

potash would have been in this list and there would have been much worry over the fact that Germany had a monopoly. But discovery of large high-grade deposits in New Mexico has practically guaranteed our self-sufficiency.

Other minerals, like graphite of the "chip" and "flake" varieties, this country lacks in those particular forms, while others, like chromium ores and manganese, do not measure up in metallic content or freedom from impurities.

If America could not get tungsten for its incandescent lamps our electric light bills would be a million dollars higher daily, yet the tungsten used in lamps in a year is worth only about \$200,000.

*Science News Letter, August 7, 1937*

## BIOLOGY

## Neutrons Are More Potent Than X-Rays For Sterility

**I**N experiments that involved sending a dozen albino mice by air express from Bar Harbor, Maine, to San Francisco and back again, it was demonstrated that neutron rays are five to six times as effective as X-rays in producing sterility in the male.

Dr. Paul C. Aegersold of the University of California Medical School, exposed the mice to streams of neutrons in the famous Lawrence neutron producing machine, while Dr. George D. Snell of the Roscoe N. Jackson Memorial Laboratory at Bar Harbor furnished the mice and conducted the biological experiments. (*Proceedings of the National Academy of Sciences* July.)

This superior effectiveness of the neutron, atomic particle discovered in 1932, checks with experiments that show neutron radiation to be similarly more potent when directed at cancer cells.

Further experiments are expected to throw new light on the size and structure of the genes, the minute elements within the germ cells that determine hereditary traits.

The sterile period produced by the irradiation treatment extended from three to 12 weeks after the raying.

*Science News Letter, August 7, 1937*

To study how roots of fruit trees grow in the soil, a British scientist has designed observation trenches fitted with plate glass windows.

Finding a scrap of a glass bowl made about 2000 B. C., a Swedish archaeologist reports that glass was made in Egypt five centuries earlier than supposed.

## ANTHROPOLOGY

# Uncle Sam Hunts America's First Human Inhabitants

## W.P.A. Workers Dig on the Abbott Farm, New Jersey, To Settle Issues of Famous Scientific Battle

**U**NCLE SAM is joining in the hunt for the most elusive people in America—our Ice Age inhabitants, if any.

Scene of the hunt is a farm near Trenton, N. J. Works Progress Administration workers, directed by well-known archaeologists, Dr. Dorothy Cross and Dr. Eugene Golomshtok, are digging for evidence there, where the last ice sheet left its debris of gravel when it melted back toward the northland.

Were there—or weren't there—human beings already roaming America in those days, when the Ice Age ended? That is the most fought-over question in American science. If the answer is yes, then America has been inhabited at least 15,000 years.

Naturally, a country wants to know who its first inhabitants were, how long

ago they arrived. But for America this has proved a baffling, long-drawn-out mystery.

Abbott Farm, scene of the WPA glacial-man hunt, has been famous in American science for over 60 years. As long ago as that, Dr. C. C. Abbott announced finding clumsy stone blades when he dug through black earth into a layer of yellow loam on his land. People who made the rude tools, he asserted, were older and more primitive than the well-known Delaware Indians who were in New Jersey when white men arrived.

In fact, Dr. Abbott was bold enough to suggest that these stone tools came to rest in the loam just above the glacial gravel in the very days when the glacier retreated.

That bombshell of an idea launched



### PARTIAL BURIAL

*Head-and-leg burials reveal a mysterious custom of New Jersey aborigines. Dr. Eugene Golomshtok removes one of these, wondering whether these Indians were cannibals or headhunters, or whether they merely felt that heads and legs were enough for a spirit existence.*



#### OLD AMERICAN CUSTOM

*Women smoked pipes, not cigarettes, in Indian days in New Jersey. This Indian woman was buried with her pipe in her left hand, centuries ago.*

the scientific Battle of Trenton, in 1872, that is still going on.

In the course of years, there have been archaeologists who went to Abbott Farm and dug on comparatively small scale, just to see what they could learn. But they never found satisfying evidence to prove to their fellow prehistorians whether the stone blades were very ancient, or merely the handiwork of known Indian tribes.

In hope of getting somewhere with this argument, the WPA corps of workers is attacking systematically a field in Abbott Farm. They are using the latest approved technique of archaeological digging. That means squaring off the field by surveying methods, so that each small five-foot section of the site can be mapped, and anything found in it can be charted to show its exact resting place. To sample the possibilities of the field, trial trenches have been dug through the ground, and where pay dirt in the form of antiquities is struck, there more intensive digging can be done.

#### Record Made

Each object recovered is at once given a number, and its description and circumstances of finding are recorded. Modern archaeology is more eagerly concerned with the story that an old object tells, than with finding relics for exhibit.

So far, the field has not yielded any secrets of glacial man's presence. Thousands of objects, however, belonging to later inhabitants—Indians of the Delaware or other Algonquian tribes—have been coming to light.

The farm overlooking the Delaware

River seems to have been a favored place with woodland Indians of the region, Dr. Cross explains. When she and her associates sort out stone and clay relics they identify with practised eye such things as these:

1. Numerous arrow and spear heads used by Indian hunters.
2. Sinew stones, used to make animal gut pliable; and stone knives of half-moon shape, used for scraping hides and chopping meat.
3. Innumerable net sinkers, usually notched pebbles, which show how busily the Indians fished.

#### Farming People

4. Hoes, mortars, and pestles in surprising quantity. These prove that the natives in this woodland put in far more time farming than anyone supposed.
5. Axes, celts, and gouges. These show that felling trees and wood working were everyday occupations. The Indians, judging by Delawares of historic time, built homes of sapling frame with bark covering.

6. Anvils, where arrow makers shaped the stone points for war and hunting.

7. A variety of ornaments such as beads, pennants, and bannerstones. The last-named curious stone objects have long puzzled archaeologists, who find them widely in Indian excavations. They can only wonder whether "bannerstones" were really attached to ceremonial staffs like banners, or whether they were spindles, bow-drills, or ornaments for neck or hair.

8. Big clay storage pots, which the Indians buried level with the house floor.

These took the place of grain bins and cupboards.

Strange burial customs were followed by Indians who lived at the site. The nine skeletons that have come to light consist of skull and leg bones or skull alone. Were these Indians head-hunters? Cannibals? Or did they have a way of carrying the most important bones, the head and legs, of the deceased back to his native village for burial?

"If we can ascertain the reason for this strange proceeding," says Dr. Cross, "it will be one of the greatest scientific contributions we have made and incidentally it will throw some much-needed light on the burial customs of the local Indians."

#### Woman With Pipe

A sidelight on women's smoking customs in aboriginal America is revealed by a skeleton of an Indian woman who was buried with her pipe in her left hand. This burial, found by WPA excavators on a New Jersey farm farther south than Abbott Farm, was photographed from various angles for record purposes, before the bones were removed. To move the fragile skull, they first covered it with earth and newspaper layers, and then made an outer cover of burlap soaked in plaster. When the plaster set, the complete rough cast was scooped out with some earth beneath it, and removed to an office where it could be handled more safely.

Besides exploring Abbott Farm and other Indian settlement sites, WPA workers are delving in libraries and museums of the state to recover forgotten facts about New Jersey in Indian days.

Under Dr. Cross' direction a state-wide survey of Indian sites is being made. Private collections of Indian relics throughout the state are also being inventoried. Over 65,000 such relics have already been listed, and unusual objects have been described in detail and drawn or photographed. The records all go to the State Museum at Trenton, there to be used when future discoveries call for a check-up on the known relics of Jersey Indians. See page 92 for another illustration.

*Science News Letter, August 7, 1937*

In 1935 there were 400 trailers produced; last year this new industry turned out 10,000.

Heat may kill more trees than lack of moisture in hot drought seasons, it is learned from a study on forest plantations.