SCIENCE

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INDIAN RELICS IN SOUTH JERSEY.

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It was the custom of the Indians to visit the seashore at certain times of the year. The trails they followed have been traced across the State of New Jersey. "Beach-day" and "clam-bakes" are customs learned from the Indians. The enormous quantities of shells in heaps along the shore are indications of these migrations and of their fondness for the oyster, clams and other mollusks. A certain kind of clam is still known by its Indian name, *quahog*. Many tons of these shells still remain in spite of the fact that large quantities have been used for roads, for farms and, long ago, for a flux in the manufacture of iron from bog-ore. The size and number of these heaps indicate that the bays and thoroughfares were then literally full of clams and oysters of considerably larger size than those of to-day. There is little else of interest in these heaps besides a few scattered potsherds.

Owing, perhaps, to the lack of fresh water, the inclemency of the weather and the noxious insects which infest these marshes, the seashore was but a transient resting place for the Indian. Tradition says that in spite of their endurance they were unwilling to bear, for any length of time, the bites of those pestiferous flies and mosquitoes.

From the physical geography of the region one may quickly judge where they would locate their permanent settlements. The sands of the interior offered few attractions. Water was their highway and the source of much of their food, so the majority of their villages were situated on prominent points of the rivers, not far from the bays and ocean, not far from fresh water, near fairly good soil, since he cultivated maize and perhaps pumpkins, beans and tobacco, near fresh-water "flats" where the "golden orontium" grows, the rootstalks of which were an important food, where he could find "snappers" or "logger-heads," as well as near a region of berries and game.

In many places in South Jersey the charcoal and grease of his kitchen-middens still blacken the ground. Here, too, are the bones of deer, turtle and other animals, bits of shells, pieces of Indian pipes, charred stones and other relics.

The largest rivers of that region are the Great and Little Egg Harbor or Mullica. On each of these there is the site of what must have been a very large permanent village. Vestiges are found in many other places in the neighborhood, but they are of little consequence in comparison with the region of Catawba on the Great Egg Harbor and of Chestnut Neck on the Mullica River. Two of the tributaries of the latter river are known as the Nescochaque and Mechesactauxin Branches. Another branch, called Edgepeling Creek, was the last resting place of the Indian in South Jersey and before their removal westward. With gratitude and frankness unlooked for in such barbarians, they credited the authorities with honest dealings toward their fathers and themselves.

The word Catawba, although an Indian name, is no way connected with the Indians who once lived there. It was named from the Catawba River, between the Carolinas, which received its name from the Catawbas who once lived along its banks.

Near Catawba, at South River, there are vestiges of an Indian village. Up the main river a short distance there is another at Goose Point. Throughout the whole region, in fact, there are signs of Indian habitations.

Catawba is a deserted sandbluff. Opposite are the fastnesses of a swamp forest. The river winds southward through many miles of marsh. So wild and deserted is the region that it requires but a little stretch of the imagination to see squaws picking berries along the banks or digging the rootstalks of the "Indian club;" others bringing clay from the beds near by, kneading and mixing it with bits of pounded quartz and sherds; others weaving moulds of grass and twigs; others ornamenting the finer grades with dots and lines; others working implements of jasper, and, perhaps, wampum, from shells. A group of wattled huts, thatched, perhaps, with the leaves of corn and calamus, surrounding a fire, on which there is a very large pot in which the rootstalks of the golden orontium are boiling, belongs to the picture.

Orontium aquaticum, so often spoken of by old writers as an important food plant, covers the flats of these rivers. It is believed by some to have been introduced by the Indians. It might be profitable to cultivate this plant, since it is not bad food, although it needs to be cooked full half a day to be palatable.

In the light and durable wood of the white cedar they found excellent and abundant material for their canoes. At Chestnut Neck, so called because of the chestnuts which once grew there, a canoe of chestnut wood was dug out of the marsh.

Chestnut Neck is much nearer the sea and is not so desolate as Catawba. The soil is richer, and the inhabitants well-to-do bay-men. Few Indian bones have been found in South Jersey in spite of careful searching. It may be that they carried the bones of their ancestors away, as did the Nanticokes.

Of all that they left behind them sherds are the most abundant, and fortunately, most valuable. Pottery is an unmistakable evidence of man. Natural formations similate his handiwork, but pottery, no matter how coarse, is a sure sign of human habitation. It marks best the progress of culture, since that was one of the first, the most lasting and the easiest method of expressing his artistic fancies. The mud-pie was the germ of art. The cultus of a people is often too quickly judged by the coarse sherds which cover almost every campsite. They made common vessels for common purposes. With the distinction of vessels began the separation of artist and artisan. We must measure ability, therefore, by the finest specimens found. Thousands of these bits must be collected, and from these the finest must be selected.

No whole pots have been found, to my knowledge, in South Jersey, but from the curvature of the bits some of them were of very large size. Some of these sherds are not decorated at all, others show signs of more artistic ability than is usually accredited to the Indian. The majority are soft, coarse and mixed with bits of quartz and sherds. Some are hard and fine. Some contain holes

near the rim for a bail, indicating that they carried their vessels in their hands and not on their heads. They vary in color, owing to the nature of the clay. Some have peculiarly ruffled surfaces, due to the kinds of moulds in which they were formed. The majority were moulded in baskets of grass.

Some are ornamented with straight lines and dots, others with curved lines, and dots in curves. The simplest decoration is where the edge is dented, as does a baker his pies. Lines often cross each other to form square and diamond figures. The top is often fringed with highly decorative bands. Many of the markings similate the tracks of animals, and on a potsherd found by me at Goose Point there is a picture of a human hand beside another hand, as though in the act of gesturing. Some of these are covered with what a potter would no doubt call a "slip;" that is, a very fine clay mixed to the consistency of cream and smeared over the surface of the vessel.

The pots varied much in size but little in shape. They were mostly almost round, although the writer has found a few angular sherds. Clay pipes are often picked up in their kitchen-middens. These are rude and unornamented. This is worthy of special mention since this peaceful, diplomatic and friendly emblem was usually much ornamented.

Almost as common as sherds are the little slivers and pieces of flint. The jasper which they used was supposed to have been quarried by the Indians in Pennsylvania and was broken by pouring water on the heated stone, as obsidian is quarried to-day. It is interesting to note that the Indian of South Jersey found his jasper elsewhere in another form. This is indicated by the fact that the writer has found many pebbles of this stone partly chipped. On one of these there was the imprint of a fossil shell, which may be a clue to its origin. Arrow-heads, spear-points and awls of jasper have been also found. The slivers of this stone which are so common in spots were probably not chipped but pressed off by some sort of a revolving apparatus. This is indicated by the little round pits which may often be seen in unfinished flints.

Indian axes are very scarce. They were made of a stone which is not found in South Jersey, and owing to their weight sink quickly and are lost in the sand. Potsherds, fortunately, come to the surface.

Such are the faint vestiges of a people who by disease, gunpowder and deceit have been practically exterminated. Some day archæologists will study the pieces of crockery, glass and brickbats, wonder over the old tin cans and brass heads of gun-shells which we leave behind us, and perhaps pronounce our cultus high in the arts and sciences; but in selfishness, the commonest human quality, we are, perhaps, but little, if at all, the Indian's superior.

NOTES ON SOME MINNESOTA MOUNDS.

BY ALBERT SCHNEIDER, UNIVERSITY OF ILLINOIS, CHAMPAIGN, ILL.

In the summer of 1892, while engaged on the zoölogical survey field work of Minnesota, I happened across a considerable number of "Indian Mounds." They were especially common in the Mille Lacs Lake region. All those observed were situated within a few rods of the old shores of Mille Lacs Lake, or of some of the numerous smaller lakes near it. They were all of about the same size and appearance, 40 to 50 feet in diameter at the base and 4½ or 5 feet high. As to the age of these mounds nothing definite can be stated; they are evidently of comparatively recent origin. Some had trees growing on them 2½ feet in diameter. It is reasonable to suppose that they are from 250 to 500 years old.

At Lake Warren, a small lake near the outlet of Mille Lacs, I dug into one of these mounds. Acting under the impression that they were burial mounds, I located a central point and dug perpendicularly downward. At a depth of about 5 feet I reached the level of the surrounding soil. Nothing was noticed but some ashes and fragments of charcoal, indicating that a fire had been kindled on the grave before the mound was built. Continuing the excavations I found the opening of the grave, which was about 4½ feet long by 3 feet wide, and gradually tapering downward to a rounded bottom at a depth of 4 feet. The hole was evidently dug with some crude instrument, as the roughness of the sides would indicate. In this one grave were found the bones of four human bodies and the scales of some fish. The bodies were arranged side by side in a sitting posture, with the legs and arms strongly flexed upon the body and the back toward the side of the grave. From the examination of the bones I made out the following points: One was a child of about six years, another that of a young person of sixteen or seventeen years, the third that of a middle-aged, medium-sized woman, the fourth that of a short, heavy-set, muscular man about fifty years of age. This man's teeth were very much worn, though none were decayed. In fact, all the teeth found were in good condition. Some of the vertebræ, the leg, arm and hip bones were well preserved. Only a few bones of the child were found and it was difficult to determine its position in the grave. It was apparently placed in a sitting position in the woman's lap. No utensils or implements of any kind were found. The sandy soil which made up the mound and filling of the grave was taken from a spot some ten rods distant, leaving a shallow depression.

Numerous pieces of pottery have been found in this region, mostly plain, some with crude ornamental markings near the rim. All pots or vases were rounded. Stone implements were also found. Copper implements were reported to have been found, though I was unable to see them.

The most interesting feature of the grave described is that it contained four bodies, apparently an entire family. How came they to be in one grave and evidently placed there at the same time? The probable supposition is that some epidemic carried away large numbers. In that case would it be likely that the survivors would build mounds over all graves? Or were only those of distinction honored with burial mounds? It is necessary that more mounds be studied before these questions can be answered. No scientific examinations have as yet been made of the Minnesota mounds.

It is probable that there is a close connection as to the time of formation of the "Indian Mounds" of Illinois and Minnesota and the noted "Animal Mounds" of Wisconsin and other states.

In closing, I wish to call attention to the necessity of thoroughly and systematically studying these mounds within the next few years, else the farmer and amateur archæologist will make useless and destroy all.

A UNIVERSITY course of thirty lectures on "Celestial Mechanics" by G. W. Hill, member of the National Academy of Sciences, Honorary Doctor of Sciences of the University of Cambridge, England, will be given in the astronomical lecture room, Hamilton Hall, Room No. 28, Columbia College, on Saturdays at 10.30 A. M. The course will begin on Oct. 14, and continue every Saturday until finished, omitting Saturdays, Dec. 23 and 30. The lectures are open to the public without fee. The course will be confined to the motions of the heavenly bodies considered as material points. Dr. Hill will give a somewhat full presentation of the subject rather than a rapid *resume*. Short numerical illustrations will enable the hearer to comprehend the bearing of the principles enunciated on practical work.