

Earthworks Tell of Early Americans

Anthropology

Chapters from the home life of primitive mound-building Indians are being pieced together by George Langford of Joliet, Ill., as a result of excavations in a group of curious ancient pits surrounding two ancient mounds on the Fisher farm near there. Evidence so far unearthed indicates that the Indians who buried their dead in the mounds built their dwellings in this circle of shallow, saucer-like depressions around them. Details of their daily lives can be read from thousands of things taken out of the pits, such as broken bones of the game they ate, weapons and tools of stone, bone, horn and clamshell, fragments of pottery, pendants and other ornaments, and even from the bones of their dead, found buried rather haphazardly all over the place.

The pits themselves were scraped to a depth of three or four feet beneath the original ground level, and the earth thrown out to make a raised rim two feet or more high; their inside diameter ranges 15 to 30 feet. How the Indians roofed them is not known, for no trace of either covering or of supporting central posts has

been found. They were warmed by central fires, for the largest deposits of ashes are always found in the middle of the pits.

A note on mound-builder squaw housekeeping is furnished by numerous holes, about arm-length deep, sunk into the ground both within and outside of the pits. These frequently contain quantities of mussel shells or the remains of hoards of corn; they were evidently the Indian equivalents of cupboards or refrigerators. Other holes served as garbage cans.

That these pits were occupied for many generations is evidenced not only by the large quantity of objects of human use that have accumulated in them, but also by the fact that the tools and weapons are not all of the same workmanship. There are two distinct types of stone implements, and two or more varieties of earthenware pots, hinting at the probable displacement of one tribe by another. The human burials are of three types, indicating a succession of at least three peoples. The last tribe to occupy the pits had contact with white men, for some of the burials have

glass beads and other objects of European manufacture associated with them. Two arrowheads of iron, a metal unknown to pre-Columbian Indians, have also been found.

All told, 50 pits have been discovered and measured. Thirty-four of them are arranged in a circle around the two principal mounds that existed at this site, as though their purpose was partly defensive. Fourteen others form another group, and a lone pair stands off at a little distance. Much work remains to be done on these pits, though the exploration of their mounds has been completed.

Mr. Langford, whose researches have been formally reported to anthropological societies, is not a professional scientist, but a factory executive. In his excavations of these Indian earthworks, which have for several years been his principal recreation, he has had the volunteer assistance of two of the members of his factory staff, Albert Tennik and Thomas C. Dudley.

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Magic Carpet—Continued

of water can not evaporate at all. Beneath it the ground is mellow and moist to the very surface, just as you will find it beneath a chance board you may have left lying on freshly spaded ground that has elsewhere begun to dry out on top. In this mellow top layer the plants can deploy their roots and help themselves to water and mineral salts as fast as they like.

This cutting down of surface evaporation has another advantage. Evaporating water always reduces temperature, as everyone knows who has ever stepped out of a bathtub even on a reasonably warm morning. Water evaporating from the soil reduces the temperature of the soil, which as has already been noted, needs to be boosted rather than lowered in the spring. By preventing its evaporation the paper carpet is acting in still another way to keep the soil warm.

The function of the paper carpet in keeping down weeds is so obvious that it does not need to be discussed in detail. Weeds, of course, spoil the looks of a garden, but, worse than that, they rob the crop of moisture and soil nutrients, and growing over its head they cut (*Turn to next page*)

Thirty Million Volts From Air

Physics

Millions of volts of electricity drawn from the stormy air may soon provide physicists with the power necessary to disintegrate the atom and transmute one chemical element into another, if experiments made by German scientists continue successfully.

Electricity of nearly two million volts, capable of jumping gaps of nearly 15 feet, has been obtained from the air by Drs. A. Brasch, F. Lange and C. Urban, three members of the staff of the Physical Institute of the University of Berlin.

Mount Generoso, in Switzerland, near Lugano, was the scene of these experiments and the scientists are now preparing to return to continue them. This mountain is noted for the frequency of electrical storms upon it, and also it has the advantage of being easily accessible.

It was found impossible to make use of kites for the purpose of collecting the atmospheric electricity, because a wide meshed wire net having an area of several hundred square yards was needed. It was out of the question, they found, to suspend this from kites or balloons,

because such means would be particularly undependable during a storm, when the experiments were made.

In order to get the net as far as possible above the earth, they hung it on a cable between two mountain peaks. The span was about 1800 feet, and the height of the net above the ground about 250 feet. At each end were chains of insulators capable of withstanding as much as 3,000,000 volts.

Another problem was to prevent what are called brush discharges, in the conductors which carried the current from the net to the measuring instruments. The intensity of these discharges is less, the greater the radius of curvature of the conductor, so that the discharges would be less from a large hollow cylinder than from a smaller solid wire, with the same amount of metal. As long cylindrical conductors would have been difficult to transport to the mountain, Dr. Brasch and his associates made use of a string of short, round-ended cylinders.

From a lightning proof metal house the observations and measurements were made. (*Turn to next page*)

Isostasy

Geology

To be sung to the tune of "Maryland, My Maryland.

What is it rules the upper crust?

Isostasy, Isostasy.

What actuates the overthrust?

Isostasy, Isostasy.

What gives the shore lines wander-lust?

What humbles highlands to the dust?

What makes the strongest stratum bust?

Isostasy, Isostasy.

That all's in equilibrium,

So Bowie says, so Bowie says,

Is proven by the pendulum,

So Bowie says, so Bowie says.

And why the plumb line's never plumb

And why the mountains go and come

Is simple as the rule of thumb,

So Bowie says, so Bowie says.

Conservatives in vain have cussed

Isostasy, Isostasy;

The strongest power on earth is just

Isostasy, Isostasy:

So let us down our deep disgust,

If we'd seem up to date we must

Roll up our eyes and take on trust

Isostasy, Isostasy.


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Thirty Million Volts—Continued

The spark gap, under the last of the short cylinders, could be regulated from this post, and, from the length of the gap across which the spark would jump the voltage was determined.

As the chief electrical storms of the neighborhood are in the summer, and as the apparatus was not completed until last August, the best storms had to go unused. One storm occurred after it was completed, and indicated the success of the method. The spark gap could not be made larger than about 15 feet, but the spark easily jumped across it at the rate of about one per second and continued for thirty minutes at a time. Also, it was found with an auxiliary collecting antenna, and with distant storms that affected the main station, that a discharge of once a second was possible at all times.

During the winter months, the experiments were discontinued, but the apparatus was left in place. The scientists are now preparing to return, to take full advantage of the storms this season. With the antenna about three hundred feet above



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Magic Carpet—Continued

off the all-necessary sunlight. Weeds are the second great compulsion for the hoe; but as we chop them down we face the discomforting reflection that, try as we may to spare the vegetables, we are cutting their roots, too. Even in their death the weeds do us a mischief.

But under the impervious blanket of asphalt paper they never get a chance to be born. Their seeds may germinate, and their feeble infant sprouts crawl about, vainly seeking the sunlight without which they can not live. But, when their initial stock of nourishment has become exhausted, they perish, and the waiting germ life of the soil seizes upon them and returns them to the mold from whence they came, and the roots of our garden vegetables pluck up their substance and turn it into food for our tables.

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Light colored walls make a room look larger than dark walls.

An airplane recently collided with a mountain peak in Europe, killing two fliers.

the earth, a height that could easily be obtained, voltages as high as thirty million would result.

Dr. Brasch and his colleagues credit Benjamin Franklin with being the pioneer experimenter in the field in which they are working. One possible use of these huge voltages, they say, is to generate extremely rapid cathode rays, similar to those formed in the tube recently developed by Dr. W. D. Coolidge, of the General Electric Company. These are similar to one of the principal radiations from radium, but with 30 million volts, the artificial rays would travel even faster than those emanating from radium itself.

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Primitive men, it is believed, ate only once a day.

Grasshoppers are an important item of food in India.

The price of giraffes has more than doubled since the war.

The natural gaits of the horse are the walk, canter and trot.