GEOPHYSICS

River Sediment Caused New Orleans' Quake

SEDIMENT from the Mississippi River, deposited around the delta in the Gulf of Mexico, is thought by Dr. William Bowie, of the U. S. Coast and Geodetic Survey, to have been responsible for the small earthquake felt in New Orleans on Sunday, October 19.

According to the theory of isostasy, developed by Dr. Bowie, the whole earth is in "isostatic" equilibrium. That is, the mountains are of lighter material than the lower regions, and together they all balance. As material shifts whether by deposit of sediment or by erosion, the equilibrium is restored by movement of the parts of the earth, and sometimes these movements produce earthquakes. Dr. Bowie pointed out that a number of small earthquakes is really an indication of safety, for otherwise the strains may be accumulating to such an extent that when they are released a world-shaking quake is the result.

Every year the Mississippi deposits millions of tons of sediment around the delta, and observations made by the Coast and Geodetic Survey, and also by Dr. A. Vening-Meinesz, a Dutch geophysicist, who a few years ago made some gravity measurements in the region in an American submarine, show that the Gulf is in equilibrium. Hence there must be occasional shifts to achieve this.

Dr. Bowie also suggested that the effect might be due to slumping. That is, when loose material is piled into a high mound, the slope finally becomes so great that the top parts slide off so that the pile attains an angle less steep. This may occur under water with the material around the delta.

Science News Letter, November 1, 1930

SURGERY-ELECTRICITY

Electric-Knife Wounds Weaker Than Scalpel Cuts

A MATHEMATICAL study of the tensile strength of wounds, their ability to resist strain or rupture, was reported to the American College of Surgeons meeting in Philadelphia by Dr. John D. Ellis of Chicago. The study was part of a comparison of the healing of surgical and electro-surgical wounds.

Cuts were made with a knife or scalpel, and specimens of the wounds, a small fraction of an inch each, were pulled apart and their tensile strength recorded in grams, or fractions of pounds.

Less than two-thirds, or 60 per cent. of the wounds made by electrosurgery healed by what surgeons call primary intention, as compared with 97½ per cent. of the wounds made by the scalpel. Furthermore, the electro-surgical wounds did not develop the tensile strength of the scalpel wounds for 21 days.

Electrosurgery has its greatest usefulness in the removal of malignant diseases or cancer, Dr. Oscar E. Nadeau of Chicago said at the same session. Because of the sparks from the electrosurgical needle or knife, ethylene gas or other explosive anesthetics cannot be used.

Successful use of this method in operations for goiter was reported by Dr. Martin B. Tinker of Ithaca, N. Y.

The application of electrosurgery to surgery of the brain and nervous system makes the third great advance that has been made in the field of neurosurgery, Dr. Ernest Sachs of St. Louis declared. By its means, brain tumors that were formerly considered inoperable can now be dealt with and other types of brain tumors can be removed more safely than before.

Science News Letter, November 1, 1930

PUBLIC HEALTH

How Not to Eat Too Much, Future Health Problem

OBESITY, or overweight will be the nutrition problem of the future, taking the place of malnutrition and rickets, Dr. Alonzo Engellbert Taylor of Leland Stanford University predicted at the celebration of medical progress held at the University of Pennsylvania Medical School, Philadelphia.

Instead of worry over how to feed the world, man's worry will soon be how to keep the world from being overfed. Scientific methods of farming have increased the crop production, and at the same time the use of machinery on the farm has decreased the number of animals to be fed, which in turn increases the world's food surplus. Likewise, the world population will soon become stationary, so there will be fewer people to feed.

At present physicians are still teaching people to eat enough to avoid malnutrition and lowered resistance to disease. All that will change and the physicians will soon need to teach people not to eat too much.

Science News Letter, November 1, 1930

IN SCIENC

PUBLIC HEALTH

Slight Paralysis Increase But No Danger of Epidemic

A SLIGHT increase in cases of infantile paralysis has been reported to the U. S. Public Health Service. The total number of cases for the week reported was 568, with increases in Ohio, which had a total of 96; California, which had 87; Nebraska with 35 and Minnesota with 20. The present outbreak has not fallen off as sharply as had been expected, but public health officials now feel that there is no danger of a severe epidemic. A gradual decline in the number of cases is expected.

Science News Letter, November 1, 1930

ARCHAEOLOGY

30 Ancient Pueblo Villages Found in Arizona

THIRTY new Pueblo sites have been unearthed in southeastern Arizona by Prof. Carl O. Sauer, of the geography department of the University of California at Berkeley.

The villages were all situated on the gentle slopes at the base of the mountains where the summer floods could be best utilized for farming. There has clearly been very little change in climatic conditions during the intervening centuries, Professor Sauer reported.

The complete defenselessness of the location indicates that the Chiricahua Pueblos date back to a more peaceful period than do the walled towns of New Mexico. The houses were for the most part built with their floors two or three feet below the level of the ground, anticipating the pit houses of a later period.

A few of the Pueblo sites contain springs, but many are distant many miles from the nearest water. Professor Sauer concludes from this that the villagers may have spent the dry spring months in the mountains, returning to their towns with the summer rains.

The complete depopulation of these Chiricahua Pueblos appears to be due to the onslaught of savage tribes, rather than to famine.

Science News Letter, November 1, 1930

E FIELDS

ORNITHOLOGY

Drought May Be Cause of Fewer Flights of Bats

THE BATS which live and hibernate in one end of Carlsbad Caverns, New Mexico, estimated at three million in numbers, have not been giving their usual spectacular flights recently.

Two reasons are advanced for this. One is that the extremely dry weather of the past season has caused a scarcity of night-flying insects. The other is that they have been disturbed by work going on in a nearby guano mine. Occasionally, however, they stream forth in great numbers, their flight from the cave opening lasting for several hours. An interesting feature of the bat exodus is that although they always fly south when they emerge from the cavern, they invariably return next morning from the north.

Soon now these little mammals will entirely cease their nocturnal flights and go into hibernation for the winter.

Science News Letter, November 1, 1930

MICROSCOPY

Single Cell Operation Shown in Movies

MICRO - MOVING - PICTURES showing how single cells may be operated on under high magnifications have been given their first public presentation before the New York Electrical Society. Dr. H. J. Fry, professor of biology at New York University, explained the films which were made by Prof. Robert Chambers of Washington Square College, New York University.

Slivers of glass mounted on special handles are used in some of these operations which are made on subjects so small that they cannot be seen without great magnification. The micro-technic has opened up new fields for experiment in biology and medicine. By its means single cells can be isolated from their neighbors for the purpose of obtaining pure-line tissue cultures. Substances such as bacteria and fluids can be injected directly into the interior of living cells while these are under observation. Every stage of their reaction may thus be studied.

Some of the problems already studied are the physical nature of cells of blood, nerves, muscles and skin; structure and function of the kidneys; the action of salts on physiological systems and of heavy metals on amebae and marine eggs by immersion and injection methods. The action of soaps, proteins, fats, glycerin, sugar and gases on amebae has also been studied.

Science News Letter, November 1, 1930

ENGINEERING

Admiral Taylor Chosen for Highest Award of Engineers

See front cover

THE John Fitz Medal Board of Award has chosen Rear Admiral Watson Taylor, U. S. N., retired, for the highest award for professional distinction the engineering profession of America will confer during 1931.

In summing up Admiral Taylor's accomplishments the Board cites outstanding achievement in marine architecture, revolutionary results of persistent research in hull design, improvements in many types of war ships and distinguished services as Chief Constructor of the United States Navy during the World War.

The award is the combined choice of the four American societies of civil, mining and metallurgical, mechanical and electrical engineers. The award was first made in 1902 and since that time it has been given many of the world's most prominent engineers including Lord Kelvin, George Westinghouse, Alexander Graham Bell, Thomas A. Edison, Alfred Nobel, Elihu Thomson, George W. Goethals, Orville Wright, Guglielmo Marconi, Elmer A. Sperry and Herbert Hoover.

Both as midshipman at the U. S. Naval Academy and as a post graduate at the Royal Naval College, Greenwich, England, he made the highest marks ever attained at these institutions by any student up to that time. Prior to his entrance in the Naval Academy, Admiral Taylor attended Randolph-Macon College in Virginia, his native state. Stevens Institute of Technology, Hoboken; George Washington University, Washington; Glasgow University, Scotland; and Randolph-Macon College have honored him with doctorates.

Science News Letter, November 1, 1930

HOME ECONOMICS

Housewife Walks 700 Feet While Making Apron

HERE IS a modern adaptation of the trail of thread that marked the hero's path through the labyrinth in the old Greek story. The modern thread trail was set to measure the steps taken by a housewife in the supposedly quiet task of making an apron. The housewife of the experiment went in and out of seven rooms and walked 700 feet, in assembling and putting away her equipment.

The experiment, conducted by Miss Ella Cushman at Cornell University, led up to the demonstration that all but 61 feet of walking distance could be eliminated, by establishing a "sewing center" in one room of the home. A special cabinet, with ironing board, full-length mirror, pockets, racks, drawers, a dressing form, and cutting table all combined, has been designed at the college.

Science News Letter, November 1, 1930

PHYSICS-PUBLIC HEALTH

Wide Band of Ultraviolet Helps Prevent Rickets

A MUCH wider range of ultraviolet rays than that commonly thought effective helps in the prevention or treatment of rickets, Prof. John W. M. Bunker of the Massachusetts Institute of Technology and Robert S. Harris, research associate at the Institute, reported to the American Public Health Association at its meeting in Ft. Worth, Texas, this week. Their report was based on a two-year study of 800 animals.

The wave length range generally thought effective is between 3022 and 3026 Angstrom units. An Angstrom unit is about one two hundred and fifty millionth of an inch. When this range is extended to include ultraviolet rays of shorter wave lengths, greater protection against the disease is obtained.

Their work also showed that when the treatment combines ultraviolet rays and infrared rays, the curative or protective action of the ultraviolet rays is interfered with. If the infrared rays are given immediately after the ultraviolet rays, the interference is greater than when the infrared rays are given first. This part of the work corroborates earlier reports, they stated.

Science News Letter, November 1, 1930