

THE GREAT SERPENT MOUND.

Results of Professor Putnam's Latest Explorations—A New Jersey Archaeologist on the Mystery of the Great Mound.

[Boston Evening Transcript.]

Professor F. W. Putnam, who has just returned from his expedition in Ohio, states that he has been in camp at Serpent Mound Park for seven weeks, exploring the ground in the vicinity of the great earthwork. The results have proved very interesting. Two burial places differing greatly in character and with a great interval of time between them, have been traced, also a more recent occupation of one of these burial places as a village site. The evidence, says Professor Putnam, is gradually accumulating, proving that the Serpent Mound belongs to the oldest period and that it is absurd to regard it as in any way connected with any people of which we have historic account. Below we give excerpts from an account of a recent visit to this locality, written for the American, of Philadelphia, by Dr. Charles C. Abbott, the well known author and archaeologist of New Jersey:

The great Serpent Mound of Southern Ohio is one of those curious earthworks that for nearly half a century has been a puzzle and delight to American archaeologists and one that has led to much wild speculation. Much of this is truly funny and none of it more absurd than the dogmatic assertion recently given to the world, that it is of Cherokee origin and of no significant antiquity. But before discussing its age and origin, let us consider what it is, as it appears to the visitor of to-day. At first glance, one might suppose that the earth had been merely heaped up into a long and gracefully curved line, so as to represent an unciling serpent or a snake in motion. It is more than this. Before its construction the place was leveled and the serpent, in all probability, outlined with stones and clay, and not only all the material gathered in clearing the ground, but more was brought to the spot. In short, the work was planned before its construction, and built with care. Its architect was an oncan engineer, a naturalist and an artist; or, if the joint product of a community, then they all showed skill in high departments of human intelligence, such as we look for in vain among historic Indians.

When, by whom, and for what purpose, was this Serpent Mound constructed? These are the three questions every visitor will ask—does ask, at this writing, of the eminent archaeologist, Professor F. W. Putnam, who is now on the spot endeavoring to solve this triple problem. I will not, at this time, anticipate any of his conclusions, but consider some of the suggestions he and others have already given to the world.

Concerning the antiquity of the Mound-builders and their works, Professor M. C. Read, with apparent good grounds for so doing, has remarked that the evidence was well-nigh conclusive that when occupied by this people and these works erected, the site and the surrounding country was a treeless region. He writes—"Their erection with Mound-builders' tools, if it involved the clearing of a forest as a preliminary work, is so nearly impossible that we cannot imagine it would be ever undertaken. It involved not only the clearing of the lands of the forest, but also the neighboring lands which were to be subjected to tillage. It is with the utmost difficulty, in moist and tropical climates, that men armed with the best steel tools make a successful battle with the forests. It is much more reasonable to suppose that these works were originally located in a treeless region, and the works evidently of the same age scattered over (this portion of Ohio), indicate that this treeless region was of large extent. * * * The inference would follow that the abandonment of the region marked the time when the slow intrusion of the forests reduced the amount of tillable land below the necessities of the community." When this took place can only be vaguely estimated, but that it was many hundreds of years ago is beyond all question. It required many centuries, as has been frequently proved, for a mixed forest growth to take possession of a country. It is in vain to attempt to express by numbers the age of an earthwork, but a scientific examination of both the structure and its surroundings may demonstrate a relative age that antedates all history. This has already been accomplished, so far as the Serpent Mound is concerned. It is a veritable relic of remote antiquity.

By whom was the Serpent Mound erected? Here we are confronted by a problem that probably will never be solved to universal satisfaction. It is an unfortunate fact that the great subject of the origin of races is, and is likely to be, in a miserably chaotic state. The craniologist, the philologist and archaeologist agree only to disagree; and the student of general anthropology can not yet, it is quite certain, blend the strong arguments of these specialists, and reach to a plausible conclusion. The stronger the argument of any one phase of anthropological science, the more decidedly contradictory is it of the assertions of the others. It was not a cheering outlook, when at a recent scientific gathering, an eminent anatomist remarked that he "did not care a rap for languages as a means of race identification," to which a philologist replied, "What is so variable as the shape of a skull?"

But the shape of the skull seems to have some bearing on the question of racial origin, in connection with the Serpent Mound. The recent exhaustive examination of the broad plateau stretching southwestward from the earthwork has yielded, among others, the very significant fact that the two peoples have used the place as one of burial, and that one antedates the other; and it is further very significant that the evidently more recent occupants were historic Indians. After all the shape of the skull does mean something; is a tangible fact; and the difference between the crania of Indians and of the earlier Mound-builders is too persistent to be denied or explained away as a mere coincidence. In the burial place that I mentioned, the more ancient interments, those, that is, that may be safely referred to the time of the Serpent Mound and its builders, are of a short-headed people, that of the same stock as the ancient Mexicans. I would not be understood as saying that the Mound-builders were Mexicans, or vice versa, but that they were both offshoots from a brachycephalic race, that reached America by a trans-Pacific route. This is the view that has been expressed by Professor Putnam in recent lectures, and his recent explorations have yielded nothing that conflicts with it. On the contrary, every fact gathered by the most laborious and exhaustive examination of mound after mound goes to establish the view that the people who built them were not the historic Indians nor even their immediate ancestors. On the other hand, that certain well known tribes of Indians, notably the Shawnee and Natchez as an instance, were descended remotely and indirectly from these builders of earthworks is extremely probable.

The fact that Indians, in very recent times even, built mounds, mere conical shapes of earth placed over their dead, does not warrant us in assuming from such a fact alone that the elaborate structures, such as this Serpent Mound, were also the work of their hands. Had it and many other of the earth structures in Ohio been erected by them or their immediate ancestors, it is highly improbable that this fact and that of their significance should have been completely forgotten; yet no one of them finds place in Indian history. Its purpose? Whether we admit its origin to be pre-Indian or not, this question will be asked, and it is a curious fact in the experience of the writer, that the visitors to the Serpent Mound never wait to hear a reply, after putting the question, follow it with their own views.

Probably the average student of archaeology would only go so far as to suggest the probability that it had, in the minds of the builders, a religious significance. This view, I have found, meets with little favor from the casual visitor. "Injuns were heathen, and hadn't no religion," was the prompt reply of one.

In the minds of the builders this great earthwork was doubtless tenanted by a serpent spirit which was thought to faithfully guard the dead who rested near it, if not the living who dwelt in the surrounding region; but that kindly spirit slumbers as profoundly now as do the mighty coils and gaping jaws that have braved for unknown centuries alike the torrid heat of summer and pitiless raging of midwinter storms.

This religious or symbolical character of the entire structure is emphasized, I think, from the fact that a large oval embankment is situated directly in front of the serpent's gaping jaws. This added earthwork gives an even more life-like appearance to the whole, although it was by no means needed. What, of course, is the significance of the "egg," as this oval structure is popularly called, can only be conjectured; but indeed, there is little to be done but guess, and never very shrewdly perhaps, while we wander along the curves or pause to admire the gracefully coiled tail; or, from the park-land behind it all, we survey the structure as a whole.

And here let me add that every opportunity is now offered to him who would study this vestige of antiquity. It was a happy thought to preserve it for all time from the destruction that threatened it. Recently it was purchased by private contributions, and is now, with all the immediately adjacent land, held in trust by the Peabody Museum of American Archaeology, of Cambridge, Mass.

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FACTS ABOUT FURNACES.

A Noted Sanitary Engineer on the Effects of Furnace Heat on Health.
In February, 1881, the committee of hygiene of the Medical Society of Kings County rendered a report, which is published in full in the proceedings of that society, upon catarrh and whether that disease was aggravated by residence in cities. The opinions of a large number of physicians of long experience were obtained and their testimony showed "that though climatic and city influences have much to do with the creation of catarrh, yet defective heating, lighting, airing, sunning and drainage of houses, with improper views as to air, clothing, bathing and exercise are the main causes." Individual physicians laid special stress upon individual influences, as "dry and irritating air from villainous furnaces," "increased furnace heat and artificial methods of living." Furnace air per se is not so unwholesome, but it is the absence of ventilation which makes it so. If a furnace of sufficient size to warm a building without opening every draft and heating the firepot red hot, and if the fresh air supply is taken from a proper source and not from damp area of unclean cellar; and, furthermore, if there are sufficient openings at the top of the house to allow the impure air which rises to that point to escape and thus cause a constant circulation of sufficiently warmed but not overheated air through the house; under these conditions a furnace is not objectionable.

Furnaces are often badly located. It is easier to force warm air through a furnace flue fifty feet away from the prevalent wind than ten feet in the opposite direction. Hence, the furnace should be placed nearest the Northern side of the building or two should be provided. Hot-air flues should not be carried for any distance through cold cellars, halls or basements, as they will become chilled and will not draw without being cased with some non-conducting material, as mineral wool. Don't set a furnace in a pit, especially in a wet soil where water will collect, after every rain storm, but stand it on brick arches, so as to raise it above the ground; also cement the pit. It is unfortunately very common to find such depressions filled with water; this causes rusting of the furnace itself and damp in the cellar. In very many houses occupied by persons of means the furnaces are no longer used, but have been replaced by open fires. This is costly comfort, but it is a commendable plan, as it furnishes ample ventilation to the living rooms. It is desirable that one room should at least be thus supplied with a cheerful and sanitary fire.

Where fresh-air inlets are carried from the house drain to the front of a house at the yard level they should not be located near to the cold-air supply, as there is a chance that during heavy states of the atmosphere a down draft may be created and the foul air sucked into the air box and thence upward into the house. Registers should never be placed at the floor level, as they will collect dust and sweepings, which are liable to take fire.

Furnaces with heavy castings heat slowly and are less easily cracked or warped and they cool more slowly, so that the heat evolved is more uniform. It is well to retain the air close to the firepot and thus keep it longer in contact with the fire-heating surface.

Water pans are often badly arranged so that they admit dust, and as they are seldom cleaned that may become offensive. They should always be supplied by a ball cock, so as to be automatic, rather than by a stop cock, which has to be opened by a servant who may be neglectful.

Attempts have been made to filter the air before entering the furnace but they usually fail. A screen of galvanized iron wire of one-sixteenth mesh will exclude most floating material from the air. The air supply is sometimes taken from the attic, but it is apt to be dusty and impure. Others take it from vestibules of halls or piazzas, which are not bad places.—Charles Wingate, in Philadelphia Press.

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