

environment notes

LIMNOLOGY

Ontario focus of Great Lakes study

Scientists from the U.S. and Canada are planning an 18-month study of Lake Ontario, to collect information that will be useful in understanding all large lakes.

To begin in 1970, the "international field year for the Great Lakes" has been expanded to a year and a half to include two full summers. "The idea has been kicking around for seven or eight years," says J. P. Bruce, chief of the Great Lakes division of the Canadian Center for Inland Waters, Burlington, Ontario. "We've all been working in various parts of the lakes; if we concentrated on one lake, we could really learn a lot more about what makes a lake tick."

The study, expected to involve hundreds of scientists, will be divided into four parts: meteorology, the flow of surface and ground water to and from the lake, currents and mass water movements in the lake and the sources of lake energy.

Lake Ontario was selected, according to William J. Drescher, research hydrologist for the U.S. Geological Survey and chairman of the U.S. delegation to the field year steering committee, because Erie is too shallow, Superior has too short a study season, and Huron and Michigan (considered by hydrologists as a single lake because a strait rather than a river connects them) were rejected because Lake Michigan lies wholly within the United States.

INSTRUMENTATION

New system checks out Sealab site

An elaborate new undersea data-gathering system has been used for the first time by scientists checking out the area in which aquanauts will live, in Sealab III, for as long as 12 days at a time, 600 feet below the surface off the coast of California.

The instrumentation, called the Bottom Environmental Sensing System, measures visibility, sediments, currents and temperatures, and takes photographs of the bottom.

A. R. Mooney and Robert L. Oser of the Naval Oceanographic Office have used the system to gather data that will be compared with findings from the Sealab tests, which begin in October. The sea bottom, they say, is predominantly sand at the sites sampled, and alternately smooth and flat or steep and boulder-strewn. The minimum temperature is about 44 degrees F., but that occurs at a site some 565 feet below Sealab III's planned depth. Currents seldom exceed 0.2 knots, or 0.23 miles per hour.

POLLUTION CONTROL

Bubbles to keep water clean

A technique that began as a way to keep an America's Cup yacht free of ice during the winter has developed into a major experiment in preventing pollution of bathing areas and revitalizing their water.

Called Project Bubble, the test will involve laying three perforated plastic hoses about 100 feet offshore from Southfield Beach in West Stamford, Conn. Air pumped through the outermost hose will create a curtain of bub-

bles to keep out floating debris, such as oil and jellyfish, while the middle and inner pipes will aerate the water to increase the decomposition of human wastes, and accelerate the purification of the water.

Project Bubble began when technicians noticed that water inside an air curtain that was keeping the yacht "American Eagle" ice-free seemed less polluted than that outside. A similar technique has been used in the Netherlands and Norway to keep sea water out of fresh water canals and fjords.

Project Bubble will be run by American Machine and Foundry Co., under \$400,000 in grants from the National Pollution Control Foundation and the Federal Water Pollution Control Administration.

HYDROLOGY

Pillow eases snow-measuring

A fabric pancake called the Snow Pillow has been developed by the Soil Conservation Service of the U.S. Department of Agriculture to help predict the amount of water available each year in the Western States.

About 75 percent of the total water supply of most western river basins comes from snow melt. In the past, data have been laboriously gathered by surveyors who reached the sites on skis or snowshoes, snowmobiles or aircraft.

The pillow, which can eliminate such excursions, covers as much as 150 square feet. It is pumped full of a water-and-antifreeze mixture and connected to a pressure hose leading to a central monitoring station. The weight of the snow accumulated on the pillow is translated into a radio or telephone signal that appears on an instrument at the station.

MINERALOGY

Source of titanium

Significant deposits of rutile, a mineral containing titanium, have been found in the Front Range near Denver, Colo., by the U.S. Geological Survey.

The layer is up to 100 feet thick, and is partly exposed for at least 7,000 feet horizontally. Rutile is valuable enough that in 1967 the Federal Government raised its maximum financial assistance to private exploration from 50 to 75 percent of its costs.

OCEANOGRAPHY

Sea stations planned two miles down

Manned research laboratories more than two miles below the sea's surface are the goal of Project Atlantis, now planned by the University of Miami's Institute of Marine Sciences and the U.S. Navy.

The first manned station in the Atlantic Technical Logistics and Transport Installation System is expected to be placed at about 1,000 feet, in about four years. "As the program progresses," says Dr. Lloyd V. Stover, senior research scientist of the institute's oceanic engineering division, "we would extend these laboratory stations to depths of 6,000 feet at selected oceanic ridge points, and ultimately down to 12,000 feet."

Besides providing research points, the labs might also serve as monitoring stations to detect submarine activities.

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