



WAITING FOR EARTHQUAKES

SEISMOLOGY

Seismographs Set for Spot Records of Coming Quakes

Automatic Instruments in Vital Locations Expected to Bring Valuable Records Through Next Great Disturbance

THE NEXT great earthquake to visit the United States will very likely write its own record of destruction and leave this story intact so that engineers may study it and learn how to build better shock-resistant structures.

For the U. S. Coast and Geodetic Survey is installing in regions where strong earthquakes have occurred, automatic seismographs which are designed to "sleep" until a severe quake comes, for years if necessary; but which, when aroused by impending disaster, will spring to life by recording the shock and by ringing a bell to give notice of their action.

The installation of this equipment was announced by Director R. S. Patton of the Coast and Geodetic Survey. Some of the instruments are being set up in those parts of California where severe earthquakes have been felt during the past 75 years.

Permanent Instruments Damaged

Architects, builders and seismologists hope to get exact measurements of earth movement which cause material destruction. There is very little information of this kind in existence now for, when shocks become violent, seismographs at permanent observatories in the earthquake area are rendered inoperative and sometimes badly damaged. But the new apparatus is rugged and, not being very sensitive, will not begin to operate until those in larger observa-

tories are helpless. Even though some of the instruments be destroyed by a big shock, enough should survive to give valuable records. They are being set up in basements of buildings, on bridge piers and in other vital locations.

The automatic features of the instruments which permit them to remain at

ETHNOLOGY

Black Magic of Witchcraft Reappears in England

By E. N. FALLAIZE

BLACK magic is increasingly apparent in certain sections of European society.

A remarkable fortune-telling case has been tried in one of the courts of law in Yorkshire, England; and a woman fortune-teller has been convicted and condemned to eighteen months imprisonment for defrauding two spinster sisters of \$1500 by promising to bring before them their future husbands and hold the men until they married the two sisters.

The methods employed were unusual in modern fortune-telling and in many respects are more like a survival of the

rest and instantly spring into full action when necessary are of great interest to scientists, Capt. N. H. Heck, who is in charge of the Coast and Geodetic Survey's seismological work, explained. He said that seismologists have attempted to accomplish this from the earliest days of scientific interest in earthquakes but the present apparatus is the first in which it has been successfully done.

Three Kinds

Three kinds of instruments are being used. That which will yield the most important information is the accelerometer, recorder of the violence of an earthquake. It was designed by Dr. Frank S. Wenner of the U. S. Bureau of Standards. The actual distance through which the earth sways and the speed of the sway will be measured by a displacement meter which, together with special recording apparatus, was designed by scientists of the Coast and Geodetic Survey.

A third instrument, that gives less complete information but weighs only 15 pounds and need not be kept in the dark as is necessary with the others, is the Weed strong motion seismograph developed by Arthur J. Weed of the University of Virginia. It is comparatively inexpensive.

M. W. Braunlich of Massachusetts Institute of Technology made the starting devices for the three types of apparatus.

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methods of the ancient soothsayer or the mediaeval witch. They remind us of the witches of Macbeth with their smoking magic cauldrons. For among the devices of this fortune-teller were the magic ointment with which the witch anointed herself and others, the love charm which bound the lover, and the smoke serving as the magic mirror in which were to appear the visions of persons and events belonging to the future.

The principal ingredient in this case was a magical preparation called "zep" for which the sisters were induced to pay out large sums of money. Ancient witches made their ointment chiefly with the fat of young dead babies whose bodies they had dug up. "Zep," however,