

OCEANOGRAPHY

Viewing the Mediterranean floor

Britain's National Institute of Oceanography last year sea-tested a sideways-looking long-range sonar designed to obtain geological information to a range of 10 miles in water 6,000 meters deep (SN: 9/13, p. 211). The sonar unit, named Gloria, is towed at a depth of about 70 meters.

Gloria has now provided new information about the deep Mediterranean floor. In a report prepared for DEEP-SEA RESEARCH, three institute scientists, R. H. Belderson, N. H. Kenyon and A. H. Stride, describe findings of sharp textural variations along the continental slope off Algeria, sediment slumps in an undersea canyon off Barcelona and a striking succession of five or more sharply defined linear features off southeastern Majorca and off eastern Minorca.

The linear features could be outcrops of rock units, slumps, faults, minor folds or benches and cliffs cut by the sea.

The scientists feel the last explanation is the most likely: The features are benches cut at the edge of the sea during pauses in the general sinking of the land from a former much higher level. The deepest lying features found so far suggest a subsidence of part of a ridge of about 1,400 meters.

GEOLOGY

Sensing sinkholes from the air

Sudden land collapse is a troublesome geologic hazard in many parts of the United States. The phenomenon is related to the existence of cavernous limestone beneath the surface. As much as 15 percent of the conterminous United States is underlaid by limestone, part of which may be sinkhole-prone. Subsidence near Bartow, Lakeland and Winter Haven, Fla., has destroyed homes, ruined building foundations and created problems in highway construction and maintenance.

Encouraging research is now reported in the use of airborne remote sensing devices to detect areas in that region prone to land collapse. Imagery obtained from aircraft reveals thermal and apparent moisture-stressed vegetation patterns that may be associated with caverns subject to collapse, report A. E. Coker of the U.S. Geological Survey's Tampa, Fla., office, and Robert Marshall and Norma Thompson, computer specialists at the University of Michigan. Known areas of active subsidence show similar response to their method of imagery.

The technique uses narrow spectral bands in visible, solar-infrared and thermal-infrared radiation. The data are then processed by computer.

GLACIOLOGY

Manhattan returns to Arctic

The icebreaker-tanker Manhattan set out for the Arctic on April 3 to obtain more data on ship performance and power requirements when operating in ice of various thicknesses. Project officials are not satisfied they have all the data needed to determine power re-

quirements in new winter ice, which was not available last fall when the ship went through the Northwest Passage (SN: 9/27, p. 265).

The new tests will be conducted in Baffin Bay and Parry Channel. There are no plans to go through the Northwest Passage again.

Last year's voyage showed that it is operationally feasible for a commercial vessel to transit the passage. But Humble Oil Co. officials say they still do not know if such an operation is economically feasible.

METEOROLOGY

Pacific weather net

The first Southwest Pacific plan for an interlocking meteorological data exchange network has been completed in Sydney. The plan schedules completion of a 24-hour telecommunications link between all countries in the region by late 1973.

The link will ultimately plug the innumerable gaps in plotted weather patterns around Australia. The gaps exist not because observations are not made but because reporting procedures are not standardized and communications between countries are poor. Delegates from nine countries, including the United States, worked on the plan. It is to go to a conference in Kuala Lumpur next August for ratification.

The plan outlines data transmission procedures signed to overcome language barriers and ensure a regular flow of information between nations and the World Meteorological Center in Melbourne. It also sets down for the first time standards of telecommunication circuits to be established by each member country—mainly direct point-to-point relays. Member countries are required to relay data within strict time limits.

GEOPHYSICS

Drift in geomagnetic intensity

Geomagnetic mapping and direct measurements by geophysical observatories indicate that the earth's magnetic field has drifted 120 degrees westward in 500 years (SN: 2/28, p. 224).

A series of magnetic measurements on archaeological materials such as pottery in Arizona and Mexico has now been completed. Comparison with earlier European data confirms the westward drift of geomagnetic intensity, amounting to 0.24 degrees a year.

Moreover, a close relationship is shown between magnetic intensity fluctuations and previously reported changes in the production rate of radiocarbon. This should make it possible to estimate any influences of the earth's magnetic field in the past 40,000 years by measuring magnetic intensities in sediments whose ages can be determined by the radiocarbon method.

In addition, the experiments, say Drs. V. Bucha of the Czechoslovak Academy of Science, R. E. Taylor and Rainer Berger of the University of California at Los Angeles and E. W. Haury of the University of Arizona in the April 3 SCIENCE, "should go a long way toward clarifying the relative effectiveness of the magnetic behavior of the earth and sun and their influence on the production rate of radiocarbon."