Arctic Current Watched

The ice currents in five million square miles of frozen Arctic seas are being tested by scientists working from drifting ice stations

➤ THE ICY CURRENT that slowly revolves clockwise around the North Pole is being constantly measured and tested by Russian and American scientists at drifting ice stations.

The Russians are more active than anyone else in Arctic research, said Dr. Maxwell E. Britton, head of the Arctic Program, Office of Naval Research. Other interested countries include Canada, Denmark, Norway and Greenland.

Scientists of the U.S. Navy and other research organizations work from aircraft, small boats and ice breakers to survey the five million square miles of frozen Arctic seas, he told the meeting of the Washington Academy of Sciences in College Park, Md. The largest drifting ice station maintained by the Navy now is about 250 miles due north of Point Barrow, in northern Alaska. As the iceberg drifts, research continues on and under the ice, under water and in the atmosphere.

There is a flow of seawater into the Arctic regions through the Bering Straits, and a general outward flow down past Greenland. The current drifts around the polar area at highly variable speeds—from one or two nautical miles a day to as high as 30.

Unlike Antarctica, which is a large land mass ringed by oceans, the Arctic is an ocean ringed by land. In winter, ice forms over most of the North Polar Basin, covering an expanse of 1,900 to 2,500 miles. This is pack ice, always in motion and drifting with the winds and current.

On the average it is about seven feet thick, Dr. Britton said, but in some places ice blocks have collided and immense pressures have forced up ridges of ice over 100 feet thick. With the moderating presence of the sea just under this ice pack, the Arctic is much milder and less hostile to life than the Antarctic. In the spring, the pack ice begins to melt, and freshwater lakes spread out across its surface.

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Tudor Engineering Company

DISAPPEARING DAM—The concrete arch dam on the left stood 310 feet high, but it will soon be drowned under 170 feet of water as the Merced River in California rises behind the New Exchequer dam that is almost 500 feet high. The old dam, built 34 years ago and once considered a large structure, could no longer collect enough water for the irrigation needs of the farmers in the San Joaquin Valley. The Tudor Engineering Company is supervising the construction of the new dam it designed.

TECHNOLOGY

Metal Scraps in Oil Tell Aircraft Engine Wear

➤ A DEVICE for analyzing submicroscopic metal particles in oil that will tell when gas turbine engines show dangerous wear is being developed.

The spectrometric analyzer can perform the test on the spot and speed the application of the information to the understanding of the malfunction of the engine.

The new device, developed by Baird-Atomic, Inc., Cambridge, Mass., for the U.S. Air Force, is about to come out of the laboratory and move into the maintenance hangar.

Oil samples are extracted periodically from the engine oil system and examined for metallic contamination by spectrometric analysis. The oil specimen is vaporized by heat, and its light output separated by wavelengths. Different metals show up in different colors in the spectrum.

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GEOLOGY

Hot Flowing Mud Is Terror of Volcano

➤ HOT BOILING MUD flooding down from the volcano Mt. Kelud buried nine Javanese villages, killing and roasting at least 39 people and innumerable livestock.

Mt. Kelud on the eastern part of Java is one of the most dangerous mud-flowing volcanoes in the world, said Dr. Robert L. Smith of the U.S. Geological Survey. Because of the crater lake near its summit, it has had a long history of devastating mud flows.

These floods are caused when large amounts of ash and debris are saturated by rains or volcanic waters which are boiling hot from the active volcano. These rivers of boiling mud wash down the slopes of the mountain at speeds as high as 60 miles an hour, engulfing everything in their path, burying villages and suffocating life.

Scientists have attempted to alleviate the power of these flows by siphoning off the waters of the crater lake, Dr. Smith said. By keeping the lake waters at a relatively low level, the scientists hoped to lessen the magnitude of the flows. The results of these experiments, carried on at one time by the Dutch, have not been defined.

The last eruption of the 5,678-foot high Mt. Kelud occurred in 1951. More than 26 mud flows have slipped down the volcano slopes since records were started in the year 1000.

Mt. Kelud is located on one of the major volcano belts of the world that stretches from the West Indies eastward through the Mediterranean Sea to the East Indies.

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