

OCEANOGRAPHY

Seanauts Launched

A saucer-shaped deep sea research vehicle with cameras and a mechanical arm attached to the outside is helping oceanographers probe the ocean depths—By Barbara Tufty

► WHILE UNMANNED SATELLITES are flung into outer space, a two-manned saucer is plunging into the inner space of the ocean.

The "Diving Saucer," a deep-sea research vehicle about ten feet in diameter and five feet high, explored for the first time the unknown area of Scripps Canyon, an under-canyon depths took place early this month. shore of California.

The first dive 600 feet into the dark canyon depths took place early this month. A pilot and biologist, lying down to peer through two large Plexiglas windows, thus began a two-week ocean exploration undertaken by the University of California's Scripps Institution of Oceanography, La Jolla.

Other geologists and oceanographers took their turn investigating the marine life, cliffs and floor of the underwater world.

Powered by lead-acid batteries, the Diving Saucer is designed to scan the ocean 1,000 feet below the surface. Two water jets mounted on its sides can be rotated to steer the saucer up, down or to turn it around.

Still and motion picture cameras are mounted on the outside, and a mechanical arm can be manipulated to pick up sea specimens. It can operate under the ocean for more than 24 hours at a stretch.

Built and used by the sea explorer Capt. Jacques-Yves Cousteau, the 7,000-pound saucer

was leased to the Scripps Institution by the undersea division of Westinghouse Electric Corporation.

This saucer is another undersea research submarine which is proving so useful to the growing field of oceanography, explained an officers in the Deep Submergent Systems Review Group of the Department of Defense, Washington, D. C.

These small but mobile submarines are equipped with searchlights, cameras, and arms for close scrutiny of the part of the earth we know little about—the ocean.

Another classification of undersea research vessels includes the larger and more cumbersome bathyscaphs which can withstand higher pressures and descend to much lower depths than its more agile, more fragile surface relation.

The 50-ton, 60-foot long Trieste which located the sunken fragments of the submarine Thresher last September, made a deep sea diving record of 35,800 feet in 1960.

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Salt Found in Lakes Under Everlasting Ice

► DEEP UNDER the ice of Antarctica lie three small lakes which are ten times as salty as the sea.

This concentration of salt is about the same as that found in Utah's Great Salt Lake.

The three salt lakes are located in Victoria Land in Antarctica, south of New Zealand, stated Dr. Ernest E. Angino of the oceanography and meteorology department of Texas A&M University, College Station, Texas.

As a member of the Antarctic research team, Dr. Angino bored through about 14 feet of ice that covers the lakes all year round.

The average annual temperature of the icy wilderness is minus 20 degrees Fahrenheit, but at the bottom of the lakes, volcanic hot springs keep the water as hot as 78 degrees Fahrenheit.

The lake waters, smelling strongly of sulfur, may have originated from volcanic activity, fresh water and old sea water, believes Dr. Angino.

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Vast Treasures Untapped In the Restless Sea

► A MILLION DOLLARS' worth of gold may be suspended in every cubic mile of sea water—along with other treasures of the sea such as diamonds, tin, oil, and valuable chemicals.

Perhaps more precious than all the jewels and minerals, however, is that sweet substance of life—fresh water.

Actually, quantities of gold in the vast sea are so minute and the expense of extracting them so great that trying to pull this metal from the sea is not profitable, as Nobel Prize winner Prof. Fritz Haber of the University of Berlin, discovered in the early 1920's.

Prof. Haber developed the process of nitrogen fixation from the air that allowed the Kaiser's Germany to make explosives without overseas nitrate.

The riches of the sea continue to be discovered, analyzed and recorded, stated Rear Adm. Denys W. Knoll, USN, Commander of the U.S. Naval Oceanographic Office, Washington.

Diamonds are being retrieved from the ocean floor off the west coast of South Africa, he told the Joint Board on Science Education. Large pools of oil lie under deep water beyond the continental shelves extending into the sea; a fortune of tin lies beneath the Gulf of Siam; a pilot plant for converting salt water into precious fresh water is turning out a million gallons a day in San Diego.

To extricate these sea treasures and learn more about the origin of the ocean and its life, America needs to build more serviceable ships with precise equipment and instruments.

But the real need of the Navy and Oceanographic research sections lies in people, he pointed out—people at every level to handle instruments, organize information, direct programs and to think creatively about the vast science of these waters that cover about three quarters of the earth.

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Westinghouse

"DIVING SAUCER"—The "Diving Saucer" deep sea research vehicle is shown in San Diego being prepared for a test dive. The vehicle, capable of diving to 1,000 feet below the surface, was built by undersea explorer Capt. Jacques-Yves Cousteau.