

## ● Earth Trembles

Information collected by Science Service from seismological observatories and relayed to the U. S. Coast and Geodetic Survey resulted in the location of the following preliminary epicenters:

Friday, June 10, 1:06 p. m., E.S.T.

On coast of the state of Oaxaca, Mexico. Latitude 16.4 degrees north, longitude 98 degrees west.

Wednesday, June 15, 2:43.8 a. m., E. S. T.

Off the coast of central Chile; a fairly strong shock. Latitude 31 degrees south, longitude 72 degrees west.

Thursday, June 16, 10:15.2 a. m., Manila Time  
Near southern Japanese islands; a strong shock. Latitude 27 degrees north, longitude 127 degrees east.

For stations cooperating with Science Service in reporting earthquakes recorded on their seismographs see SNL May 21.

folders on a shelf, or in a large flat box, for permanent keeping.

Plants should be as newly picked as possible when they are put into the folders for pressing. They will then lie more naturally, and make better-looking specimens. Wilted plants are harder to arrange, and don't look well after they are pressed. If the plant is not too big it should be whole, including both flowers and at least part of the root. If necessary, bend the stem to make it fit into the folder.

While you can make your pressing equipment out of materials that don't cost you a cent, as we have seen, there is one item you should get if you can possibly scrape up the money. That is a good magnifying glass. Not the big kind with a handle, which old people use for reading fine print, but the smaller kind with two lenses at opposite ends of a cylinder, that swings into a frame to protect it when not in use. This kind of magnifier is called a doublet.

Every boy and girl should carry a doublet magnifier, just as he (or she) should have a pocket-knife. These lenses are highly useful not only for examining the fine hairs, veins, etc., on plants, but for looking at a thousand other things. With a doublet you open up a whole new world in your everyday surroundings, that you have never before seen.

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apparently interested first in what we now known as protozoa, one-celled primitive animals, for he devotes a great deal of space to descriptions of their appearance and behavior. They are larger and livelier than bacteria, and therefore easier to observe. But that he saw bacteria there is no doubt.

On the third page of the letter to

the Royal Society, he describes the gradual disappearance of a certain kind of microscopic animals over a period of about two weeks. But as the first animalcules dwindled in numbers he notes the appearance of smaller creatures: "I now saw some few animalcules, so small that even through my microscope they almost eluded the eye. And I stopped my observations."

To this, Dr. Cohen appends the remark, "Bacteria, together with protozoa, are doubtless referred to here."

A little further along, describing what he saw in water in which he had soaked some whole peppercorns, Leeuwenhoek writes more in detail.

"The fourth sort of animalcules, which floated about amongst the other three sorts, were incredibly small; indeed, so small, in my sight, that I judged if all 100 of these very small animalcules were stretched out against one another, they would not reach the length of a coarse sand-grain. This being true, then ten hundred thousand of these living creatures should not be able to fill the volume of a coarse sand-grain.

"I discovered yet a fifth sort which had about the thickness of the last-mentioned animalcules, and which were about twice as long."

These "animalcules," Dr. Cohen notes, were "evidently bacteria."

In this very simple language, then, is recorded a hobbyist's discovery of a class of organisms that play vastly important roles in human sickness and health, in farming and industry—invisibly small yet potently great lives that determine the way the whole world runs.

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### METEOROLOGY

## Weathermen Should Make Greater Use of Clouds

See Front Cover

**W**EATHERMEN are commonly supposed to go out on the roof, take a look at the clouds, and come back in to tell us what the weather's going to be tomorrow. But really they don't use clouds nearly as much as they should, Prof. Charles F. Brooks of Harvard University indicated before the meeting of the American Meteorological Society.

Forecasters in the United States, excepting only the ones on the Pacific Coast, have the advantage of having a whole continent at their backs, with a good telegraphic network to let them

know where storms are and in what direction they are moving, Prof. Brooks said. Hence they depend very much on this "synoptic" service and tend to neglect the cloud-watching that would help them to improve their score of correct forecasts.

Local weather-watchers base their forecasts almost entirely on their knowledge of cloud behavior, Prof. Brooks pointed out. With sufficient experience, such an observer can make forecasts for from six to twelve hours ahead with better success than a meteorologist who depends entirely on telegraphic reports. But if the meteorologist were to combine a study of the telegrams with judicious cloud-watching he could excel the local weather prophet in both range and accuracy.

Clouds can be useful to students of the weather in other ways, too, Prof. Brooks stated. Their formation and behavior, their direction and rate of travel, can be read by one who has the scientific background in terms of wind direction and velocity, temperature and humidity aloft, and the arrival of polar and tropical air masses.

The illustration on the front cover of this week's SCIENCE NEWS LETTER shows a weather man at Mt. Washington Observatory measuring the rate of travel of the beautiful clouds above him.

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### PSYCHIATRY

## Currents From Eyes May Aid Study of Brain Ills

**M**INIATURE electric currents that accompany eye movements can be "tapped," amplified and used to aid in the study of certain abnormal brain conditions by a new method reported by Dr. Ward C. Halstead, staff member of the Otho S. A. Sprague Memorial Institute in the division of psychiatry of the University of Chicago Clinics.

Location of brain lesions, which has been facilitated previously by the tapping of the electric currents from the brain itself, known popularly as brain waves, may also be aided by the study of the eye currents, it is hoped.

The new method is especially adapted to the study of mental disease patients, Dr. Halstead said (*Journal of Psychology*) because with it reliable records can be obtained while the subject is walking about. Records can also be made when the patient's eyes are closed, and an attempt will be made later to measure eye movements in this way while the subject is asleep.

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