

SCIENCE NEWS

THE DESTRUCTION OF ICEBERGS

Science Service

How for the first time in the history of navigation members of the U. S. Coast Guard Service on duty as the International Ice Patrol blew up a mountain of ice with TNT in order to save ships plying the trans-Atlantic tracks from the fate of the *Titanic* is told by Edward H. Smith of the U. S. Coast Guard who had charge of the work.

An iceberg 350 feet long and with two peaks, the highest estimated to be 170 feet above the water line, had drifted well within the warm water of the Gulf Stream south of the Grand Banks of Newfoundland and seriously threatened the safety of large liners crossing the Atlantic. To remove this menace it was decided to attempt to destroy the berg.

Two TNT wrecking mines were lashed together and suspended six feet under water from a float. One of the patrol ship's boats placed this float close under a precipitous face of the berg. As they approached the huge ice mass a continual snapping and cracking, like rifle fire, greeted them, while they could see fissures continually darting and spreading through the ice of the disintegrating berg. Great care was taken in placing the mine and then the boat quickly pulled out of danger and fired the charge. Unfortunately a fog, which had closed in during these operations, shrouded the effect of the explosion. Those that stood on the deck of the patrol ship, a half mile from the berg, state that the report was followed by a terrific roaring and crashing, rivaling the heaviest thunder, as the iceberg broke apart.

The next day the berg was found to be appreciably smaller, but still of huge size, and another mine was used.

Each succeeding day the berg was drifting farther south and becoming a greater menace to steamships. On the fourth day, profiting by previous experience, the approximate center of gravity of the berg was determined, and it was decided to place the mine under a smooth wall of ice which was slightly overhanging. Attempt was made to drive a sharpened spike far enough in the ice to hold the mine to be suspended from it, but the motion of the boat prevented this. Attempts were also made to throw grapnels over the projections in the ice, but they failed to hold. Finally a line was shot across the berg so the projectile fell where it was desired to place the mine. The mine was then attached about thirty feet under water. All the time the boat was kept headed away from the berg, ready to pull off if the berg should start to topple an avalanche of ice from one of its summits.

"When the mine was fired," said Mr. Smith, "it produced a spectacle that is beyond description. A column of water was thrown nearly to the top of the berg. Thousands of tons of ice detached themselves and fell with a mighty roar into the sea. This caused the berg to lighten weight very considerably on the side toward

us, rising to a very majestic height. About the time it attained its greatest height a great report was heard and the berg broke squarely in two pieces. The movement appeared to be very slow, in all probability due to the enormous size of the masses of ice."

This wrecking of the iceberg, Mr. Smith explained, undoubtedly removed a danger from the path of speeding liners several days earlier than would have been the case otherwise.

THE FOOD OF CORAL ANIMALS

Science Service

THE builders of coral reefs and islands are entirely meat eating animals, Dr. T. Wayland Vaughan, of the U. S. Geological Survey, told the Pan-Pacific Science Congress at its meeting in Melbourne last week. In experiments conducted by him in the Tortugas, in the Gulf of Mexico, corals persistently refused a vegetable diet, but even water fleas were not swift enough to dodge the tentacles of these carnivorous creatures.

The living coral is a branched colony of individuals all connected together and with their soft bodies encased in strong cells. Each individual is little more than a stomach, with a mouth surrounded by tentacles and sheltered in a little cup of the limy skeleton within which the whole colony is enclosed.

Dr. Vaughan described how when a little beef juice or a small bit of meat, usually crab flesh or fish, was offered, the tentacles at the outer edge of the colony would begin to appear. Then the stimulus was transmitted to other members of the colony until soon the surface of the specimen had opened out like a beautiful flower. This condition seems to indicate that the coral colony is hungry and ready to capture food.

Corals have special mechanisms for catching food, including tentacles containing stinging cells and cilia, or hair-like extensions of the outer layer of the soft tissue which in response to certain stimuli beat toward the mouth opening, and in response to others beat away from it. The outer surface also secretes mucus in which particles of food may be embedded and this mucus is moved by the beat of the cilia either toward or away from the mouth.

Many different kinds of food were offered corals, Dr. Vaughan said, but they took only animal food. A piece of diatom mat was placed on one side of the oral disc, between the tentacles and the mouth, and a piece of crab meat on the other. Invariably the crab meat was seized and swallowed; while the diatoms induced no reaction except ultimately to be removed from the surface. No kind of purely vegetable food was taken by any one of the numerous species investigated. Pieces of plants coated with small animals or soaked in meat juice were swallowed but later the vegetable matter was ejected.

When hunger is entirely satisfied, the tentacles retract and the ciliary motion reverses and particles of food are moved away toward the outside edge of the colony.

At the rate of upward growth observed in the reefs of the West Indies it would take from 6,531 to 7,620 years for the formation of a reef 150 feet thick in one of the species examined, while another could build the same thickness of reef in 1,800 years, while some of the Pacific forms grow still more rapidly and might accomplish as much in 1,000 years.

ALLIANCE AGAINST INSECTS

Science Service

ENTOMOLOGISTS throughout the world are working together in the war against crop insects, according to Dr. L. O. Howard, chief of the Bureau of Entomology of the U. S. Department of Agriculture. Parasites which prey upon damaging insects and keep their numbers down in one country are constantly being drafted by the scientists for use in the fight against the imported pests of another country.

Many of the insects which have found their way into this country from other lands left their natural enemies behind them. In consequence they have been able to increase in greater numbers than at home with greater damage to plant life they infest. In order to restore the balance of nature, the entomologists study the life and habits of the insect in its home land. They discover what parasites prey upon it and keep its numbers down. Some of these parasites are then collected and brought to this country to help check the ravages on crops here.

The United States now has an expert in Mexico in search of parasites of the Mexican bean beetle. Another is studying the enemies of the threatening Mexican fruit-fly in that country. Two are in Japan seeking parasites of the Japanese beetle, while another is in that country looking for enemies of the gypsy moth which continues to destroy trees in New England. Two men are just back from Hungary where they also studied the gypsy moth whose native range is all the way from Europe across Siberia to Japan. But nowhere is it so damaging as in America.

Europe has furnished America more of the undesirable insect immigrants than any other section of the world, and the United States now has a complete laboratory with three experts at Heyeres, 70 miles east of Marseilles, France, for the study of the pests native to southern Europe.

Besides these American experts in the field, entomologists of the various nations are in constant communication and frequently make collections of parasites for each other. Generally such exchanges are from the older to the newer countries, but America has given effective help of this kind to Europe, notably in the case of parasites of the woolly root louse of the apple. This insect is a native of America, and until the parasites were supplied from here, it was doing great damage in France.

A TREPHINED SKULL FROM NEW MEXICO

AN archeological expedition sent out by the American Museum of Natural History and which has been engaged in field work at Mitten Rock in the Navajo Reservation,

New Mexico, has sent word that they have just made an unusual find in that country.

Earl H. Morris, who for a number of years has had charge of the investigation and restoration of the famous ruins at Aztec, writes that while making excavations at Mitten Rock they unearthed a human skull which presented an unusual appearance. When freed of earth it was found that the entire upper portion was knobbed and pitted as the result of disease of long standing. In addition the right side had been extensively trephined. An oval section, approximately two inches in length and one in width, had been removed from the frontal bone immediately above the right eye. Presumably this operation was performed, as among other primitive peoples, in an attempt to relieve pain. The skillful manner in which the ancient surgeon used his flint knives is revealed by the smooth, even edges of the bone. However, the fact that these show no evidence of healing proves that the individual did not long survive the ordeal.

Mr. Morris further states that the person to whom the skull belonged was of the brachycephalic, or short-headed type, and of short stature. A people possessing these physical characteristics inhabited the San Juan Valley before the development of the Pueblo Cliff Dweller culture which was in existence for many centuries, if not for thousands of years previous to the discovery of America by Europeans.

Thus the trephined specimen is of relatively great antiquity and of commensurate scientific importance. No other instance of trephining has been discovered among aboriginal skulls from the Southwest, and only two others have been recorded from North America north of Mexico.

The authorities of the museum are anxiously awaiting the arrival of this unusual specimen in order that photographs and further scientific examination can be made.

ITEMS

Science Service

NOTWITHSTANDING reported privations of the people of Germany, the death rate of that country is now the lowest of record, according to a correspondent of the American Medical Association. The previous low record was in 1913. The most probable explanation is thought to be the reduction of the birth rate in recent years, since a large part of the mortality rate has always been due to the deaths of young children.

ENVIRONMENT has so much to do with the causation of mental disease that the control of heredity through segregation or sterilization of mental defectives should not be considered the only hope of solving the social problem of mental deficiency, Dr. Abraham Myerson, of Boston, told members of the American Psychiatric Association in their annual meeting in Detroit. The most fruitful working hypothesis for students of mental disease is to regard the environment as responsible, and to undertake research in that direction rather than to take refuge in any hypothetical unit character defect or alteration. Investigation must be carried on by studies of patients themselves and by laboratory methods, and not by merely statistical studies of heredity.