

ARCHAEOLOGY

Pottery Is Clue to Site

► EVIDENCE from an unknown Mycenaean site in Turkey was unexpectedly dropped into the hands of an American archaeologist recently.

A group of Turkish peasants in Bodrum toting old pottery they had picked up as souvenirs brought it to George Bass, research associate in the Mediterranean section of the University Museum of the University of Pennsylvania. He was director of an expedition which was doing underwater archaeological research at Yassi Island near Bodrum.

He recognized the pottery as examples from the Mycenaean civilization in Greece from 1400 B.C. to 1100 B.C. It came from an embankment at Muskebi on the west coast of Turkey near Halicarnassus. Turkish camel drivers found six chamber tombs in a formal cemetery while digging for white clay. The pottery had come from the tombs in the site. The archaeologist filed a petition with the Turkish government to undertake excavations at the site.

Mr. Bass, underwater archaeology expert,

was excavating a seventh century A.D. Byzantine shipwreck at nearby Yassi Island. With 17 divers from Turkey, Germany, France and the U.S., a new underwater technique had been developed.

A scaffolding was erected over the entire wreck so that photographers were able to take photos of 27 separate areas of the ship. An accurate map has been drawn which gives first-hand information about Byzantine ship construction.

The ship was a sailing vessel that struck the reef. Its hull was recovered intact along with some rigging, a hand-carved ladder rung, gold coins, lamps and sounding leads. Six other shipwrecks lie nearby.

A year earlier the captain's table was found intact on the Byzantine wreck along with tableware recoveries which were the largest ever made of Byzantine pottery.

This expedition was financed by the University Museum and the National Geographic Society.

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GENERAL SCIENCE

Blood Studies on Everest

► POSSIBLE CURES for anemia, leukemia and other blood diseases could mark the success of the scientifically-oriented U.S. mountain-climbing expedition which leaves for Mt. Everest early in January, Dr. William Siri of University of California's Donner Laboratory, a member of the expedition, predicted.

The twenty-man team plans a physiological, psychological and sociological study of its members on the ascent to Mt. Everest. In particular, the search for a crucial hormone, erythropoietin, which regulates the formation of red blood cells, will be conducted under high altitude conditions.

This hormone has never been isolated although it is known to be significantly increased in the body in cases of severe anemia. It is thought that the body may produce higher concentrations of the hormone at high-altitude conditions which cause the breakdown of red blood cells. The rate at which blood cells are produced in bodies of the climbers will be made with radioactive iron tracers.

Studies of the adrenal cortex, a gland which produces some thirty-odd hormones, will be made. The adrenal cortex is highly active under conditions of stress. The mountain-climbing expedition will provide conditions similar to battle combat and will give scientists an opportunity to study body changes in hormone concentrations.

Other scientific research will be conducted in glaciology, in which ice samples will be collected for analysis. Nobelist Willard F. Libby at the University of California in Los Angeles will use the

samples in a study of naturally occurring radioactive tritium.

If the expedition is successful in reaching the peak next May as planned it will be the third group in the world. It is headed by Norman G. Dyhrenfurth of Santa Monica Canyon, Calif. The "egghead members" of his climbing crew include five men with Ph.D.'s, three with M.D.'s and a high proportion of M.A.'s. Their professions range from a physicist to a novelist. All men on the expedition are experienced mountain climbers.

In addition to Mt. Everest (29,028 feet), which will be climbed on the south side, the group hopes to ascend nearby Lhotse (27,923 feet) and Nuptse (25,726 feet).

After this Mt. Everest expedition the group will form a permanent American Everest Foundation to support mountain research around the world. Its \$326,000 budget is sponsored by the Office of Naval Research, the U.S. Air Force Office of Scientific Research, Explorers Club of New York, the University of California at Los Angeles, the National Geographic Society and the National Science Foundation.

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ASTROPHYSICS

Tiny Flakes of Graphite Believed Peppering Space

► THE VAST reaches of space between the stars are peppered with minute flakes of graphite—the carbon of an ordinary lead pencil—not tiny ice crystals as has been thought.

The graphite is formed on the surface of cool carbon stars, Drs. F. Hoyle of St. John's College, Cambridge, and Dr. N. C. Wickramasinghe of Trinity College, Cambridge, England, suggest in their new theory to explain what particles in space cause light to become reddened as it travels between stars.

The values predicted for reddening by graphite flakes are in "remarkable agreement" with observations, they reported in *Monthly Notices of the Royal Astronomical Society*, 124:417, 1962.

There are about 1,000 of the right kind of cool carbon stars among the many billions in any one galaxy, but they are enough to produce the required number of flakes to account for the reddening.

About three billion years, or slightly less than a third of the estimated age of the universe, would be needed to produce the required density of interstellar flakes. The flakes could be produced in galaxies that contain little or no gas, and could be expelled from galaxies.

The reason only 1,000 stars are needed to achieve the densities is that they have a very large surface area on which the graphite flakes can be formed.

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TECHNOLOGY

Mona Lisa Travels With Scientific Safeguards

► MODERN TECHNOLOGY hand-in-hand with Renaissance art makes possible the appearance of Mona Lisa's smile on the American scene.

Mona Lisa, who is pushing 455 years of age, has traveled safely in a hermetically sealed box across the ocean to galleries in New York and in Washington. Conditions in the box maintain the same conditions of her home base, the Louvre. Her ancient wood panels are the Mona Lisa's greatest threat to survival. To protect the Italiana from injurious humidity and temperature changes, her box housing was maintained at a constant 70 degrees and relative humidity reading of 55 per cent. The National Gallery of Art has thermometers and hydrometers throughout its rooms to make certain temperature and humidity are as required.

Mona Lisa is hardy enough to withstand light travel shocks since the paint is firmly attached to her wood panels. However, because of the great dangers of increased heat, precautions are being taken not to shine heavy lights directly on her.

By contrast the famous lady is tougher than the comparatively younger U.S. Declaration of Independence, Constitution and Bill of Rights, which are kept in helium free of normal air contaminants in addition to temperature and humidity controls.

A distinguished pair of travel companions, Mr. Jean Chatelain, director of all the museums of France and Madame Madeleine Ours, head of the Louvre laboratory, will accompany Mona Lisa on her U.S. travels. She arrived in Washington for a 20 day visit on Dec. 18 and will also remain in a New York gallery for several weeks afterwards.

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