

earth and environment notes

METEOROLOGY

Cobb Seamount gets giant buoy

A 180-foot research buoy, most of its length under water, has been installed atop the Cobb Seamount, believed to be the shallowest spot in the northeastern Pacific outside of the Gulf of Alaska. Scientists at Oregon State University in Corvallis hope that the buoy, called Totem II, will be the forerunner of an advance forecasting network for both oceanographic data and northwestern U.S. weather.

Cobb Seamount, about 280 miles from the Washington coast, was selected because most Pacific Northwest weather passes over it on the way east. This month, oceanographers are instrumenting the buoy's 62 visible feet with wind speed, barometric and temperature sensors.

AGRONOMY

Small droplets save pesticide

Effective crop spraying may be possible with as little as two percent of the presently used amounts of pesticide, by eliminating the large droplets from aerosol sprays, reports Dr. Chester M. Himel of the University of Georgia at Athens.

By mixing fluorescent tracer particles with pesticides, Dr. Himel has been able to measure the number and size of droplets hitting individual insects. The usual aerosol, he says, contains drops of from one to 500 microns (millionths of a meter) in diameter. Most of the spray volume is expended in the larger droplets, but only the small ones get through the foliage to kill the insects.

Dr. Himel is now working to design an aerosol that concentrates most of the pesticide in droplets of 50 microns or smaller. "Only five percent of the amount now used, if properly applied, would do a vastly better job," he says, adding that as little as two percent may be effective.

The entomologist has largely been working with crop pests such as the boll weevil, bollworm and cabbage looper, but Dr. Arthur D. Moore of the U.S. Forest Service experiment station in Berkeley, Calif., has gotten similar results with the spruce budworm.

AGRICULTURE

Missouri River basin computed

The agricultural potential of the entire Missouri River Basin by the years 1980, 2000 and 2020 is the subject of a computer study being done for the U.S. Department of Agriculture.

The elaborate program (with more than 17,000 variables) is designed to compare the advantages and costs of different possible irrigation, drainage and flood control systems in the 285-million-acre basin.

Besides comparing the costs of producing various crops on existing arable land with those on land where the water resources are still to be developed, the study is evaluating what crops should be planted in which areas to produce the largest yield. Being conducted by McDonnell Automation Co. in St. Louis, the study covers crop

production under potential conditions ranging from 14 inches of rainfall to 15 feet of snow per year, temperatures from minus 30 degrees F. to plus 110, and growing seasons ranging from 29 to 190 days.

HYDROLOGY

Water treasure buried under Long Island

Salt water is intruding into Long Island's ground water reservoir because of local overdevelopment; care must be exercised to prevent further pollution of the huge ground water reservoir with ocean water as well as with domestic and industrial waste. That is the gist of a cooperative report by the U.S. Geological Survey and the New York State Conservation Department.

The agencies also find that the water-bearing rocks under Long Island contain about 60 trillion gallons of water—enough to cover all of New York State to a depth of six feet. However, because of physical limitations, much of this supply cannot be recovered.

Copies of the report, "An Atlas of Long Island's Water Resources," are available free from the Geological Survey office in Mineola, N.Y.

PUBLIC HEALTH

U.S. divided into air control regions

The conterminous United States is about to be divided into 32 air quality control regions, with Washington, D.C., New York and Chicago being so designated by summer's end.

The Air Quality Act of 1967 provides a comprehensive plan for controlling air pollution on a regional basis—a plan for translating technical knowledge into political action.

Designation of regions is a fundamental step leading toward action by state governments, which will be responsible for adopting and enforcing standards to control air pollution.

OCEANOGRAPHY

Aleutian sea channel mapped

A vast channel in the sea floor, believed to have once connected the North American continent with the Aleutian Abyssal Plain, an area about one-half to two-thirds the size of Alaska some three miles below the surface of the North Pacific, is being charted by U.S. oceanographers.

When the Aleutian trench was formed about 10 million to 15 million years ago, it apparently broke the channel, which once carried mud out to the plain from the mainland. Since then, the only deposits received by the plain have been airborne dust and the remains of living organisms from the sea above it.

The channel is therefore regarded by scientists as a repository of evidence that may shed new light on the geological history of the area. The data gathered this spring on the 175-mile-long known portion of the sea channel, which is about four miles wide and 240 feet deep, are now being evaluated at the Environmental Science Services Administration.

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