



PILOT PLANT—The Northern Regional Research Laboratory of the U. S. Department of Agriculture at Peoria, Ill., tests on a semi-commercial scale new processes for making alcohol from various farm products.

SEISMOLOGY-OCEANOGRAPHY

Sea Wave Prediction

Alarmists frightened coastal dwellers in the region of a recent submarine earthquake, although seawaves cannot be forecast from earthquake data alone.

➤ **NEEDLESS** fears, and hurried abandonment of their homes by seacoast dwellers in Hawaii, were caused by "scare" reports that a big sea wave, similar to the one that drowned 140 people last April 2, was sweeping down the North Pacific from the Aleutian islands on Nov. 1, following the occurrence of a severe submarine earthquake in that region.

Destructive sea waves start from submarine earthquakes, but not every such earthquake starts a sea wave. It is therefore impossible to predict such waves simply from the occurrence of submarine quakes.

Despite the chanciness of forecasting sea waves on the basis of earthquake data alone, seismologists of the U. S. Coast and Geodetic Survey did venture a qualified prediction as soon as they saw the trace of the Aleutian disturbance on their seismograph. They said: first, there might be no wave at all; second, if a wave did reach Hawaii it would probably not be at all severe.

Somewhere along the line of transmission, this very conservative statement got blown up into major-alarm proportions. At the predicted hour, watchers on the Hawaiian coast observed a very modest rise in the ocean, but no disaster

bearing wave such as they had been led to expect. It was very close to what the scientists in Washington had said might happen.

The seismologists, in the meantime, went ahead and made a "fix" of the epicenter, on the basis of data gathered telegraphically from nine seismological stations reporting through Science Service. The quake centered under the sea south of Atka island in the Aleutians. This is a point about 450 miles southwest of the epicenter of the disaster-causing earthquake of April 2.

It was a severe disturbance. On the Gutenberg scale of 10 for the most violent quakes, it rated 7.25. The April 2 earthquake rated 7.5, only a little more severe.

Observatories reporting were those of the California Institute of Technology, Pasadena; University of Washington, Seattle; Dominion Observatory at Ottawa; stations of the Jesuit Seismological Association at St. Louis University, Georgetown University, Xavier University in Cincinnati and Springhill College in Alabama; and the stations of the U. S. Coast and Geodetic Survey in Tucson, Ariz., and Washington, D. C.

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ENGINEERING

Plant To Produce Alcohol From Farm Waste Products

➤ **MOTOR FUELS** made synthetically from farm wastes have entered production in an experimental plant at Peoria, Ill., of the U. S. Department of Agriculture.

The plant will produce alcohol. It is the Bureau's contribution to the government's research program for producing liquid motor fuels from non-petroleum sources. Production from agricultural products was assigned to Agriculture; production from oil-bearing shale, coal and natural gas is under research by the Bureau of Mines.

The new plant will handle enough farm residues to provide fermentable material for the production of 500 gallons of alcohol daily. At capacity, it will produce 2,000 pounds of glucose in 10% solution, 1,600 pounds of hylose in 15% solution, 200 pounds of furfural, and 1,000 pounds of liquid in eight hours.

The process used in the new plant, for producing fermentable sugars from which the liquid fuels are obtained, is an outgrowth of research at the Northern Regional Research Laboratory of the Department of Agriculture by Drs. E. C. Lathrop and J. W. Dunning. The farm wastes to be used include corncobs, sugarcane bagasse, peanut shells, flax shives, and the hulls of oats, cottonseed, and rice. Grain straw and cornstalks can also be used in the process. They are the waste products that are available in fairly constant quantity each year.

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INVENTION

Hydraulic Jack to Alter Airplane Wing's Camber

➤ **THE OLD** dilemma of the camber of an airplane's wings, which should be thick for takeoff and climbing but thin for speed in flight, has challenged Jacques Fresco of Hollywood, Calif., for patent 2,410,056. His solution is a small hydraulic jack in the cavity of the wing, with ribs radiating from top and bottom to change the wing's shape as the jack is operated.

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If all the land under *irrigation* works built by the U. S. Bureau of Reclamation were lumped together, it would make an area larger than Connecticut and Rhode Island combined.