have been rated higher. The three greatest shocks, listed as 8.5 on Dr. Gutenberg's scale, were on the border between Ecuador and Colombia in South America in 1906, in China in 1920 and in Chile in 1922. The Jap quake in 1923 was rated 8.0.

Dr. Gutenberg's rating system, regarded by many seismologists as the most accurate, is the only scale measuring the intensity of the earth's tremors by instruments. It uses the amplitude of a quake's motion as recorded on a seismograph to rate the shock, and a Gutenberg figure of 7.5 will be a tremor big enough to wreck any city. Higher numbers are based on the extent of the quake.

Tremor on Aug. 8 that raised the toll from the quakes was one of more than 150 aftershocks recorded after the first big tremor. These following quakes may continue a month or several months more with varying intensity, seismologists declare. While not looking for any more as big as those already recorded, the earthquake authorities say that these "hangover" tremors are unpredictable.

The longest period of aftershocks ever recorded was for the quake at Helena, Mont., in 1935 that was followed by tremors for a full year.

Emphasizing that location is the all-important factor in the toll from quakes, seismologists say that the West Indies disturbance killed relatively few people because the epicenter of the shock was approximately ten miles at sea. The area affected was not densely populated and the many flimsy buildings helped keep the death list relatively small for an earth-rocking of that magnitude.

Among modern earthquakes, the Chinese shocks in 1920 claimed 180,000 lives for the highest fatalities, but China's historians have recorded a quake in 1556 with an estimated 830,000 deaths.

Science News Letter, August 24, 1946

ENGINEERING

Shielded from Electricity

➤ SHIELDED buildings to protect delicate electrical experiments and tests inside from electrical influence without are not new, but in two under construction unique methods are employed.

One is a Navy hangar, a $2,000,000 project just started at Patuxent River, Md., to provide facilities for delicate tests on radar and other electronic devices installed in aircraft.

The other is a group of laboratory buildings, some completed and others under construction at Nutley, N. J., in which the Federal Telephone and Radio Corporation will conduct experiments in television, frequency modulated broadcasting, aerial navigation and radar. Their shielding walls are designed to protect against atmospheric electricity.

In the Navy hangar, fine mesh wire will be used as a shield. It will be one-eighth inch galvanized mesh wire, installed around the entire hangar in such a manner as to prevent any breaks in its continuity. Two layers of wire mesh will be laid in the concrete floor.

Wire mesh is used in this building, instead of solid sheets of galvanized steel or copper, because it is cheaper and will permit ventilation and light, while at the same time opposing passage of electronic disturbances.

In the Nutley building, the walls are made of prefabricated panels made up of flat sheets of aluminum and fluted sheets of steel, with an inch-and-a-half layer of glass fiber between. The glass is an inert, dielectric material that prevents electrolytic action between the two metals and also acts as insulation to keep heat within the building.

The steel sub-floors of the buildings are also made of prefabricated panels with a cellular structure, over which a lightweight concrete fill is poured. The cells provide runways for electric cables to furnish power within the building where needed.

Science News Letter, August 24, 1946

BIOLOGY

System Similar to Radar Not New to Bats

See Front Cover

➤ BATS USE the thin, tough membrane that forms their wings not only to fly, but to catch food and locate obstacles.

Most species of bats, except the large fruiteaters, make a collecting net of the membrane, doubling it up like an apron. The bat then deftly removes the insects upon which it feeds with its strong teeth or flies to a nearby tree where it can manage the larger victims, states Richard Headstrom of Boston, Mass.

The picture on the front cover of this SCIENCE NEWS LETTER, by George A. Smith, Quarryville, Pa., shows a brown bat with his wings not quite folded out of sight.

Bats, unjustly abhorred by many superstitious people, detect obstacles in their path by an echo system somewhat similar to that of radar. They emit supersonic notes that are reflected by the obstacle. The membrane which serves as wings is equipped with sensitive nerves that apparently respond to the reflected sound waves and help locate the source.

Bats, true mammals with the habits of birds, are not at all fitted for walking. Their hind legs are twisted around so that their knees bend backward, in the

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