

All of the work of laying the pipes and building the septic tanks, etc., was done by the boys of the Reformatory, and thus the expense of the whole system was very much smaller than it would ordinarily be. The trenches for the pipes vary in depth from two to seventeen feet, and at many points considerable difficulty was encountered by running across springs or currents of underground water, which interfered very materially with the progress of the work. At the time of writing the paper, the sewer and septic tanks were all ready for reception of the material. The plumbing, however, has not yet been completed, but as soon as this is done the sewage can be turned into the pipes and the result of the method of disposal installed will be watched with much interest. It is practically the first experiment of this kind attempted by any institution in this State; and if successful, and there is no reason why it should not be, it should serve as a type or an example for many of the State institutions, and even for many of the smaller towns of the State.

SOME RECENT MOUND INVESTIGATIONS IN JEFFERSON COUNTY, INDIANA.

GLENN CULBERTSON.

During the summer of 1902, through the interest, and under the direction, of Miss D. L. Cravens, of Madison, Indiana, several mounds located in Jefferson County were examined, and two were explored. The writer was asked to assist in the investigation.

The purpose of this paper is, in part, to give a record of the contents of the mounds opened, and in part to call attention to the fact that, in many parts of our State, and especially along the Ohio River and its larger tributaries, there are mounds and other evidences of the existence of a prehistoric people of which no record has been made, and which should be of great interest to science. Many of the mounds have been opened by curiosity or treasure seekers, or destroyed by cultivation, and the contents scattered or lost, and no record has been, or can be made.

As an example of the ruthless destruction of valuable anthropological material, a case may be cited of a Jefferson County farmer, who, in grading a plot of ground for building purposes, ploughed up at least twenty skeletons, many of which were said to be in a fair state of preservation,

Some of the bones were carried off by neighbors, others were scattered about, and no record whatever preserved. This occurred some six or seven years ago, and similar cases probably occur every year in different parts of the State.

The first mound opened in Jefferson County, in 1902, is known locally as the "Lawson Mound." It is situated in Milton Township, T. 4, R. 11, Section 14, one mile east of Manville, on the narrow ridge between Brushy Fork and Indian Kentucky creeks, and approximately 300 feet above the level of the latter stream. The mound has been, until recently, covered with forest or underbrush growth, and is well preserved. It is essentially circular, sixty-five feet in diameter, and approximately nine feet high. The materials of which the mound was made are of local origin, and are made up of the ordinary surface soil of the vicinity. They include a few limestones, burnt and unburnt, and a few pebbles and pieces of chert. A thorough investigation of the contents of the mound could not be made, since the central portion was preoccupied by graves of the former owners of the property. When these graves were dug a skeleton was found some three feet below the surface of the mound. Along with the human bones nine arrow heads, placed in a circle, and a stone ax were found so situated as to lead to the opinion that they had been placed on the breast of the buried body. These articles were not preserved, according to Mr. Frank Wolf, who was present when the graves were dug and whose statements I have recorded above.

The excavation of this mound consisted in opening a ditch four feet wide and to the depth of the original soil, from the east side toward the center, and surface excavations to the depth of three feet on the north, west and south of the graves mentioned. At a point some five feet east of the center of the mound, and three feet below the surface, an unglazed earthenware vessel of approximately one and one-half gallons capacity was found. In shape, this vessel was similar to the ordinary Chinese rice pot, and was without markings of any kind. It contained two mussel shells, such as could be obtained from the surrounding streams. The vessel was cracked and had probably seen considerable service before being placed in the mound, as the lower portion showed the reddening influence of the fire.

Within a foot or fifteen inches of the earthenware vessel, and to the east, there were obtained the fragments of a skull and the larger bones of the arms and lower extremities, and one rib. All were greatly de-

cayed. The position of the bones might indicate burial of the body on its side with arms and legs folded together, but this could not be decided definitely. The skull was so badly decayed that no definite idea of its shape could be obtained. The bones were those of a medium-sized person.

On the west side of the mound, in line with the two skeletons already mentioned, and at about the same depth as the others, another deposit of human bones was obtained. This deposit consisted of a skull and the larger bones of the upper and lower extremities. These were also greatly decayed. The position of these bones precludes the idea of their being the result of an ordinary burial. The long bones had the appearance of having been piled in, very much as a bundle of sticks or stove wood would be placed. The skull was placed directly on top of the other bones. These bones were those of one body of large but not unusual stature. The relics obtained from this mound are at present in the Hanover College Museum.

The reputed "Indian Mound" in the village of Lancaster, in Lancaster Township, T. 5, R. 9, Section 33, was next examined. It was found to give every evidence of being a natural formation. The so-called "Indian Mound" on the Wainscott Place, near Middle Fork Station on the P. C. C. & St. L. R. R., was also closely examined. Evidence of its human origin, however, was entirely wanting. This peculiar mound is, in all probability, the result of stream erosion.

A mound situated on the second bottom of the Ohio River, a short distance below Hanover Landing, in Hanover Township, T. 3, R. 10, Section 18, was next excavated. This mound had been explored in part by Messrs. G. S. Taylor and W. W. Walker, some fifteen years ago. As reported by Mr. G. S. Taylor, now Superintendent of Schools of Jefferson County, this mound was then some twelve or fourteen feet high and of conical shape. At a depth of about three feet from the original top of the mound these gentlemen found five copper beads from one-half inch to three-quarter inch in diameter and of rough finish, arranged in a circle, as though originally forming a necklace. A considerable quantity of charcoal and ashes was also found, but no human bones.

Last July a trench eight feet wide was opened through the mound from east to west, and extending to the depth of the mound. All the excavated material was closely searched. At a point approximately three feet above the bottom of the mound two stones, each about 15x7x1½ inches, were found in an erect position and about four feet apart. Two

and a half feet to one side of these stones a copper bead one-half inch in diameter and thickly encrusted with the green carbonate of copper was found. No bones were found at this level. On the original soil, at the bottom of the mound, a large quantity of charcoal and ashes, and one or two bone fragments, probably non-human, were obtained. With these there were fragments of burnt limestone. The failure to find human bones in this mound may be due to its great age, or it may be accounted for by the partial destruction of the mound by cultivation, since such material may have been ploughed out and no record made of the fact.

THE WATER SUPPLY OF HAVANA, CUBA.

C. H. EIGENMANN.

Until recent years the water supply of Havana came from the Almendares River. During the nineties the present waterworks, deriving the entire supply from a large spring at Vento, on the south bank of the Almendares River, was completed. The Vento Springs and the covered aqueduct leading its waters under the Almendares River and into Havana are the pride of the city of Havana, which has erected an imposing monument to the engineer by whom the work was conceived. The Vento Springs are surrounded by masonry with walls sloping outward from the springs, except on the side nearest the Almendares River, where they are vertical. The surface water running down the slopes of the masonry are caught in a gutter which discharges it into the Almendares. At the top of the masonry, and some distance removed from its margin, another gutter catches the surface water of the region sloping toward the springs, and discharges this also into the Almendares. The spring water flows direct from the basin into the covered aqueduct. The provisions for maintaining the water in its original purity from the time it issues from the ground till it is discharged either into the reservoirs near the city, or direct from the faucets in the city, seem ideal.

There has been some speculation as to the origin of the water issuing from the spring at Vento. The water is beautifully clear and rather warm, having a temperature of 26°C. at the time of our visit. The Almendares River, flowing but a few feet away, also has clear water except after heavy rains, and its water at the time of our visit was slightly colder than that of the springs. It is possible that the Vento Springs derive