Earth and Environment Notes

HYDROLOGY

Unusual Island Currents Studied

An elaborate study of the unusual movement of surface water around islands has been started by scientists at the Scripps Institution of Oceanography, La Jolla, Calif.

Under the direction of Scripps oceanographer Dr. William G. Van Dorn, and aided by a National Science Foundation grant, the research team is trying to relate the irregular circulation systems observed around islands to three theories:

- Subsurface waves could combine with the piling up of water on the upstream side of an island to produce vertical mixing that would provide nutrients to life in areas where it otherwise would not fluorish.
- Surface evaporation in partly closed atolls where there is little rainfall could leave the surface water saltier, and hence denser, than that below it, causing vertical mixing.
- Strong variable currents reported by divers around islands may be related to whirlpools forming in the island's wake.

POLICY PLANNING

Academies Form Environment Board

An Environmental Studies Board, to coordinate activities in the field and work with the Federal Government on related problems, has been set up by the National Academy of Sciences and the National Academy of Engineering.

One of the seven-man Board's major functions will be to provide a center for efforts at reducing or controlling pollution of air, water and land.

Chairman of the Board will be Dr. Harold Gershinowitz, former president of the Shell Development Co. and research coordinator and chairman of the research council of Royal Dutch/Shell.

HYDROGRAPHICS

Mother Ship and Brood

Schools of small, unmanned, radio-controlled vessels directed from mother ships are being developed by the U. S. Coast and Geodetic Survey to help with the vast task of charting the continental shelf.

Depth soundings and other data from up to 20 of the remote launches would be telemetered to the mother ship, along with pinpoint information on the launch's location. The present test system has a range of about two miles; project engineers hope to achieve accurate control at distances of up to 15 miles, with precise soundings obtainable in up to 600 feet of water.

MINERAL RESOURCES

Sulfate Removal Eases Brine Mining

The door to production of useful minerals from Utah's Great Salt Lake has been opened by development of a way to get rid of sulfates in the brine, according to the Bureau of Mines.

The Bureau's method entails precipitating the sulfates with barium which is then recovered and reused. Sodium carbonate and sulfur or sulfuric acid are recovered in sufficient quantities to more than pay for the processing, the Bureau claims.

With the sulfates gone, such simple methods as solar evaporation can be used economically to recover potassium and magnesium salts from the brine.

MARINE TECHNOLOGY

Hydronauts Train in Simulator

Hydronauts—the men who will operate the U.S. Navy's deep submergence vehicles—are being trained in a unique dry-land device that simulates operation of the bathyscaphe Trieste II.

The bathyscaphe, essentially an underwater balloon, is used by the Navy to carry out tasks that involve lifting more weight than presently available research submarines can handle. It is slow and clumsy, but relatively safe and reliable.

So far, the Navy has qualified only 10 hydronauts in the Sperry Rand Corporation's simulator and on actual dives. Eleven more are now training. The hydronauts will eventually operate the Navy's Deep Submergence Rescue Vehicles and other small, deep-diving submarines.

WEATHER MODIFICATION

The Law and the Weather

The possible legal snarls of modifying the weather are being studied for the Interior Department by the University of Arizona College of Law in Tucson.

The small ($13,400) but "precedent-setting" contract resulted from the stepped-up pace of weather research, according to Secretary of the Interior Stewart Udall. "As we advance in controlling the weather," he said, "we likewise become more deeply involved in local, state, regional, national and even international aspects of the law. We must know what laws now really govern the rivers of the skies, how they might be applied and interpreted, and what new laws might be needed."

OCEANOGRAPHY

Gulf Stream Research Ideas Invited

Suggestions for research to be conducted on the six-week underwater excursion of the PX-15 submarine have been requested from U.S. oceanographers.

The submarine, brainchild of Swiss scientist Jacques Piccard, will drift 1,500 miles at depths of from 300 to 2,000 feet in the Gulf Stream while six scientists aboard observe surrounding waters.

The 48-foot craft is presently scheduled to begin its drifting voyage in May or June, 1968.

Research proposals should be sent to J. Edward Spike or Fred Bodnarchuk, mission coordinators, at Grumman Aircraft Engineering Corporation, Bethpage, New York. The deadline is June first.