

Earth and Environment

MARINE TECHNOLOGY

Meteorological Buoy Tested

A forerunner of a worldwide weather and oceanographic buoy system that will report via satellite has begun a 30-day test at sea near Bermuda.

The "Sea-Robin" data buoy was set out on a 10,000 foot moor about 11 miles off the coast of Saint David's Island by the General Electric Company's Missile and Space Division, builders of the buoy.

For the test, command and control of the buoy is being conducted from a portable ground station on the island. In phase two tests beginning about April 1, GE engineers plan to check out the satellite-oriented communications system that would be on later, operational buoys.

PALEO-GEOLOGY

Evidence of Precambrian Life

From deep in the gold mines of South Africa's Orange Free State has come evidence that there was some form of biologic activity on earth at least 2.15 billion years ago.

Polymerized hydrocarbon "chemofossils" found in the gold ores were studied by Jochen Hoefs and Manfred Schidlowski of the University of Gottingen, Germany.

Isotopic composition of the hydrocarbons, they report in the March 3 Science, falls into the range of sedimentary organic carbon. Thus, it is probable that they were originally part of a rich bacterial and algal life in the Witwatersrand basin.

Since the rock layers from which they come have been dated to about 2.15 billion years ago, it seems likely that photosynthesis existed on earth before then, the authors suggest.

AIR POLLUTION

Sulfur and Fly Ash Catching

An economically feasible system for removal of sulfur compounds and fly ash from exhaust gases of coal-burning electric power stations will be developed by Carnegie Institute of Technology under a contract from the Bureau of Mines.

Carnegie will explore a proposed system that entails passing the exhausts horizontally through a bed of slowly falling particles of filtering material.

The trick will be to develop a filter material that will both remove the sulfur compounds at reasonable temperatures and also attract fly ash.

Though recovery of the sulfur for reuse is not an objective, the Bureau says, such an attractive possibility is not being ruled out. The most important criterion is that the final system must be inexpensive.

GEOGRAPHY

New Stereo Mapping System

A new, filter-free stereo viewer for converting aerial photographs to maps that gives greater resolution and

brightness than former methods has been developed by the U. S. Geological Survey.

The StereoImage Alternator (SIA) system uses a rotating cylindrical shutter system to permit a user to view alternately projected stereo pairs of photographs.

The shutters alternately flash left and right hand images onto screens and then into the corresponding eyes of the observer. It eliminates use of polarizing filters of red and blue filters.

J. William Knauf of the Topographic Division Research Center, McLean, Va., developed the system.

AIR POLLUTION

Bacterial Air Filter

An air filter employing specially selected strains of bacteria to eat up smelly gases has been developed by the German Babcock and Wilcox plant in Oberhausen.

The multi-level filter passes polluted air through several beds of substrate on which the bacteria live. The beds are washed by a spray from overhead nozzles, keeping them moist.

A pilot installation has been in operation for a year and a half on a German pig sty, presumably successfully. Suggested uses include processing waste gases from municipal sewage treatment plants.

WATER RESOURCES

Planning Grants Increased

Planning grants to 42 states from the Federal Water Resources Council have been increased by shifting funds not used by other states, according to Stewart L. Udall, Secretary of the Interior.

The purpose of the grants, awarded under the Water Resources Planning Act of 1965, is to encourage increased state planning for development of water and related land resources.

A total of \$1.6 million has been allocated to the states so far, according to Udall. A total of 46 states have applied for funds in the present fiscal year.

GEOLOGY

Geology Research Described

A survey of coal resources in New Mexico, a catalogue of movements in the San Andreas Fault and a report on ejection of pumice from Mount Rainier are all part of the U. S. Geological Survey's annual research report just published.

The 385-page volume sums up research conducted by the Survey during 1966.

It also lists investigations in progress along with the researchers in charge and all organizations cooperating with the Survey in its work.

Results summarized include: earth movements along the San Andreas Fault have totaled up to 20 miles over several million years; the earth's magnetic field has reversed nine times in 3.6 million years; and there is nearly 100 million tons of coal in one New Mexico county.