

## ARCHAEOLOGY

# Unearth Lydian Treasures

► THE GOLDEN TOMBS of Lydia—land of fabled King Croesus reputedly the richest of all men—may be uncovered next year with the help of geophysicists.

Equipment for measuring the electrical resistance in the soil is now being improved to help tell archaeologists where to dig and how deep. This could make it possible to find directly the tunnels that lead to small untouched burial chambers without digging out the entire mounds.

This would save both time and money for the Harvard-Cornell expedition that has just finished its fourth summer of excavations at Sardis, Turkey, which was once the center of ancient Lydia. The team consists of 30 scientists and some 200 workers under the direction of Prof. George M. A. Hanfmann of Harvard University and Prof. A. Henry Detweiler of Cornell University.

During the past summer, geophysicist Dr. David Greenwalt of Massachusetts Institute of Technology, Cambridge, Mass., tested resistivity equipment to see if it could effectively lead archaeologists to buried objects. This type of equipment was tested experimentally earlier in Italy and Central America.

Dr. Greenwalt found that the electrical resistance of the surveyed area increases when objects buried in the ground are of different consistency than the surrounding soil. For example, a stone monument could be detected if buried in soil and sand. A mud-brick wall from an ancient building, however, would not show any appreciable difference from the surrounding soil because it would have about the same electrical conductivity.

He also found that the soil has to be fairly uniform to get good results. If areas of gravel or stone are mixed in the soil, the equipment will register a "noise" similar to interference on television.

MIT told SCIENCE SERVICE that Dr. Greenwalt is hopeful he can improve the equipment to make it useful to archaeologists when they begin excavating the large burial mounds about five miles north of Sardis next summer. Each mound is 400 to 500 feet high. Some have been robbed but many are still intact from ancient times and could yield invaluable information about the lives of the people who lived in this metropolis, the Paris of the ancient world for nearly 3,000 years.

This past summer the Harvard-Cornell

expedition uncovered one tomb of a Lydian lady who lived during the time of King Croesus' father, about 600 B.C. Gold jewelry, a silver figurine and pottery were found in the grave.

A whole street about 50 feet wide was uncovered by the busy team this year. Marble pavements and sidewalks and mosaic colonnades were found on this ancient business street. A portrait head, portraying an unknown sage or saint, was probably part of a statue in the colonnade before Persian invaders destroyed it after 600 A.D.

Dr. Hanfmann told SCIENCE SERVICE that excavations are now planned to continue at Sardis until 1968. By that time the team should have obtained enough data to have a general plan of the city and to establish the sequence of major historical phases. Evidence dating back to the earliest agricultural settlements in the area should also be established by that time.

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## ANTHROPOLOGY

# Neanderthal Re-evaluated

► ANCIENT NEANDERTHAL man, long believed an apelike creature from a dead branch on man's family tree, could turn out to be an ancestor of modern man.

Dr. T. Dale Stewart, head curator of the department of anthropology at the Smithsonian Institution, told SCIENCE SERVICE that the Skhul people found in Skhul Cave in Mount Carmel, Palestine (now Israel), could have evolved into a modern man during the time gap between 50,000 years ago when Neanderthals disappeared and 35,000 years ago when modern man appeared.

Dr. Stewart said Neanderthals, when first discovered, were pictured as much more primitive than they actually were. He said these primitive men were not too much different from modern man.

According to Dr. Stewart, Neanderthals fall into two populations:

1. The primitive type who has been found in Shanidar Cave in Iraq, Tabun Cave at Mt. Carmel, and in Europe. He is believed to have died out as he became increasingly primitive.

2. A more modern type such as the Neanderthals from Skhul Cave who probably lived about the same time as the Shanidar man, 45,000 to 60,000 years ago or earlier. This type could have evolved into a modern man.

Apparently the two types lived at the same time; the primitive type is most often associated with the idea of Neanderthals, having practically no forehead and very large eyebrow ridges.

Dr. Stewart said that so far as is now known no Neanderthals lived later than 45,000 years ago. The exaggerated features now associated with Neanderthals were mainly found in the sidelines of the primitive types while the evolutionary main-streams of these men were more in the direction of modern man.

Neanderthals have been credited by some anthropologists with the invention of sewing, and the first known evidence of surgery was found in a Neanderthal whose arm had been amputated.

The first suggestion of man's humanity to man was seen in this same individual who had been allowed to grow up and live for some 30 years despite the fact that it was necessary to protect and wait on him.

Dr. Stewart reported on the evidence of human evolution and the evolution of modern man from Neanderthals at the Washington Academy of Sciences.

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**ANCIENT HEAD STUDIED**—Prof. George M. A. Hanfmann, field director of the Harvard-Cornell Expedition to Sardis, Turkey, studies a portrait-head recovered from the debris over the main road of Sardis.