

GEOPHYSICS

Explore Antarctic Riches

Two thousand miles of unmapped mountains in Antarctica will be explored by scientists and engineers participating in Operation Deep Freeze 1963.

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► A NEWLY discovered Antarctic mountain range may hold untold riches for scientists now preparing to leave for the South Polar continent.

Teams of scientists will soon leave the nation's capital for exploration of the mysterious continent during the southern summer months, SCIENCE SERVICE learned.

Nearly 2,000 miles of unmapped mountains will be traveled by helicopter and motor toboggan, with a four-man team bouncing radio beams off 12,000-foot-high mountain peaks to compile more maps of the unknown Antarctica. Another team will press into the heart of the continent to search for riches and map the rock layers of the Patuxent Range in the Pensacola Mountains only seen in air photographs before. The mountains are several hundred miles from the famous Byrd station.

Leading the geologists will be Dr. Arthur B. Ford, geologist with the U. S. Geological Survey in Washington, D. C., returning to Antarctica for the third year. Last year his party discovered a fresh meteorite in the Thiel Mountains some hundred miles east of the Pensacolas.

Accompanying Dr. Ford will be Dr. Dwight L. Schmidt of the Denver Survey office, Robert D. Brown Jr. of Menlo Park, Calif., Robert G. Luedke from the Washington office, and two geology students, Walter Boyd and James H. Dover. Thomas E. Taylor, Survey mapper from Pueblo, Colo., will explore the Range with surveying equip-

ment, putting the peaks and rock formations into position on paper.

The group will determine what types of rock make up the mountains. Although they do not expect to find more meteorites or mineral deposits, Dr. Ford's group will search for fossils which may show the age of the ancient ice-covered rocks.

Operation Deep Freeze 1963, as the Antarctic research is known, will include the mapping of the mountains from Hallet station west and from the Beardmore glacier east to the Thiel Mountains where Dr. Ford's party discovered the meteorite last year.

A camp site of the civil engineers who worked on the project "Topo South" in the Antarctic last year during the summer support season of Operation Deep Freeze '62 is seen on this week's front cover.

Operation Topo East and West, led by Peter F. Bermel, civil engineer with the U.S. Geological Survey, in Washington, D.C., will map the coastal mountains east and west of the Ross Ice Shelf by helicopter. Continuing last year's Topo North and South, Mr. Bermel and three other scientists from the Survey, Donald C. Barnett of the Washington office, Kenneth S. McLean of the Denver Office and Ezekiel R. Soza from Sacramento, will be transported from jagged mountain peaks to ice fields with a relatively new Electrotape system which measures many miles with a high degree of accuracy using radio signals.

Antarctica contains 5,500,000 square miles.

It is one and one-half times as large as all of the United States. At least one-third of the continent needs to be mapped at least to the scale of one to 250,000, Mr. Bermel said.

This year's operation will only scratch the surface of the continent.

This is the fourth year of Operation Deep Freeze since the International Geophysical Year. This year will also see the beginning of year-around operation for the new Eights Station in Ellsworth Land, built to study upper atmosphere physics.

The Antarctica research vessel, USNS Eltanin, armed with equipment for testing living creatures, radio waves, the atmosphere, ice and water, will cruise around the icy continent with a large staff of scientists. Several universities are also sending teams of scientists.

Other teams of scientists will study the biology, glaciers and ice, sky, physics, chemistry, geology and weather of Antarctica this year.

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ENTOMOLOGY

Foreign Pest Invades Great Lakes States

► A TINY European beetle, serious and destructive pest of cereal crops, has invaded several counties in Michigan and Indiana, SCIENCE SERVICE learned.

Uncovered for the first time by U.S. Department of Agriculture entomologists in July in Berrien County, Mich., the pest has already been reported spreading into Cass County and south into La Porte and St. Joseph Counties in Indiana.

Scientists fear the rapid spread of the beetles. European farmers have battled them for years, losing at nearly every turn. As early as 1891 Hungary lost more than a million pounds sterling to the tiny pests. Rumania was forced to plow much of its crops underground in 1931, the insects' attack was so great. Britain, Morocco, Spain and France, as well as most of the countries in eastern Europe have recorded losses.

Insect experts are baffled by the sudden occurrence of the cereal leaf beetle, scientifically known as *Oulema melanopa*. How it first reached the middle of the U.S. is a mystery. In 1961 it was stopped at U.S. ports of entry on three occasions. A German car being imported by an American through Detroit contained an adult beetle. The pest was destroyed. The other two interceptions were made in New Jersey.

Entomologists at the scene believe the pests are now in a semi-resting stage in whorls of corn and crowns of grasses. The adult has a black head and reddish-brown body, somewhat smaller than the potato beetle. The larva or immature stage appears dirty yellow in color, looking like the larva of the Colorado potato beetle.

Scientists plan to meet at Michigan State University to outline an eradication program. If the pest should spread much more, it would wreak havoc on cereal grains throughout the Midwest, a Department official warned.

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ANTARCTIC PEAK—A civil engineer attached to the U.S. Geological Survey Project "Topo South" uses a distance finder on a mountain peak in the Antarctic during the summer support season of Operation Deep Freeze '62.