ARCHAEOLOGY

Salvage Ship of 200 B. C.

➤ "SEA DIGGING" is more than the search for clams or pearls, or for a sunken cargo of gold or other such wealth. It is the youngest and most romantic branch of the romantic science, archaeology.

Off the cost of southern France, divers are now digging out of the sea bottom the cargo of a ship that sailed from a port of the east Mediterranean about the turn of the third to the second century before Christ, which stopped later at Naples to take on a load of pottery and Italian wine, and then headed for Marseilles but went down just before reaching port.

Some of the wine jars have their stoppers still in place, but the liquid contents is no longer the wine shipped so many hundreds of years ago. It is sea water.

Although today it seems strange that such a large cargo of wine should be shipped from Italy to France, it was not until a century or so later that Gaul had established its own wine industry, Dr. Lionel S. Casson of New York University reports in *Archaeology* (Winter, 1953).

Like other branches of science, "Sea Digging" has its enthusiastic amateurs. In France, they have formed an organization known as the Club Alpin Sous-Marin. Individual members, and the club as a group, lend their assistance in digging out the scientific treasures of the sea. The club has made over 7,000 dives in the vicinity of Cannes alone.

The first underwater "digs," dating back only to the early part of this century, required the equipment and the money of the French Navy to salvage their archaeological treasures.

It was not until 1943 that the field was opened to scientists and amateurs. It was then that Commandant Jacques-Yves Cousteau, a French naval officer and pioneer in sea digging, perfected an apparatus for free diving without the complicated and expensive air pumps and hoses and gear necessary previously to tend the diver. The Cousteau-Gagnon apparatus consists of one to three bottles of compressed air with a mouthpiece fitted into a harness that the diver wears on his back.

The present dig off Marseilles, the first to be conducted scientifically, is of a ship far older than the others struck earlier. Previous wrecks explored along the coast are of the first century B.C. or later.

Two professional divers are engaged in the digging, aided often by amateur divers. They are permitted to make but two dives a day, and each dive is limited to 20 minutes. Since the wreck is at a depth of 45 meters, about 150 feet, the water is cold and the divers must wear what the French call "Tarzans," skin-tight rubber jackets and breeches. It takes about three minutes to swim down to the wreck, so that allows only 14 minutes of working time. When the weather is bad, all dives are cancelled. Thus the work is going very slowly. It will be many months or years before the work is finished, Dr. Casson estimated.

Science News Letter, March 20, 1954

ASTRONOMY

Tiny Earth Satellites

➤ THE CHANCES are "very good" that there are one or more small satellites between the earth and the moon, but spotting them will be difficult, Dr. G. M. Clemence, director of the Nautical Almanac office of the U. S. Naval Observatory has stated.

Such tiny objects, which could serve as ready-made space platforms, might have made earth-splashing meteorites if they had not been captured by our planet's magnetic field. A telescopic search for the circling moonlets is being made for the armed forces by Drs. Clyde Tombaugh and Lincoln La Paz, director of the Institute of Meteoritics of the University of New Mexico, Albuquerque, N. M.

Speed of the tiny moons would depend upon their distance from the earth, Dr. Clemence explained. A satellite 1,000 miles away would whiz around the earth in about two and a half hours, which is one reason why such objects have not previously been spotted—they would be moving too fast to be caught on the usual photographic plates.

Another reason tiny satellites have not been seen is that "most of the time they are in the earth's shadow, and thus do not shine," Dr. Clemence continued. If, however, such an object were not too close to the earth, it would come out of the shadow just a little, and thus could be seen. Solution to the problem of such fast motion, Dr. Clemence said, is to move the camera at the same speed as the satellite being hunted would flash through the sky.

Completion of the sky-sweeping search is expected to take two to three years.

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TECHNOLOGY

Fluorescent Light Twice As Bright at Intersection

➤ AN EXPERIMENTAL fluorescent light unit at an intersection of the Sacramento, Calif., highway has been found to give twice the light of the common mercury vapor street light. Furthermore, the light is "glareless."

Highway engineers thought the cool California nights might cause the fluorescent lights to grow dim, since they are designed for best operation at 70 degrees Fahrenheit. However, "no visible decrease in light output has been evident," the engineers report.

The fluorescent tubes are housed in open, enamelled luminaires, finished white on the underside and dark green on the top. They produced an average illumination of seven foot-candles at the intersection.

The California project is reported in *Highway Research Abstracts* (Feb.), published by the Highway Research Board of the National Research Council.

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