

OCEANOGRAPHY

# The Past Under the Sea

► SCIENTISTS DRESSED as frog-men are learning about California's archaeological past from the bottom of the Pacific.

Using self-contained underwater breathing apparatus, such as an aqua-lung, they have recovered Indian stone mortars, pestles, metates and net weights at points all along the coast. Some artifacts have been found in water 65 feet or deeper and one-half mile off shore.

How did the relics get there? No one knows for certain, but it is thought that sea level has changed enough through the years to cover what used to be beach and low cliff dwelling sites.

This is only one of the many uses scientists are finding for the free-diving apparatus, Andreas B. Rechnitzer of the Scripps Institution of Oceanography told the American Association for the Advancement of Science's Pacific Division at its meeting in Pasadena, Calif.

Free-diving has given marine biologists a revolutionary method of specimen collecting, Mr. Rechnitzer said. The old methods, such as trawls, seines, dredges and traps are limited by chance and underwater obstacles. With the free-diving gear, biologists can catch their specimens on the spot with underwater "butterfly nets," sampling bottles, spears and special poisons.

Now that the scientists can go where the fish are, many species once thought rare have become "common," and several new species have been discovered.

Scripps Institution scientists spent thousands of hours underwater on a thorough investigation of giant kelp beds along the California coast. These divers were able to study the plants and animals associated with the seaweed beds under natural conditions in their native habitat, hardly imaginable before the time of the self-contained breathing gear.

Every winter, large storm waves wash away great areas of beach. But in the summer period, the small waves bring the sand back, to complete an annual cycle. Free-divers have swum to the bottom to drive in series of graduated stakes to measure the changes in sand depth through the yearly cycle. They dive periodically now to take readings from the stakes.

These are indications of how marine scientists are using their new-found freedom with the self-contained underwater breathing apparatus. Supplemented with instrument measurements, this type of first-hand underwater observation can provide major contributions to science, Mr. Rechnitzer predicted.

Science News Letter, July 2, 1955

during fiscal year 1954, representing a 13% increase over the last record year, 1953. Of the total planted, 687,338 acres were in private ownership, 73,017 were owned by the federal government and 50,711 by the states and non-federal public agencies.

The greatest proportion of forest and shelterbelt tree planting during the year was devoted to slash pine in the South. Both Georgia and Florida broke the tree planting record in 1954, sowing over 100,000 acres each.

Other states with large plantings were Louisiana, Mississippi, Pennsylvania, South Carolina, Michigan, New York and Alabama.

Arbor Day, which is celebrated throughout the United States and its territories from January to December, was started by J. Sterling North in Nebraska on April 10, 1872. It has now become a movement for stimulating individuals and groups to plant groves of trees as well as single trees.

Science News Letter, July 2, 1955

MEDICINE

## Artificial Pacemaker Saves Dying Patients

► AN ARTIFICIAL pacemaker has rescued 20 of 25 desperately ill or dying persons by starting their hearts to beating again, Drs. Paul M. Zoll, Arthur J. Linenthal, Leona R. Norman, Milton H. Paul and William Gibson, of Beth Israel Hospital and Harvard Medical School, Boston, reported at the meeting of the American Medical Association in Atlantic City, N. J.

The artificial pacemaker is a 13-pound portable apparatus that stimulates the heart by an electric current across the chest.

The patients treated suffered heart standstill from attacks of Stokes-Adams disease. In these attacks changes or interruptions in the heart beat stop circulation to the brain. Dizziness, prolonged unconsciousness, convulsions and death may result from such attacks, which sometimes seem like attacks of epilepsy.

Science News Letter, July 2, 1955

GENERAL SCIENCE

# Science Youth Movement

► BY AROUSING the interest and ability of students still in high school, America can recapture from Soviet Russia leadership in production of scientific and technological manpower, Watson Davis, director of SCIENCE SERVICE, told the American Society for Engineering Education meeting in University Park, Pa.

Greater numbers of engineers and technicians are reported being produced by the forced educational system of Russia than by America's democratic system of college education, Mr. Davis warned.

"Without resorting to the methods that we are confident will eventually ruin the fruitfulness of Soviet technology," Mr. Davis said, "America must increase the flow of its talented youth into the fields of mathematics, physical and other sciences and engineering so necessary to our future.

"Experience has shown that the place to begin is as early in the high school as interest can be captured and implemented. The science club and the science fair are prime devices for doing this."

Youth must have experience in science and technology, Mr. Davis advised. By doing projects or experiments of their own that can be shown to their fellow students, parents and friends, and then exhibited in science fairs, young people acquire the in-

centive to explore and understand science and technology.

There are 15,000 science clubs in Science Clubs of America and that means students in most of the high schools can have science as a hobby, Mr. Davis explained. In about a hundred localities there are area science fairs that display each spring hundreds of science exhibits. Some 50,000 exhibits and projects are made each year.

The Seventh National Science Fair conducted by SCIENCE SERVICE, to be held in Oklahoma City, Okla., May 10-12, 1956, will be composed of about 190 winning exhibits from science fairs in all parts of the nation.

Science News Letter, July 2, 1955

FORESTRY

## U. S. Tree Planting Reaches All-Time High

► MORE TREES, approximately 811,000,000 of them, were planted in the United States between July 1, 1953, and June 30, 1954, than at any previous time in the nation's history.

Announcement of the all-time high record was made by the U. S. Department of Agriculture in observance of Arbor Day.

A total of 811,066 acres was planted

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