S. A. Grim & Co., Pub. Athenæum Press. 1898.

Travels in Tartary, Thibet and China, illustrated, Open Court Pub-House, Chicago; London Agents, Kegan Paul Trench, Trubner & Co. 1st and 2d volumes.

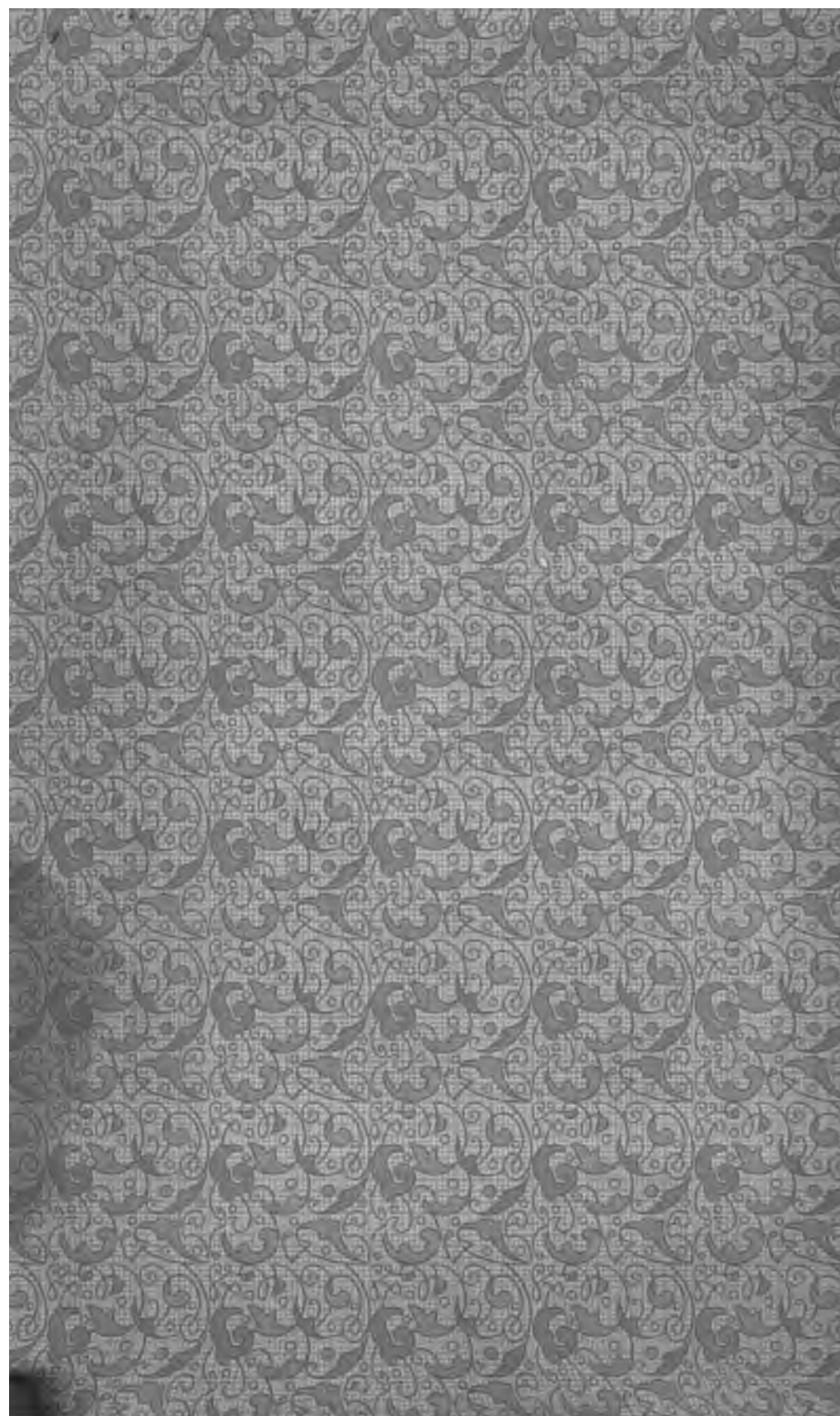
Historical Tales—"The Romance of Reality," by Charles Morris, Japan and China. Philadelphia, J. B. Lippincott Co. 1898.

Historical Tales—"The Romance of Reality," by Charles Morris, Russian. J. B. Lippincott & Co., Philadelphia. 1898.

The Jessup Expedition is composed of the following gentlemen: Harlan I. Smith, N. Y.; George Hunt, British Columbia; James T. Teit, B. C.; Dr. Farrand, Washington; R. B. Dickson, Washington. Mr. Smith sent over 115 boxes of relics, including 13 house posts carved with totems, grave posts, many things illustrative of physical anthropology, and articles illustrative of ethnology.

ACCESSIONS TO MUSEUMS.

During the next year we propose to furnish information in reference to all accessions to the museums in this country, and shall give a list of articles which are held by the museums for exchange. We have already made arrangements with the Field Columbian Museum, the Museum of Natural History in New York, Gen. Gates P. Thruston's Museum in Nashville, a museum in Haskell Hall in Chicago University, which includes the Egyptian and Assyrian Collections, and Walker Museum, which includes Mexican and Central American antiquities. We shall be glad to receive information from all the museums of this country, and send this note as an invitation to the Curators. We shall be prepared to illustrate some of the articles if drawings can be furnished to us.



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