30,000 acres.

On the southern side of the mountain divide the power stations will tap flow between reservoirs to provide electricity for industrial expansion on the island.

Puerto Rico began its program of power development in 1940 to attract industry from the United States and boost employment of its own people. The huge Caonillas Dam was completed in 1948, bringing to 18 the total of the island's hydro-electric plants. These plants supply nearly all the island's power.

Science News Letter, July 22, 1950

AGRICULTURE

Vanilla May Soon Come From Cultivated Plants

➤ THE flavoring for vanilla ice cream may soon be coming from cultivated hybrid vanilla plants from American soil in Puerto Rico instead of from wild plants in Mexico.

The first hybrid seedlings of a vanilla plant which may resist a root-rot prevalent in Puerto Rico have been produced by Dr. Lewis Knudson, head of the Department of Botany at Cornell University, in Ithaca. Dr. Knudson worked with seeds produced at the Federal Experiment Station in Puerto Rico which wishes to establish a vanilla industry to aid the territory's economy.

The vanilla plant is an orchid. No one was able to produce the plant from seeds until the 1930's. No hybrid seedlings had ever been produced. Starting in 1938, Dr. Knudson had to work out a method of germinating the seeds for himself. No hybrid plant could have been produced without discovering a workable method of germinating the hybrid seeds.

After many years of experiments, Dr. Knudson discovered that vanilla seeds would not germinate with the use of methods for germinating other orchid seeds. He found that, in addition to keeping the seeds in the proper nutrient, they had to be maintained at higher temperatures than usual for a longer period of incubation.

Once Dr. Knudson developed his method of germination, he tried it on seeds of hybrid plants produced at the Federal Experiment Station in Puerto Rico. Four years later he succeeded in producing seedlings from hybrid seeds. This was the first time hybrid seedlings of the vanilla plant had been produced.

Science News Letter, July 22, 1950

ANATOMY-PHYSICS

Must Understand Ear to Know Why Hearing Is Lost

➤ IS THE human ear a microphone for the brain, sending nerve messages of all it hears to the brain? Or does the ear pick out the different sounds like a piano operating in reverse, telegraphing to the brain when each key is sounded?

Questions such as these are very important for understanding the reason for hearing loss, report Dr. Hallowell Davis, Dr. S. R. Silverman and D. R. McAuliff of the Central Institute for the Deaf, St. Louis. Experiments showing that the ear-brain team operates on the telegraphic system rather than the microphone system were discussed by them at the meeting of the Acoustical Society of America in State College, Pa.

A high-pitched squeak was made shorter and shorter by electronic means until the sound wave made just a few wiggles from the beginning to the end of the squeak. It then sounded like a metallic click. When the short squeaks were sent out one after the other at the same rate as the vibrations corresponding to low C on the musical scale, listeners said they heard a "buzz," or "rough metallic sound."

No listener, even when encouraged, was able to hear a low C, in spite of the fact that each click was sending a nerve message to the brain and doing so at a rate corresponding to low C.

The experimenters interpret this to mean that the brain cannot use the ear as a microphone. Instead the ear seems to separate out the different tones, and each tone is signalled separately to the brain. This explains how the sound was heard like just a lot of high pitched squeaks, making rough metallic sounds, not a low-pitched hum.

Science News Letter, July 22, 1950

ICHTHYOLOGY

Plankton, Fish Food, May Become Human Food

➤ PLANKTON, food of the fishes of the sea and a possible future substitute for human food, will be studied from a research ship in the Caribbean-Gulf of Mexico area, it was announced in Washington.

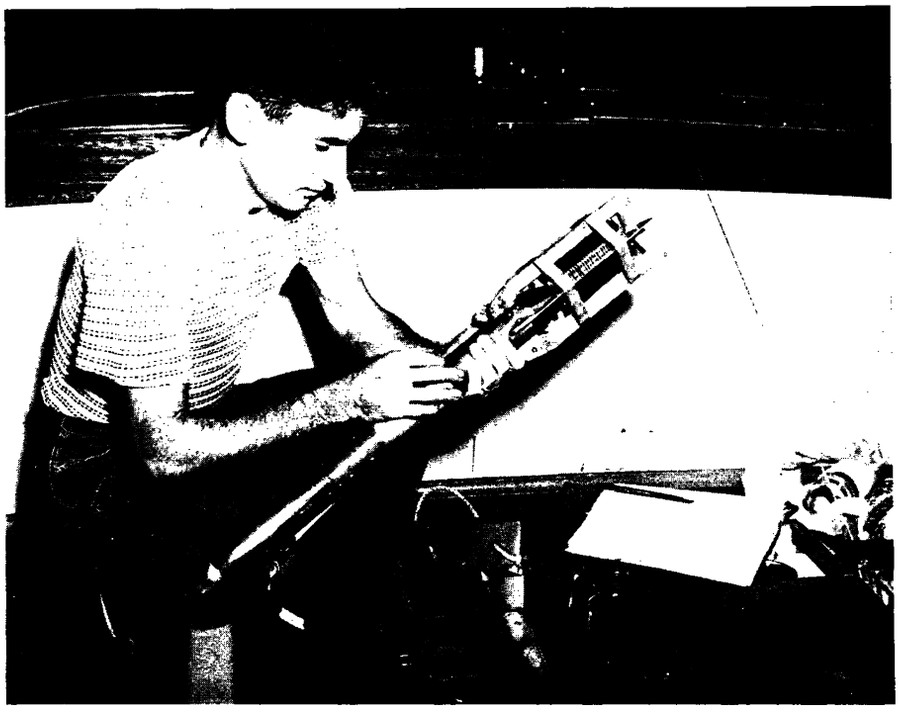
The research, sponsored jointly by the University of Miami and the National Geographic Society, will include regular seinings of the area and simultaneous observations of water and light conditions, temperatures and other factors.

Plankton are minute organisms, in both plant and animal form, which drift with the currents. The animal form, zooplankton, feeds on the plant form or phytoplankton. Sea life, from the smallest fish to species of whales, depends on these organisms for food.

The project will be headed by Dr. F. G. Walton Smith, director of the Marine Laboratory at the University of Miami. Associate director will be Dr. Hilary B. Moore, also of the University of Miami.

The scientists will try to find out how masses of plankton materialize, their relationship to fish life and their possible relationship to climate changes.

Science News Letter, July 22, 1950



IT'S A BATHYTHERMOGRAPH!—This mechanism will help to disclose some of the secrets of the ocean's drifting "meadows," populated by minute marine creatures known as plankton. Everett C. Jones, one of the research team, is shown adjusting the educated gadget, which measures ocean depth and temperature.