



AUTO CRASH DUMMY — This artificial figure has been developed at Cornell Aeronautical Laboratory to simulate how human bodies react in automobile crashes.

TECHNOLOGY

Brain Waves and Movies

➤ A PRACTICAL device for getting a brain wave record and moving picture of a patient on the same film was announced by Drs. Robert S. Schwab, Mack W. Schwab, Donald Withee and Young Chew Chock of Boston at the Third International Congress of Electroencephalography and Clinical Neurology in Boston.

With both brain wave record and movie of the patient on the same film, doctors can study the relation "of electrical events and bodily movements," the doctors pointed out.

The difficulty in doing this is that the brain wave, or EEG, tracing covers a field of six by eight inches, while the head and shoulders of a patient cover a field of 30 by 30 inches. For the eye to correlate the EEG with the bodily movements, the two fields should be of the same size.

This means the EEG record must be about two and a half feet from the camera lens and the patient eight feet from it. The terrific light intensity (200 units) necessary for such a depth of focus calls for a stop of *f* 22 and would burn the patient.

Numerous methods of solving the difficulty, including use of two television cameras, have been tried. Most of them are apparently too complicated or expensive or both to be practical.

The Boston doctors solved the problem by using a prism lens splitter and first surface mirrors with an adjustable auxiliary lens of four diopters for short EEG side of the picture. Both the patient at eight feet

SEISMOLOGY

Spot Weather Changes

➤ A COLD front sweeping across the Great Lakes can be spotted by seismographs in New York in "a matter of minutes," Father J. Joseph Lynch, S.J., of Fordham University, New York, has found.

Microseisms that travel about half a mile a second are the clue to changes in Great Lakes' weather detected in New York. Seismographs can pick up not only great, earth-jarring quakes, but also tiny quivers of the earth's surface. These are known as microseisms. Heavy trucks rolling down a highway can cause them. So can storms and hurricanes over the ocean. Scientists are now learning to use microseisms to spot and track such storms.

When micro-quake recording instruments in New York started picking up inland as well as Atlantic Coast sources for these microseisms, Father Lynch and Father Edward Berry, S.J., set out to find the cause.

From a station at West Park, N. Y., they eliminated the Hudson River as a possible source. Then from Hot Springs, N. C., they found that the microseisms were com-

ing from almost due north, thus confirming their suspicion that Lake Erie was responsible.

They believe that when a cold front moves over the Great Lakes, the weather disturbance causes waves in the water. These waves, when they hit the shore and bounce back, interfere with other oncoming waves, thus producing what are called "standing waves." Such standing waves pound on the lake bed to give rise to tiny vibrations that travel through the ground with a speed of about half a mile a second, Fathers Lynch and Berry conclude.

Science News Letter, August 29, 1953

ASTRONOMY

Red Stars May Be Youngest in Universe

➤ EXTREMELY RED stars in the Large Cloud of Magellan may be the youngest stars in that galaxy—only two to three million years old.

They were detected by Mrs. Virginia McKibben Nail and Dr. Harlow Shapley of Harvard College Observatory during a survey of the superluminous and supergigantic stars in the Large Cloud system, the nearest galaxy to our own Milky Way. Their discovery is reported in the *Proceedings of the National Academy of Sciences* (May).

These extremely red stars are found in five constellations, counterparts in another galaxy to one we see in the wintertime sky, Orion, the hunter.

Except for the few red stars the astronomers detected, these extra-galactic constellations are composed mostly of supergiant blue stars, 10,000 times as bright as the sun.

Science News Letter, August 29, 1953

and the EEG record at one and a half feet are in sharp focus with an opening as low as *f* 5.6, so light requirements are average. The unit can be set up in a few minutes. No synchronizing signals are needed. The device can fit any camera.

Science News Letter, August 29, 1953

Questions

ASTRONOMY — When does fall begin officially? p. 138. . . .

ECOLOGY—What chemicals increase the numbers of sheep that can be grazed per acre? p. 137. . . .

GEOPHYSICS—How is the start of a new sunspot cycle discovered? p. 141. . . .

MEDICINE — Why should polio patients be tested for muscle weakness quite a while after their discharge? p. 136. . . .

SEISMOLOGY—What causes earthquake aftershocks? p. 137. . . .

SURGERY—What is the advantage of cooling patients prior to operations? p. 134. . . .

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