In some instances the sand is given the sodium sulphate test to learn its ability to stand weathering. In this test crystallization of the sodium sulphate when evaporated exerts pressure within the grains of sand. If this pressure breaks up the sand particles, it is evidence that the sand would not hold up, under freezing and thawing and other weather hazards, if mixed in concrete.

Finally the sand may be subjected to strength tests by being made up into cement mortar and tested for both compression and tensile strength.

This knowledge is extremely valuable to the construction industry because it serves as a guide to the best sources of supply of sand for important building projects in which concrete is used.

It is often desirable to use local sand, and the information in the sand library tells whether such sand is suitable.

Science News Letter, September 21, 1935

PUBLIC HEALTH

Pneumonic Plague Threatens U. S., Especially West Coast

Danger Arises From Increasing Spread of Plague Among Ground Squirrels; Only One Human Case

PNEUMONIC plague is an increasing threat in the United States, particularly to the Pacific coast states.

The most extensive outbreak of plague among ground squirrels since the peak of the animal epidemic in California between 1907 and 1919 is being experienced on the west coast. Recent reports also show the presence of rodent plague in Montana.

This disturbing picture is presented by Dr. W. H. Kellogg, chief of the division of laboratories of the California State Department of Public Health, Berkeley. (*Journal, American Medical Association,* Sept. 14).

"There are two particularly disturbing aspects of the present ground squirrel epizootic," Dr. Kellogg declares. "One is the demonstration that the ground squirrel infection not only is not decreasing after thirty years, but is increasing and expanding over a much wider territory. It is now found not only in the Coast Range and the interior valleys of California but in the Sierras. The establishment of a permanent endemic rodent focus is thus thoroughly demonstrated."

The second cause for alarm, as viewed by Dr. Kellogg, is the evidence of renewed virulence and of increasing pulmonary tendency on the part of the prevailing strain of the plague-causing organism. The pneumonic plague—more deadly to man than the bubonic—is thought to be directly related to the plague in squirrels and groundhogs.

A plague survey crew, operating with a motor truck, is busy in California. The workers find that the disease is actively spreading among rodents in widely separated areas far from any formerly known focus of infection.

Redoubled efforts are being made by the U. S. Public Health Service to protect the human population from this dreaded disease and to check its extent among rodents. Protection of the human population has been almost 100 per cent. successful. So far only one case of plague has been reported this year and there were none in the United States last year.

Dr. C. R. Eskey, who has had an extensive experience in anti-plague work in South America and Hawaii, has been put in charge of the anti-plague operations on the West Coast. Assisting him is Dr. V. A. Haas, also of the U. S. Public Health Service. Formerly only one Service officer was assigned to this work.

The U. S. Public Health Service has been attempting to combat the extension of plague among the rodents in California ever since 1900, when its existence there was first recognized. Inadequate funds have always seriously handicapped the Service in this work, however.

Epidemics of plague among man result when the infection spreads from rat to rat or from squirrel to squirrel through the medium of the flea bite.

Pneumonic plague, in which pneumonia develops, becomes highly infectious from man to man without the mediation of rat, squirrel or flea because the bacilli are in the sputum and transfer takes place by droplet infection, it is explained.

The death rate from pneumonic plague is very high, almost 100 per cent., according to Dr. Kellogg. The illness is short—from a few hours to two or three days.

Science News Letter, September 21, 1935

SEISMOLOGY

Center of Earthquake Was Near to Northern Japan

KUNASHIRI Island, near the northern end of the Japanese chain, was close to the epicenter of an earthquake of rather marked severity on the morning of Wednesday, Sept. 11, according to calculations of the U. S. Coast and Geodetic Survey, based on data transmitted telegraphically through Science Service. There is a possibility that the disturbance may have stirred up a tidal wave.

The epicenter was located in latitude 45 degrees north, longitude 146 degrees east, approximately. The earthquake began at 9:04.1 A.M., Eastern Standard Time.

Reports were sent to Science Service by the Dominion Meteorological Observatory, Victoria, B. C.; the Seismological Laboratory, Pasadena, Calif.; the University of California, Berkeley, Calif.; St. Louis University, St. Louis, Mo.; and the stations of the U. S. Coast and Geodetic Survey at Ukiah, Calif., and Tucson, Ariz.

Science News Letter, September 21, 1935

The tulip tree was made the state tree of Indiana, in 1931.