Earth and Environment Notes

WATER POLLUTION

Canada Studies Great Lakes

An intensive study of water quality in the Great Lakes has been launched by the Ontario Water Resources Commission. Detailed sampling will be done on Lakes Superior and Huron, with spot observations to be made of Lakes Erie and Ontario as well.

The purpose of the program is to tabulate the quantity, type and effects of industrial, domestic and surface pollution from the province of Ontario which reaches the Great Lakes. The program is being carried out in cooperation with other Canadian and U.S. agencies involved in similar studies as members of the International Joint Commission on the Great Lakes.

One important sampling technique of the program is the use of carbon adsorption filters at selected locations to pick up complex organic trace elements in the water. The material is analyzed by infrared spectrophotometry, and the data are stored in computers for later retrieval and evaluation.

METAL PROSPECTING

Subsea Gold Sought Off Oregon

Heavy metals such as gold, silver, mercury and platinum are being sought along the continental shelf off the Oregon Coast, an area that has already been a target for oil prospectors.

Gold and platinum were discovered in black sand on Oregon beaches in the 1850's and were extensively mined during the Gold Rush days. Scientists at the U.S. Geological Survey are sufficiently convinced that similar black sands may exist on the adjacent continental shelf that they have given Oregon State University a $77,500 research contract to find out for sure.

Oregon's shelf is relatively narrow—8 to 10 miles—but preliminary studies last summer indicated that there is considerable potential for mineral strikes. Armed with magnetometers to help outline black sand deposits on the sea bottom, the scientists will take rock and sediment samples, while using closed-circuit television to analyze the water movements that cause the black sands to concentrate.

STRUCTURAL ENGINEERING

Builders Study Permafrost

A team of scientists is trying to push the frontiers of human habitation farther north by studying the effects of permafrost.

Researchers from Canada's National Research Council are investigating what permafrost does to various terrain features including elevations, vegetation, drainage and soil texture. Many of the more difficult problems of building in the north are due to the fact that permafrost is in a delicate thermal equilibrium which, if disturbed, results in thawing and severe ground settling.

AIR POLLUTION

Antismog Devices Inadequate

Present anti-pollution systems on automobiles are not nearly efficient enough, at least for California's smog problems, a scientist there believes. Better systems are needed, and even so, development of smog-resistant crop strains may be necessary to handle the problem, says Dr. E. F. Darley, a plant pathologist at the University of California Air Pollution Center at Riverside.

California should have only 250,000 automobiles according to Dr. Darley, because above that number more smog is produced than natural dispersion can handle. In reality, California has some 8 million passenger cars, and smog damages run to an estimated $130 million a year.

WATER RESOURCES

Oceans Polluted, Too

Water pollution is not confined to rivers and lakes. Dr. Harve J. Carlson of the National Science Foundation has warned Congress that man is polluting the oceans so fast that it has become a major problem.

He told a House appropriations subcommittee that the problem exists "because of the enormous amount of human and industrial wastes produced, and because of the thermal pollution resulting from use of reactors in or near the oceans."

Dr. Carlson, who is also a member of the Interagency Committee on Oceanography, said that the U.S. will spend $228 million this year in urgent exploration of the sea.

GEOTECHNOLOGY

Soviets Build Geothermal Plants

The first of a projected grid of geothermal power stations on the Kamchatka peninsula has begun operation, according to the Novosti Press Agency.

While the new station, first in the U.S.S.R., produces only 5,000 kilowatts, it will be upgraded to a 15,000 kilowatt plant within five years, the Russians report.

A 25,000 kilowatt station is planned for a location near Petropavlovsk-Kamchatsky in the southeastern part of the peninsula. Eventually, Novosti reports, engineers plan to depend entirely on the abundant geothermal resources of the peninsula for electric power generation.

METEOROLOGY

Forecasting Forecasts

Large-scale weather may be predictable only about five days in advance, according to the president of the Royal Meteorological Society. The limits of predictability of small-scale events may be measured in hours, he feels.

All this, says Dr. G. D. Robinson, may mean that scientists and nations should hesitate longer before plunging into programs such as the Global Atmospheric Research Project which is based on the assumption that 14-day forecasts are possible.

A report of Dr. Robinson's Presidential Address to the Society was printed in NATURE.