

SEISMOLOGY

Quakes 31 Miles Deep

THE EARTHQUAKES in Chile extended 31 or more miles below the surface of the earth, seismologists at the U. S. Coast and Geodetic Survey believe.

The scientists are now collecting and analyzing data from the quakes. They report 11 major quakes out of a total of about a thousand. They do not expect those to be the last from Chile. After shocks can be expected for several months.

Each quake produces three types of waves that are recorded by seismologists around the world. The primary and secondary waves come through the earth's interior. The third is a surface wave that follows the outside of the earth.

By studying the time intervals between the waves, a seismic expert can calculate the distance of the quake. Reports of the seismic waves also help determine quake depth.

Quakes can be several hundred miles deep. Shallow quakes, however, are only about 15 miles deep.

Chile is in a particularly bad part of the Pacific earthquake belt, which rims the Pacific and runs through Japan, the Philippines, Alaska and the West Coast of North America.

In 1922, 1928 and 1939, Chile experienced earthquakes of magnitudes nearly as great as the biggest of the recent series.

Science News Letter, June 18, 1960

Additional Quakes

A NEW major earthquake rocked disaster-hit southern Chile June 6, the U. S. Coast and Geodetic Survey reported.

The Chile quake registered in Washington, D. C., at 6:08, Greenwich time. The Survey reported authorities in Santiago said

the quake was of the seventh magnitude.

Two quakes hitting off California's coast on June 3 and June 5 had no direct connection with the earthquakes in Chile. They occurred in the Cape Mendocino Escarpment, an underwater mountain ridge that heads out into the Pacific Ocean from Eureka, Calif.

The first California quake struck on June 4 at 2:33, Greenwich time. The second one hit on June 6 at 001:25, Greenwich time, at 40 degrees north and 126.5 degrees west, about 120 miles out in the ocean. It had an estimated magnitude of six, or about as strong as the quakes in North Africa and Iran earlier this year.

However, although thousands of people were killed in the quakes in Africa and Iran, no casualties or damage are reported from the quakes off California as they happened at sea.

Science News Letter, June 18, 1960

ASTRONOMY

Red Nova Over Chile On Eve of Earthquakes

JUST BEFORE the series of devastating earthquakes hit Chile, astronomers there discovered a nova of fifth magnitude, visible to the unaided eye but too far south to be seen from the United States.

The nova is red in color and is located near the third magnitude star Gamma in the constellation of Triangulum Australe.

A nova is a star that suddenly increases in brightness and then fades back into obscurity. It may brighten in a matter of a few days, then fade to magnitude 15 or 16 during a period of one to two years.

Science News Letter, June 18, 1960

ENTOMOLOGY

Termites May Be Hardy

NORTHERN home owners may be in for one of the plights of their southern counterparts—namely, termites.

Entomologists at the University of Wisconsin suspect that termites may be undergoing evolutionary changes resulting in a winter-hardy relative of the traditionally southern pest.

With the number of northern areas reporting an increasing amount of termites, T. C. Allen, R. D. Shenefelt and G. R. Esenther are cooperating with the U.S. Forest Products Laboratory at Madison, Wis., in studies to determine why the termites are this far north and if they can develop winter tolerance.

There is still no definite answer, but there is evidence that termites can become cold-hardy, the first time such an occurrence has been observed for insects of this class.

Termites collected during the summer, they report, entered "cold stupor" or im-

obilized sleep at 38 degrees Fahrenheit. But those the researchers collected in late August and September survived temperatures near 38 degrees for almost two months longer than those collected earlier in the summer.

The entomologists are also relating winter soil temperatures to termite survival and have found living termites in December, most of which were in the upper six inches of soil—the same depth as the frost line.

A good clean-up campaign may be the best control against these invaders, the researchers report. They advise people in infested areas to clean up wood and paper debris, and to remove wood from buildings, sheds and garages where it is in contact with the earth.

Termites behave differently from other insects. They eat wood for its cellulose content, so they attack books as well as fence posts and building materials. Protozoa live

in their intestines and help digest the cellulose, being kept well fed and moist by the host termites.

Such a system of mutual existence is termed symbiosis.

Science News Letter, June 18, 1960

MEDICINE

Check-ups Urged During Treatment for Fungus

GRISEOFULVIN, an oral antibiotic for combating superficial fungus infections, is discussed in the May issue of the American Medical Association's Archives of Dermatology 81:760, 841, 1960. The issue reports on investigators in 11 countries.

A dermatology professor at the University of Mexico wrote that "deep mycoses (or fungus diseases) are frequent in Mexico and that griseofulvin had been in use soon after the first reports of the success of the drug for humans before the end of 1958."

In the Mexican study carried on since January, 1959, Dr. F. Latapi found that results were good in several cases of sporotrichosis and mycetoma, the two deep fungus diseases encountered most frequently in Mexico.

Dr. Latapi did not recommend griseofulvin as a practical substitute for potassium iodide therapy in sporotrichosis in every case.

In the case of mycetoma, advanced bone involvement did not respond well, and in the treatment of chromoblastomycosis, the most superficial of the deep mycoses, the results seem poor.

Five Detroit doctors reported good effects of prolonged administration of griseofulvin on the liver and kidneys as well as on the blood cells.

Drs. Clarence S. Livingood, Mac Brannen, Richard L. Orders, Jerome B. Kopstein and John W. Rebeck recommended that "urinalysis should be done routinely before griseofulvin therapy is instituted," and that during treatment, reports should be made at three- to four-week intervals.

Although the reactions of patients were generally good, some of the reports warned that there may be possible increased resistance to griseofulvin by the fungi after continued treatment.

Science News Letter, June 18, 1960

MEDICINE

X-Ray Help Eliminate Dwarf Strain in Cattle

VETERINARIANS FROM Pennsylvania State University have X-rayed the backbones of 300 Purebred Hereford calves on the Falklands Farms to weed dwarfs from the herd.

The veterinarians have found that if the X-ray shows the last four or five thoracic vertebrae, located at the base of the spine are compressed, the calf will be a dwarf or a carrier of the dwarf gene.

Thus, by separating these animals from the rest of the herd, stock owners hope to eliminate dwarf strains entirely and assure higher beef production.

Science News Letter, June 18, 1960

Questions

MEDICINE—How many volunteers received live polio vaccine in the Miami area? p. 387.

METEOROLOGY—What is the average maximum temperature in San Francisco in July? p. 395.

ROCKETS AND MISSILES—What was the most important electronic development for the Echo satellite? p. 391.

Photographs: Cover, U. S. Army; p. 387, Chatham Electronics of Tung-Sol Electric Inc.; p. 391, National Aeronautics and Space Administration; p. 394, European Organization for Nuclear Research; p. 395, Brookhaven National Laboratory; p. 400, Franklin Metal and Rubber Co.

Do You Know

The death rate from all *communicable diseases* in the U.S. declined 75% between the five-year period ending in 1934 and the four-year period ending in 1958.

A small electronic *tube* called the Astracon is so sensitive that it makes visible to the eye every individual elementary particle of light that triggers its ultra-sensitive input, making it the near ultimate of light amplification.

CIVIL ENGINEERING

Highway Research Urged By Research Board

A \$34,000,000 national program of highway research has been recommended by a unit of the National Academy of Sciences-National Research Council. The program would run for four to five years. The Highway Research Board's report suggests research might show that nuclear energy could be practically used to turn inexpensive clay into useful highway materials.

Science News Letter, June 18, 1960

AERONAUTICS

Jet Engine Could Go 2,000 Miles Per Hour

A TYPE of jet engine to power military and commercial transport aircraft at speeds up to 2,000 miles an hour can be built whenever it is needed, a subcommittee of the House Science and Astronautics Committee has been told. J. B. Montgomery, general manager of General Electric Company's flight propulsion division, said the new engine would burn fuel in the exhaust of a fan mounted directly behind the basic jet engine.

Science News Letter, June 18, 1960

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