

GEOPHYSICS

**World-Wide Study
Of Earth's Crust**

► WHILE SCIENTISTS are planning to dig deep into the solid heart of the earth, they are also very interested in other methods of studying what goes on from the earth's crust down to several thousand feet below the surface.

Paralleling the Mohole Project of piercing the earth's crust to the mantle some five miles down from the ocean floor will be a world-wide exploration of the crust and upper mantle. The so-called Upper Mantle Project will begin in 1962, with many nations cooperating, just as they did in the now famous and resultful International Geophysical Year.

The large-scale study will cover the continents and its margins, deep oceanic basins, submarine ridges and island arcs. Scientists hope to learn more about the forces and processes that shaped the earth throughout geologic history.

Scientists in the United States and Russia already have been working on many of these problems for many years, but the interpretations of the results have varied widely.

"The Upper Mantle Project will stress the coordination of the various groups of scientists in various fields and the standardization of the methods used for the interpretation of observations," the International Union of Geodesy and Geophysics Chronicle reported. The union will act as the coordinating agency for the project.

• Science News Letter, 80:8 July 1, 1961

GENERAL SCIENCE

**International Help For
Developing Countries**

► A PROGRAM of international cooperation in scientific research to help newly developing countries solve their technical and economic problems has been recommended at Stanford Research Institute, Menlo Park, Calif.

To get it underway, the Government is urged to set up an Office of Research and Development within the United States foreign aid program. Functions would include helping define research needs, studying developmental methods, and supporting long-term relationships between U. S. institutions and those in developing countries.

The proposal came from a group of more than 40 scientists, technologists and research administrators after many meetings at Stanford's International Industrial Development Center.

Five major approaches are suggested:

Adapt previously gained scientific and technological knowledge to meet specific needs of underdeveloped countries.

Do more research in social sciences and social technology with the aim of bettering techniques by which a "backward" country can transform itself into "a modern, science-using society."

Select fields where valuable advances seem feasible for each country—such as

transportation, communication, power supply, medicine and farming. Then give strong support to basic and applied research necessary to speed advances.

Through education and research cultivation, help underdeveloped countries "build up their own local capacities in science and technology."

Work toward "long-term inter-institutional cooperation" between advanced countries and developing countries, involving "a network of relationships among research organizations."

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SPACE

**Study Earth Bacteria
For Space Survival Clue**

► THE STUDY of six different kinds of earth bacteria under artificial space conditions may give important clues to future space travel.

Such studies could give information about the behavior of cells, basic building blocks of all living things.

Single cells, adjusted to earth conditions, reproduce by splitting. Scientists need to know if the cells will split in the same manner in space or divide in some other, unknown way.

The bacteria will be tested in a dried state in an ultra-high vacuum like that found at orbiting altitudes 500 miles above the earth's surface. They will also be irradiated with ultraviolet light at wavelengths down to 2,000 angstroms or less to simulate radiation in space.

Further studies at the National Research Corporation, Cambridge, Mass., for the National Aeronautics and Space Administration are expected to include particle bombardment, ionizing irradiation and the effect of mutation on survival of the bacteria.

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PSYCHOLOGY

**Mental Health Problems
Affect Reading Skill**

► IF JOHNNY cannot read, the fault may not be with his teacher or the method by which he was taught—whether the phonics method or the "see and say." He may be having difficulty with his mental health, Dr. Franklin H. Goldberg of the New York University Reading Institute reported to the Eastern Psychological Association in Philadelphia.

Dr. Goldberg studied 32 boys who were from one to four years retarded in their school work. The boys were not all stupid, Dr. Goldberg found. Although some were "dull-normal," some were superior in intelligence. Most of the boys were of average intelligence. Of the boys studied, 18 were found to have mental health difficulties.

Dr. Goldberg studied the personality characteristics of these retarded boys. The typical retarded reader, he found, is an immature, frightened and unhappy boy who does not enter actively into relationships with boys his age because of deep-seated feelings of inadequacy and failure.

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IN SCIEN

ZOOLOGY

**Peanut Butter Worse
Than No Mouse Bait**

► PEANUT BUTTER is no good as mouse bait. It may even be a repellent, for it catches far fewer mice than no bait at all.

Dr. Kyle Barbehenn of the National Institutes of Health Animal Farm in Gaithersburg, Md., told the American Society of Mammalogists in Urbana, Ill., that he had discovered this while taking a long look at the scientific method for catching a mouse.

He studied the meadow mouse *Microtus pennsylvanicus*, a chestnut-colored animal with silvery white belly, small eyes, short tail and ears so small they are hidden in the fur. These little rodents are plant eaters and have the peculiar habit of building runways or trails in the grass. Although the runways are only one mouse wide, they serve as super highways.

The meadow mouse does most of its foraging, Dr. Barbehenn believes, in the fields adjacent to the runways and probably is fairly cautious there. But on the runways, he suspected, the mice go speeding along like a driver in a hurry and are likely to run into anything, including a trap. He also wanted to test if peanut butter is the irresistible lure for small mammals it is supposed to be.

He set conventional mouse traps in the runways and in the forage fields. Some were baited with peanut butter and some were unbaited.

For the most part Dr. Barbehenn's theories were right. The baited traps in the runways caught 47 mice while the unbaited traps caught 73. Baited traps off the runway caught 12 mice and the unbaited ones got 37.

If the peanut butter is not actually a repellent, Dr. Barbehenn said, it is at least a dead giveaway as to where the trap is.

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METEOROLOGY

**Develop Instrument for
Measuring Evaporation**

► AN INSTRUMENT for accurately measuring evaporation from mountains, lakes or fields has been developed by Australian scientists.

Sensitive elements in the sophisticated instrument measure the wind, temperature, humidity and air density, and a tiny computer comes up with the correct evaporation rate, Dr. A. J. Dyer of the Australian Commonwealth Scientific and Industrial Research Organization told the American Meteorological Society meeting in Davis, Calif.

The small portable instrument known as the "Evapotron" has passed extensive field tests with flying colors.

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CE FIELDS

BIOLOGY

Scorpions Produce Sound By Banging on Ground

► TWO TYPES of scorpions in Israel have been found to produce sound in a unique way—by banging their midribs on the ground.

All other scorpions known to produce sound do so by rubbing two body parts together. Some make a hissing noise by rubbing their chests with their pincers. Others produce a shrill grating sound by scratching their own backs with the tip of the tail.

Two subspecies of *Scorpio maurus*, however, made a "drumming" sound by curling the tail over the back and whacking the midriff section against the ground. In *S. maurus palmatus*, the yellow subspecies, each strike is accompanied by rapid body vibrations that do not hit the ground, and the net result is a series of thuds. In *S. maurus fuscus*, the brown subspecies, the noise is more like a rattle.

Drs. R. Rosin and A. Schulov of Hebrew University of Jerusalem report their findings in *Science*, 133:1918, 1961. They conclude that the drumming of these scorpions may be significant in fighting and hunting but probably not in courtship.

• *Science News Letter*, 80:9 July 1, 1961

MEDICINE

X-Rays Tell Injuries When Babies Cannot

► X-RAYS are being used to tell tales on parents who willfully injure their young children but try to cover up the real reason for the injuries, the *Journal of the American Medical Association*, 176:926, 1961, reports. Drs. John L. Gwinn, Kenneth W. Lewin and Herbert G. Peterson Jr. of the Department of Radiology, Children's Hospital, and the University of Southern California School of Medicine, state they found 25 cases of unsuspected injury among children under two.

Physicians in the country also read reports on:

Tranquilizer research. "Less than ten percent of published reports on tranquilizer and antidepressant drugs meet minimum standards of scientific acceptability," according to tests on 120 psychiatric patients at the New York Hospital, Westchester Division. The researchers got some very "unscientific" results from the use of two inactive agents, or placebos, which appeared to act as drugs. Many investigators do not accept the value of "controlled" procedures, which they call gilding the lily.—Drs. Armand W. Loranger, Curtis T. Prout and Mary Alice White, White Plains, N. Y. (p. 920).

Measles. The use of gamma globulin to

modify or prevent measles is presently recommended only in children under two years of age or in those for whom measles constitutes a special risk, such as those with active tuberculosis.—Dr. John H. Dingle, Western Reserve University School of Medicine, Cleveland, Ohio (p. 972).

Nutrition. Exactly what foods do in the human digestive system is still not known. A broad investigative attack, "probably tedious but nonetheless essential," is needed to find out.—A committee of the AMA Council on Foods and Nutrition (p. 935).

• *Science News Letter*, 80:9 July 1, 1961

DERMATOLOGY

Sugar Doesn't Affect Acne But Chocolate Can Be Bad

► ACNE PATIENTS who eat sweets show no difference in results of treatment from those who are sharply restricted in the use of sugar. But chocolate is considered "offending," two Chicago physicians report.

Drs. Theodore Cornbleet and Irma Gigli divided 52 patients with severe acne into two groups. Both groups received antibiotics, but one group could have only two teaspoonsful of sugar a day in coffee or tea and could not have candy or cake or soft drinks containing sugar.

The researchers state they also compared the sugar tolerance of 15 acne patients with 15 who did not have the condition. The acne patients showed no evidence of sugar intolerance, they report in the *Archives of Dermatology*, June, 1961, published by the American Medical Association.

Although most dermatologists find chocolate "offending" in acne cases, the physicians said "questionable approaches" such as diet might be dispensed with until more solid evidence of their effectiveness is shown.

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RADIO ASTRONOMY

Additional Cause for Radio Waves From Space

► RADIO WAVES from space may stem from causes other than collisions of galaxies, the huge pinwheels of stars like the Milky Way in which the earth belongs.

Radio waves coming from distant clusters of galaxies are generally believed to result entirely from collisions. However, comparisons of such sources, as observed in Australia and England, suggested other factors to Dr. Sidney Van Den Bergh of David Dunlap Observatory, Toronto University, Richmond Hills, Canada.

He found that the number of radio sources in a cluster of galaxies was not the same as the number of galaxies in the cluster. A "poor" cluster with few galaxies might have as many radio sources as a "rich" one with many galaxies.

This suggests the possibility, he told the American Astronomical Society meeting in Nantucket, Mass., that other factors besides collisions cause the radio source.

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SURGERY

Patient Survives Surgery For Rare Heart Tumor

► A 37-YEAR-OLD auto salesman is the eighth known survivor of an operation for tumor (myxoma) of the right atrium, the upper right chamber of the heart. This type of operation has been successful since 1955.

Surgery took place at the Mayo Clinic, Rochester, Minn., after initial diagnosis at the Montefiore Hospital, Pittsburgh.

The patient had first been examined in 1955, but he returned twice in the next four years to Montefiore, showing progressive enlargement of the heart and an increase in the number of red corpuscles in his blood (polycythemia).

On removal the tumor was found to weigh more than half a pound and to measure more than three inches in diameter. Circulation outside the body was used during the operation.

Drs. Julian P. Levinson of Montefiore Hospital and Owings W. Kincaid of the Mayo Clinic report the operation in *The New England Journal of Medicine*, 264:1187, 1961.

Angiocardiology (X-ray after injection of opaque fluid intravenously) provides the only positive means for preoperative diagnosis in cases of this kind, the researchers said. If the diagnosis is suspected, an angiography should "be performed without hesitation," they added.

In the case of the Pittsburgh salesman the additional problem of increased red blood cells may have been due to small blood clots from the lung, they believe.

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ASTRONOMY

Top Layer of Moon's Surface Resembles Sand

► THE TOP LAYER of the moon's surface is made of a material resembling sand and is only one-fifth of an inch deep.

Beneath this thin, sand-like film is a layer three or four inches deep that is a good conductor of electricity. Below this layer is another, of unknown depth, that resembles rock.

This three-layer picture of the moon's surface was drawn by Dr. J. E. Gibson of the U.S. Naval Research Laboratory, Washington, from observations made during a lunar eclipse. He focused a radio telescope on the moon to record changes in temperature occurring as the lunar surface was darkened by earth's shadow.

At a wavelength of a third of an inch, Dr. Gibson found, the lunar temperature did not change more than a degree during the total eclipse of March 13, 1960. At other wavelengths, considerably higher temperature changes have been found.

Dr. Gibson combined his result with previous information at these other wavelengths. This indicated the three-layer structure for the lunar surface, reported by Dr. Gibson in the *Astrophysical Journal*, 133:1072, 1961, published in collaboration with the American Astronomical Society.

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