

# Earth and Environment Notes

## GEOLOGY

### **Soviet Dogs Sniff Out Iron Ore**

Soviet geologists have successfully trained dogs to sniff out underground iron ore deposits, according to a report from Novosti Press Agency.

The idea was suggested by a dog trainer who had used dogs to look for buried mines in World War II. He said his dogs could detect the mines' iron shells by smell from a distance of four meters when the mines were buried from a half to two meters deep.

An experiment performed at the Moscow Institute of Higher Nervous Activity and Neurophysiology has apparently confirmed the trainer's experience.

Four dogs, Novosti reported, had no difficulty in locating ore buried up to two meters deep.

A spokesman for the U.S. Geological Survey said the use of dogs probably would have little value in practical applications. Conventional methods of locating iron ore, he said, have been quite successful.

Presently mined ore bodies range in depth below the surface from hundreds of feet to outcroppings on the surface itself, he said.

## GEOLOGY

### **Deep Drilling in Nova Scotia**

What may be the deepest hole ever drilled in the eastern continental shelf of North America will be started this summer on Sable Island, 190 miles east of Halifax, Nova Scotia.

It will be a 15,000 foot deep exploratory well for oil and gas put down for Mobil Oil Canada Ltd.

## GEOLOGY

### **Gold Mining Lags**

Only about two percent of the gold known to exist in ore bodies in the United States can be mined economically with current techniques, according to a report from the Bureau of Mines.

Known gold resources total more than 400 million ounces, but only about 9 million ounces can be produced for less than the established price of \$35 an ounce.

All 9 million ounces are in deposits in South Dakota and Nevada, the Bureau notes.

About 40 percent of the present U.S. gold supply now comes from base metal mining operations that recover gold as a by-product. Total production now is less than a third of the domestic demand for gold in the arts and industrial applications.

## GEOLOGY

### **Drilling Yields Molten Lava**

Samples of molten lava have been obtained from Kilauea Iki lava lake on the island of Hawaii by drilling through the 87-foot-thick solidified crust on the lake.

The samples will be used in studies of mineral crystal development in cooling lava, according to a geologist

from the U.S. Geological Survey which did the drilling.

This is the first time molten lava has been sampled through such a thick crust, he said. The lava cooled and solidified into black, glassy rock while being brought to the surface.

Survey scientists plan to use the drill hole to probe temperature changes in the lava and the compositions of volcanic gases.

## ICTHYOLOGY

### **Dye-Marking Fish**

A method of dyeing adult fish a blue-black color that is passed on to their young is described in the April 1 NATURE.

Female brown trout were fed dry hatchery pellets mixed with a small quantity of dry Sudan black powder. Within two weeks the fish took on a blue-black appearance, according to the report by T. B. Bagenal of The Ferry House, Ambleside, Westmoreland, England.

The trout yielded blue eggs which hatched normally into blue fry. The color persisted to a useful extent for more than six weeks after the fry began feeding. It apparently had no effect on the young fish, the report notes, other than to color them.

Such a dyeing technique could be used to identify fish used in experiments such as population studies, Bagenal writes.

## OCEANOGRAPHY

### **Grand Canyon Under the Sea**

The world's deepest known submarine canyon has been discovered in the southwestern Australian continental shelf.

It is 20 miles wide and 6,000 feet deep according to its discoverers, a research party from the Horace Lamb Center for Oceanographic Research at Flinders University, Adelaide. The group is headed by Dr. C. C. Von Der Borch, a research fellow at the center.

Formerly the deepest known canyon, measured from its rim to its bottom, was the 5,000-foot-deep Monterey Canyon off the southern California coast.

The new canyon is located about 25 miles south of the Western Australian coast at Esperance.

## MARINE TECHNOLOGY

### **Soviets Building Undersea Robot**

A television equipped robot geologist is being developed in the Soviet Union to probe the ocean bottom at depths of from four to six kilometers.

It will carry a manipulator to pick up objects sighted by the TV camera. At first, the robot will be controlled electronically through a specially made cable.

Eventually, engineers of the Marine Electronics Laboratory of the Institute of Oceanology hope to build a robot controlled entirely by ultrasonic signals transmitted through the water, doing away with the cable.

A report on their work was printed in the February 1967 EKONOMICHESKAYA GAZETA.