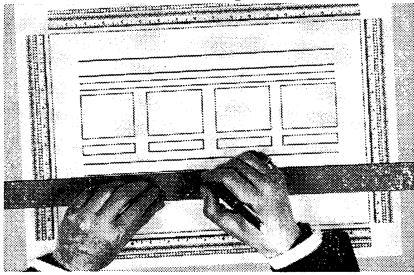


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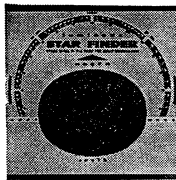
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## ARCHAEOLOGY

# Magnetism Locates Ruins

An electronic instrument, originally used in the U.S. space program, has enabled archaeologists to locate and map a 2,500-year-old submerged Greek city.

➤ AMERICAN AND ITALIAN archaeologists are mapping a 2,500-year-old Greek settlement that man may never see.

Using an electronic instrument, which is more than a hundred times as sensitive as any previously used in archaeological exploration, a group of scientists have located what is believed to be either the seaport of the half-legendary city of Sybaris, or Sybaris itself, on the Crati plain facing the Ionian Sea.

Because the ruins are covered by earth and lie 15 feet below the level of water in the ground, the possibility of excavating them is remote due to the high cost. However, the exploring instrument, a rubidium magnetometer clearly defines their shape, size and location, enabling archaeologists to map the ruins without physically having seen them.

So far it has located buildings, walls and even paved roads buried in a two to three square mile area.

Sybaris, which was destroyed by neighboring Crotona in 510 B.C. according to ancient sources, was the wealthiest city of the ancient Greek world. Its inhabitants, noted for their love of luxury and indolence, taught their cavalry horses to dance to pipe music, an accomplishment which reputedly led to the city's downfall.

At a crucial moment in the final battle, the attacking Crotonians played pipe music and the Sybarite horses danced off with their riders, leaving the city undefended. Sybaris was destroyed and the course of the river Crati was diverted over the ruins.

Archaeologists have been searching for the site of sixth century B.C. Sybaris in an 80 square mile area of the Crati plain since 1878. Finally, with the successful adaptation of the rubidium magnetometer to archaeology, a team led by Dr. Froelich G. Rainey, director of the University Museum of the University of Pennsylvania, in collaboration with the Lerici Foundation, Rome, was able to locate these buried remains.

The magnetometer, used successfully since 1960 in the U.S. space program, can detect changes of one part in ten million of the earth's magnetic field.

By noting such slight variations in the earth's magnetic field, it can detect anomalies such as walls, foundations of buildings, pottery kilns and other remains of ancient occupation because their magnetic intensity varies from that of the surrounding soils.

Unlike the electronic, sonic and other detection instruments used earlier, the magnetometer permits location and mapping of ruins with great speed and accuracy.

• Science News Letter, 86:358 December 5, 1964

## MEDICINE

# Artery Hardening Cure?

➤ PECTIN, a substance used in making fruit jellies firm, shows promise as a cure for the type of artery hardening called atherosclerosis.

In atherosclerosis, the inner layer of the artery wall is made thick and irregular by deposits of a fatty substance such as cholesterol. The deposits fill up the artery, decreasing the internal space through which the blood passes.

A group of scientists at Rutgers, The State University, New Brunswick, N.J., is so encouraged with results from their experiments with chickens that women students are now undergoing hospital tests to show the effect of pectin on cholesterol and other fats in their blood.

"What we hope to do," Dr. Paul Griminger told SCIENCE SERVICE, "is have work continue on older persons who have atherosclerosis. Preliminary work on older people, using large amounts of pectin, resulted in diarrhea, but smaller amounts could be more successful."

The experiments with humans will take from five to ten years, Dr. Griminger pointed out.

"We will have to wait to see how long

the patients live, which means long-range tests," he said.

In their work with fowls, reported in Science, 146:1063, 1964, the researchers used two groups of two-year-old cockerels with 30 birds in each group. The fowls were susceptible to atherosclerosis.

The first group got pectin with their corn-soybean ration, containing 15% protein. The second group had the same rations except for the pectin, receiving instead a non-nutritive fiber.

The pectin-fed birds lost three times as much lipid and almost twice as much cholesterol per gram of excreta as did the control birds. The control birds gained almost three times as much weight as did the pectin-fed birds, indicating that the pectin reduced absorption of nutrients.

The Rutgers investigation was headed by Dr. Hans Fisher, who worked with Dr. Griminger and with Dr. Harold S. Weiss, all of the department of animal sciences. Also reporting was Dr. W. G. Siller of the Poultry Research Center, Edinburgh, Scotland.

• Science News Letter, 86:358 December 5, 1964