Technology Review, November 1961

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A NEW RESEARCH SHIP, to be called Atlantis II, is being built for the Woods Hole Oceanographic Institution. It will be a 210-foot Vessel, paid for by the National Science Foundation, and one of the few ships specifically designed and built in this country for oceanography. It will have a bulbous bow containing six glass windows for underwater observations, and four laboratories, including one below decks at the center of least motion for gravity measurements.

Flotation of Micro-Organisms

AN IMPORTANT TECHNIQUE of the mineral and chemical engineer, flotation, may also prove helpful in the future to the biologist and food-processing engineer.

Antoine M. Gaudin, Richards Professor of Mineral Engineering at M.I.T., pointed this out in Denver on September 18 when the Society of Mining Engineers celebrated the 50th anniversary of froth flotation in the United States. Professor Gaudin reported the findings in work done under contract with the U.S. Army Chemical Corps at M.I.T., which indicated that microorganisms could be separated by differential flotation.

In experiments with cultures of escherichia coli-a readily available, hydrophilic, nontoxic organism, which would not float-it was found that by adding salt to the concentration the number of organisms in the tailing from flotation could be reduced to the vanishing point. And in experiments with another microorganism, the researchers found that its spores could be separated from the vegetative cells of the same organism by flotation. They succeeded, too, in floating a contaminant from a mixture of organisms of this type.

Hence, Professor Gaudin suggested, flotation may be helpful in such projects as the treatment of solid to isolate various strains of antibiotic-producing organisms.

Ore pulps are commonly described in terms of the percentage of the pulp that is fine enough to pass through a 200-mesh sieve. The micro-organisms with which Professor Gaudin has been dealing could pass through a 20,000-mesh sieve, and are so light that their setting velocity in a liquid is vanishingly slow. They are, moreover, living, reproducing and dying things, rather than inanimate particles, which makes the striking of a balance of materials very difficult. Nevertheless, the experiments showed, they can be floated from one another, or concentrated in a portion of the aqueous phase, and the operation can be both simple and rapid.

Guidance for Apollo

The National Aeronautics and Space Administration has given M.I.T's Instrumentation Laboratory responsibility for developing the equipment that will guide and navigate this country's first manned spaceship to a landing on the moon and during a return voyage to the earth. The laboratory, a teaching-and-research facility under the Institutes's Department of Aeronautics and Astronautics, will design the first several systems for which NASA will choose a contractor. First-year development costs at M.I.T are estimated at $4,000,000.

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Charles S. Draper, '26, the laboratory's head, often is called the father of inertial guidance. Roger R. Woodbury, '48, and Forrest E. Houston, '48, associate directors, have supervisory responsibility for several of the laboratory's research programs, including the Apollo guidance work. Development of the Apollo guidance-navigation system is expected to take several years and will be supervised by Milton B. Trageser, '51, Ralph R. Ragan, '52, and John W. Hurds.

Lincoln Decennial Lectures

To commemorate its 10th anniversary, Lincoln Laboratory has arranged a series of lectures on "The Age of Electronics" in M.I.T.'s Kresge Auditorium. The speakers will include Professor H. B. G. Casimir, November 15, discussing important pioneers in electronics; Ivan A. Getting, '33, November 28, on radar; and L. V. Berkner, December 11, on communications.

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