

OCEANOGRAPHY

Mysterious Heat Flow Warms Deep Ocean Floor

See Front Cover

► OCEANOGRAPHERS RETURNING from a voyage of exploration in the South Seas are all warmed up about a mysterious heat flow on the ocean's floor.

Dr. Roger Revelle, director of the Scripps Institution of Oceanography's Capricorn expedition to the South Pacific, said the oceanographers found a heat flow from the ocean bottom equal to that from high and dry continents caused by radioactive elements.

As there is little radioactive material in the ocean floor, Dr. Revelle speculated, it may be that uranium is still in the earth's mantle deep below the ocean floor. Heat from the uranium may slowly percolate up through the mantle, thus warming the ocean floor.

This heat may account for a curious lack of sediments on the ocean floor, he said. The expedition found that sediments on the bottom were only about 600 feet deep, accounting for only 100,000,000 years of the earth's history.

The heat from the earth's mantle, rising to the ocean floor, may have destroyed the sediment's of the rest of the earth's 3,000,000,000-year history, he suggested.

When the Scripps' oceanographers were not sampling the ocean depths with seismic recorders, thermometers, dredges and other instruments, they donned diving masks to examine the underwater life of shallower areas, as shown on the cover of this week's SCIENCE NEWS LETTER. The scientists spent an estimated 75 man-hours skin-diving, the Institution reported.

Science News Letter, March 21, 1953

PUBLIC HEALTH

Jamaica Canned Plant Barred as Dangerous

► SOME UNSUSPECTING Americans have just been saved from ackee poisoning, known also as "the dreaded vomiting sickness of Jamaica."

They are those who might have bought and eaten some canned ackee, either out of curiosity to taste a new, strange food or because they liked the ackee's nut-flavored, white spongy arilli they ate on a visit to the West Indies.

The first shipment of canned ackee offered for entry to the United States, however, was found to consist of "flat sours." So the U. S. Food and Drug Administration refused it entry and ordered the shipment re-exported. Then FDA did a little checking on this strange food and said, in effect, no canned ackee can be imported into this country for sale.

The reason is that the ackee is only edible when fresh and ripe. Overripe or under ripe, it is poisonous. Since 1886, 5,000

deaths in Jamaica have been attributed to ackee poisoning. There is no way of telling poisonous from nonpoisonous arilli unless you know the condition of the ackee when gathered. In commercial cannery practice, ackees would have to come from widely scattered, indiscriminate sources. This, Food and Drug decided, would involve risk of including ackees unfit for consumption.

The ackee is a tropical tree belonging to the soapberry family. It is native to tropical West Africa and was brought to the West Indies in 1778. It grows 35 to 40 feet high. The fruit is a triangular capsule about three inches long and straw colored to magenta red. Inside is the white fleshy or spongy substance, said to resemble calf brain, called the arillus. According to one authority, the arillus is a "delicious morsel" when fried in butter and "excellent boiled with salt fish."

Science News Letter, March 21, 1953

MEDICINE

Blood Prints Distinctive As Human Fingerprints

► EXISTENCE OF "blood prints" that are almost as distinctive as fingerprints has been announced by the American Cancer Society in Boston.

The "blood prints" are electrophoretic blood patterns, that is, patterns of the migration of colloidal particles in blood plasma under the influence of an electric field.

Study of these patterns for hundreds of healthy and sick people shows a specific picture for each, Dr. Peter Bernfeld of Tufts Medical College, Boston, finds. The blood prints, unlike fingerprints, change a little from time to time, reflecting changes in health or a drastic change in diet, Dr. Bernfeld says.

Blood prints of identical twins are especially interesting to Dr. Bernfeld right now, and he will gladly run one for them if they go to his laboratory.

More than half those he has studied so far show striking similarity, though sickness, fever, nutrition and medicines make some differences.

Science News Letter, March 21, 1953

MEDICINE

New TB Medicine From Kalamazoo Soil

► THE SOIL near Kalamazoo, Mich., has yielded a new antibiotic chemical that may prove of benefit to tuberculosis patients.

Although less effective than streptomycin sulfate against TB germs in mice, the new antibiotic does not seem to cause damage to the nerve of hearing.

The new antibiotic, now undergoing clinical tests, is called Amicetin. Its discovery is announced by C. DeBoer, E. Louis Caron and Dr. J. W. Hinman of the Upjohn Company, Kalamazoo, in the *Journal of the American Chemical Society* (Jan. 20).

Science News Letter, March 21, 1953

IN SCIENCE

GENERAL SCIENCE

Saucers Blamed on Foam From Detergents

► RUMORS ABOUT flying saucers are flying through the air with the ease of a soap bubble.

The staid and sober British medical publication, *Lancet* (Feb. 21), in an article on detergents, says that detergents have caused some flying saucer stories in America.

Here is the way it goes: Municipal sewage plants are clogged, especially on Tuesdays, with detergent-laden laundry water. The agitation in the aeration tanks produces a layer of foam, sometimes six feet deep on top of the sewage tanks. Strong winds can whip masses of foam up into the air. The foam sails away to be identified by the populace as another flying saucer.

Science News Letter, March 21, 1953

GENERAL SCIENCE

Research Ship Outfitted For Gulf Explorations

► ABOUT \$100,000 worth of electronic equipment for research purposes will be installed on a three-masted auxiliary schooner, the *Atlantic*, in the Gulf of Galveston, soon.

Given to the Texas A. & M. Research Foundation by Erwin C. and Robert A. Uilein, Milwaukee industrialists, the schooner, formerly a sub-chaser and luxury yacht, will be used in research by the department of oceanography at Texas A. and M. College, College Station.

Research equipment to be mounted on the vessel includes an electronics laboratory, chemical, biological and physical laboratories, a fathometer, Loran, a geomagnetic-electrokinetograph, sampling equipment and machinery for dredging and coring the bottom of the Gulf of Mexico. It also will carry a Class A weather station for ships.

The Research Foundation is a non-profit corporation with headquarters on the Texas A. and M. campus. It conducts studies in many fields, using staff and facilities of the college as well as its own.

The Research Foundation directed research on laying of the longest known offshore pipeline in the Gulf of Mexico, and handled research on oyster mortality affecting the multi-million dollar oyster harvesting industry on the Gulf coast.

Increasing interest in the oil and gas reserves of the coastal tidelands has raised many questions of undersea conditions and the effects of waves upon offshore drilling structures and pipelines.

Science News Letter, March 21, 1953

CE FIELDS

MEDICINE

Radio Gold for Cancer Destroys Bone Marrow

► RADIOACTIVE COLLOIDAL gold, widely used in cancer treatment, can destroy the bone marrow.

A warning on "this hazard to the blood-forming tissues of the body" is issued by Drs. Thomas W. Botsford, H. Brownell Wheeler, Robert A. Newton and William E. Jaques of Peter Bent Brigham Hospital and Harvard Medical School, Boston, in the *Journal of the American Medical Association* (March 7).

They discovered the danger in autopsy examinations of four patients who had been getting this treatment. Particles consistent with colloidal gold were found in the damaged bone marrow of these patients. The marrow destruction, the doctors think, was due to radiation from the gold particles that were carried from the site of injection to the bone marrow.

The benefits of radioactive colloidal gold treatment may outweigh the dangers, as is the case with nitrogen mustard and some other anti-tumor drugs that damage bone marrow. But, the doctors point out, more experimental data and clinical appraisal will be necessary to determine this.

Science News Letter, March 21, 1953

BIOCHEMISTRY

Morphine Antidote Seen Aid in Mental Sickness

► PSYCHIATRISTS PROBING sick minds to find the cause of their sickness have a new aid. It is a chemical derived from morphine. It has the chemical name of N-allylnormorphine and the trade name, Nalline.

Nalline's potential value in psychiatry was discovered accidentally by Drs. Maurice Bornstein and Leon Yorburg of Brooklyn, N. Y., and Dr. Barbara Johnston of New York.

This drug is an antidote to overdoses of morphine and certain other pain-relieving drugs. It was being used to save two patients who had got too much of one of these drugs, Dromoran, or methorphan hydrobromide.

In both cases the patients, while still unconscious but beginning to recover, talked freely. One talked about people who wanted "to get my money." She claimed the doctors were experimenting on her and tore her way out of the oxygen tent.

The other said she knew she was going to die "but it didn't matter because no one wanted her except her husband."

The first patient later said, "Doctor, I'm sorry, but that's what I believed," referring to her talk about being experimented on.

Neither of these patients was mentally sick. But their reactions show that Nalline will bring unpleasant or painful ideas and memories to the fore against the patient's will and without any probing by the doctor, such as is necessary when pentobarbital sodium is used to release unpleasant memories buried in the patient's unconscious mind.

The cases are reported in the *Journal of the American Medical Association* (March 14) with the suggestion that further study be made of Nalline as a potential aid in psychiatric treatment.

Science News Letter, March 21, 1953

MARINE BIOLOGY

Sardine and Mackerel Catches Dangerously Low

► SPECTACULAR FAILURE of two California commercial fish species, sardines and Pacific mackerel, is creating real alarm among fishermen and fisheries scientists, Dr. John E. Fitch of the California Department of Fish and Game told the North American Wildlife Conference in Washington.

Catches of Pacific mackerel have dropped steadily from 146,000,000 pounds in the 1935-36 season to scarcely 20,000,000 pounds in the current season. Similar sharp decreases have occurred in the catch of sardines, one of California's most valuable species.

The biggest headache of fish conservationists, Dr. Fitch said, is how to build up the population of the declining species so there will be an adequate spawning stock for future generations.

The reserve spawning stock of Pacific mackerel, fish over four years of age, has dwindled to less than three percent of the population, Dr. Fitch said.

What is responsible for the failure of the fish to maintain their numbers—man or nature?

The part man plays in reducing the number of fish with his nets is only one of countless factors that could account for declining populations. Decrease in the fishes' food supply, changes of temperature or salt concentration in the water, an increase in the number of diseases, parasites or predators on the species could explain a decline.

However, Dr. Fitch said, man cannot yet control these natural factors. He can, however, exert some control over how and how much fishermen take from the sea.

Closed seasons and size restrictions might help the situation somewhat, Dr. Fitch said, but these alone cannot be expected to restore the species to their former abundance.

Perhaps the best thing that can be done, he said, is to place an over-all yearly bag limit on the amount of the fish that can be caught—and hope the spawning reserve can catch up.

Science News Letter, March 21, 1953

PSYCHOLOGY

\$200,000 to Find Why Some Families Fail

► WHEN MEN and women with excessive emotional needs marry, they and their families are likely to "fail so miserably that their problems require the major part of our health and welfare dollars and services."

This finding from a pilot study of 100 badly disorganized families will be further tested in a four-year study by Community Research Associates, Inc., New York, under a \$200,000 grant from the Louis W. and Maud Hill Family Foundation, which will be directed by Paul T. Beisser, associate director of Community Research Associates.

The pilot study showed 10 typical axes, or seesaws, on which most disorganized families are found. These are: 1. a dual immature dependency axis; 2. a woman-oriented anxiety axis; 3. a woman-dominated dependency axis; 4. a woman-dominated competitive axis; 5. a man-dominated competitive axis; 6. a man-oriented self-depreciating axis; 7. a woman-oriented self-depreciating axis; 8. a dual emotionally detached axis; 9. a man-dominated hostile axis and 10. a woman-dominated hostile axis.

The personality components which affect the marital axes include the passive dependent men and women, anxious adequate women, controlling dependent women, controlling belittling men and women, pain-seeking, long-suffering men and women, detached ineffectual men and women, hostile aggressive men and women, vulnerable susceptible partners, and troublesome ineffectual partners. It is the way these components "mix" in marriage and the degree to which the partners' emotional needs are excessive that damage the relationships of the whole family.

Science News Letter, March 21, 1953

TECHNOLOGY

Stoplight Watches Cars To Direct Traffic Flow

► NOW A smart stoplight has been invented. It watches cars coming toward it at intersections and keeps the green light burning longer when traffic gets heavy on one of the streets.

Through special detectors buried under the pavement near the intersection, the device, developed by General Electric engineers at Lynn, Mass., studies traffic flow on the streets. When traffic gets heavier on one of the streets, the detectors electronically tell the stoplight to keep traffic moving longer on that street.

The smart stoplight should reduce traffic problems at critical intersections where traffic often is spasmodic and difficult to predict. But it is any man's guess what happens at quitting time when cars come honking up both streets at once, bumper to bumper.

Science News Letter, March 21, 1953