

SCIENCE NEWS

THE CALIFORNIA EARTHQUAKE

Science Service

To scientists in Washington the earthquake that shook southern California on the night of July 14 was not unexpected.

Because of the faults in the earth's crust near San Bernardino, Dr. Arthur L. Day, chairman of the advisory committee in seismology of the Carnegie Institution of Washington, stated that that region was known to have acquired strains in its crust that needed the sort of relief that an earthquake provides.

The famous San Andreas rift, which extends for six hundred miles through the Coast Ranges of California, runs about five miles northeast of San Bernardino. This same slipping plane runs through San Francisco and it is along this fault that the great quake of 1906 occurred. That famous earth movement covered a stretch of about 150 miles with San Francisco in the middle.

"South of that stretch for about 300 miles there has been no movement since 1857 when there was a severe shock, the mark of which may be traced across the desert plains like an irrigation ditch," Professor Bailey Willis, California earthquake expert, who is now returning to America after making a study of the Chile earthquake of last year, said in a Science Service statement in January last. Still further south there have been several recent shocks, but none of great violence. In the same statement Professor Willis said that "there is evidence of considerable activity in the section east and south of Los Angeles." This corresponds to the region that has just suffered a shock.

The map of California earthquake conditions soon to be published by the Seismological Society of America shows another active fault in the earth's crust just southwest of San Bernardino.

The Coast and Geodetic Survey is making precise maps of California which will aid in the prediction of these natural occurrences, but their surveys have been confined so far to the northern part of the state. Scientists connected with the Carnegie Institution, Stanford University and other institutions are also working on the problem.

Other shocks in the same area are to be expected, according to Professor W. J. Humphreys, seismologic expert of the U. S. Weather Bureau, although they will probably not be so violent as the first shock. A series of slight disturbances following the initial quake is the general rule.

A NEW MINOR PLANET

Science Service

A NEW member of the solar system, an asteroid, has been discovered by Professor George H. Peters, of the U. S. Naval Observatory. He occasionally finds such small planets on his photographic plates as a by-product of his regular observations. But the one that Professor Peters has just announced is extraordinary in that it is

very close to Edburga 413, an asteroid previously known and whose return to visibility was predicted by computations. Both Edburga and the newcomer are about the same magnitude, a little more than 12, and have approximately similar apparent motions. Only the telescope can detect them; they are found by their motions in the sky with respect to the fixed stars.

"I am not quite sure of the identifications," Professor Peters stated. Only additional observations over a considerable period will settle the question of which is which on account of the similarity of motion and brightness. One of them is Edburga; the other can not be found listed in any of the catalogues and Professor Peters believes it to be a part of the heavens previously uncharted.

The coincidence of two minor planets so alike and so near each other he characterized as very remarkable. For twenty years he has been observing and discovering asteroids and this is the first case of apparent duplicity that he has discovered.

The discovery was made on the photographic plates of the heavens that Professor Peters takes with the 10-inch refractor telescope of the Naval Observatory.

In December, Professor Peters found another tiny planet that had been "lost" for fifty years. Its name was Aethra 132 and it was last seen in 1873 by its discoverer, Professor J. C. Watson, of the University of Michigan.

The Indians that once roamed the city of Washington were remembered by Professor Peters when he named an asteroid discovered by him on November 21, 1921, with the old tribal name of Anacostia. The new planet just discovered is still too young to be named, Professor Peters believes.

Both of these asteroids now under observation by Professor Peters are believed to be about twenty-five miles in diameter and they shine by reflected light similarly to the larger members of the planet family. They are twirling around the sun in orbits that lie between Mars and Jupiter.

HEALTH RECORD FOR 1923

Science Service

THE general health record during the first half of 1923 was more than satisfactory, Dr. Louis I. Dublin, statistician of the Metropolitan Life Insurance Company, reports. Following a most unpromising beginning, chargeable wholly to the influenza outbreak of the early months of the year, a consistent improvement has since been in evidence. At the end of the half year, the death rate of the millions of white policy holders of the Metropolitan Life Insurance Company was only one third of one per cent. in excess of that for the corresponding period of 1922. For the colored policy holders, the increase was 4.2 per cent. These small differences are very encouraging, coming as they have in the face of high influenza-pneumonia mortality during the first three months. The

excellent health record of the second quarter has almost wiped out the adverse margins that were in evidence three months ago.

"The best feature of the health record of 1923, to date, is the continued improvement in the tuberculosis death rate. Almost beyond peradventure, a new minimum will be recorded this year in the mortality from tuberculous disease. The continuous decline (except for a single year) that has been observed since 1911 is still going on.

"Another encouraging item of the 1923 health record is a decline in the mortality from cancer. This has been considerable among the white policy holders and there has been a slight drop among the colored."

The mortality from diseases incidental to pregnancy and child birth has shown pronounced improvement, and if the present favorable record is maintained throughout the year, the death rate for these diseases will be lower than for any year since 1917.

Two of the four principal communicable diseases of children—diphtheria and scarlet fever—registered lower death rates than for the first half of last year, according to Dr. Dublin's figures. The drop in the diphtheria rate was considerable and unless there are very unfavorable developments later in the year, the 1923 mortality from this disease will be the lowest ever recorded among Metropolitan Industrial policy holders. Measles and whooping cough, particularly the former, are causing many more deaths than during the first half of 1922. The measles rate has more than doubled among white policy holders and among the colored it was almost six times as high as for the first half of last year. An unusual item in this year's record is the very high measles death rate among colored policy holders. Ordinarily, mortality from this disease among colored children is less than that for white children; but this year the difference is very small.

The record of the half-year for accidental deaths compares unfavorably with the figures for the corresponding periods of 1922 and 1921. Substantial increases are in evidence for both white and colored persons. Automobile fatalities have increased materially.

A HELIUM AIRSHIP

Science Service

ZR-1, the all-American giant helium airship now ninety-nine per cent. complete, will be launched at Lakehurst, N. J., in August and used to test the commercial practicability of big lighter-than-air craft in this country, according to Rear Admiral W. A. Moffett, chief of the U. S. Navy's Bureau of Aeronautics. On August 1 about three weeks of exhaustive structural testing of this levitation of the skies will be begun inside the hangar, after which a series of actual flight tests of progressively greater length will be undertaken preparatory to an air voyage to the North Pole early next year.

The helium to be used as the lifting power for the big dirigible is already on hand, and preparations for the official launching are rapidly going forward. Mrs. Edwin Denby, wife of the secretary of the navy, will christen the new ship.

Every precaution is being taken to insure the maximum possible safety and efficiency of the ZR-1 and accurate cost records of its flights under various loads are to be made with a view to determining the commercial possibilities of this type of aircraft.

The navy may in this way be able to aid in the establishment of a new method of air travel. The military use of the big airship will be as a scout for operation with the service battleship fleet.

The ZR-1 is 680 feet long, 79 feet high, and has twenty gas cells with a total capacity of 2,115,000 cubic feet of gas and a gross lifting power, with helium, of 120,000 pounds. The cruising range is 4,000 miles. Its six 300 horsepower engines can drive it at a maximum speed of 75 miles an hour or 65 miles an hour cruising speed. These six engines are located in six power cars, four of which are located amidship; two on each side of the car. One is in the midline aft, and one is located in the control car in the forward part of the ship.

In this control car are located the rudder control and other instruments used in navigating the ship, while a telephone system connects it with the other cars and parts of the ship.

The mess, bunks and living quarters for the crew of thirty men are on a platform laid on the keel and inside the duralumin metal frame which gives rigidity to the ship. The gasoline storage tanks are also located along the walkway which runs for 600 feet along the keel.

There are two observation platforms on the top of the ship, access to which is by means of ladders and hatchways running up through the center of the ship. In the bow is a mooring device with cable by which the giant dirigible can be moored to a mast.

The framework is of duralumin metal, the twenty cells for the lifting gas are made of goldbeaters' skins, while the outer envelope of the airship is made of cotton fabric doped with a special preparation to resist weathering.

The hangar which now houses the ZR-1 at Lakehurst is so large that the U. S. Capitol could be placed entirely inside with the exception of eighty feet of the dome which would project above the roof.

ITEMS

Science Service

A NEW sweet cherry which ripens from a week to ten days earlier than any cherry now grown has been evolved at the New York Agricultural Experiment Station.

By reclamation and the planting of pine in the southern part of the west coast of France, the French government has in seventy-five years converted an unhealthy waste of sand and swamp into a health resort visited by 200,000 people a year.

PLANS for the development of the French telephone service, involving an expenditure for new equipment of 200,000,000 francs a year for ten years, are under consideration by the French government.

AN epidemic of influenza among Eskimos in the Cape York district of northwest Greenland last year caused such a heavy mortality that it is now impossible to start an exploring expedition from that base.