

METEOROLOGY

Atlantic Hurricane

The recent storm that swept up the eastern coast closely resembled the tropical storm of 1938, but was higher in wind velocity.

► THE HURRICANE which swept up the Atlantic Coast last week resembled in many ways the tropical storm that cut a deadly path over Long Island and New England in September 1938, killing 441 persons and destroying an estimated \$100,000,000 worth of property.

The Weather Bureau stated that this storm had a higher wind than the one in 1938, which caused the barometer to drop much lower as it passed up the coast.

Both storms came at the beginning of the Autumn hurricane season, which is at its height from Sept. 15 to Oct. 15. In both cases the exact origin of the storm is not known, except that they started somewhere in the Atlantic between Florida and Africa. The 1938 hurricane was first reported on Sept. 17 by radio from a ship 600 miles east-northeast of Puerto Rico. The recent storm was first reported on Friday, Sept. 8 at 4:30 p.m. by the San Juan, Puerto Rico, office of the U. S. Weather Bureau. At that time it was just east of the Lesser Antilles moving in a northwesterly direction, at a rate of 10 to 12 miles an hour.

Meteorologists watched both hurricanes approach the Atlantic coast of the United States, head toward Florida, then gradually veer northward towards Cape Hatteras, North Carolina. Both storms made this turn just north of the Bahamas, in a period lasting about 24 hours. Due to the circulation of the upper atmosphere, many hurricane winds turn northward in this general area.

The 1938 hurricane appeared to be turning again after passing Cape Hatteras at 8:30 a.m. on Sept. 21, and the meteorologists hoped that it would lose itself in the North Atlantic. Instead, its center struck Long Island at 3:30 p.m. on the same day.

Like the 1938 storm, the present hurricane has gained speed as it moved up the Atlantic seaboard. At 12 noon, Sept. 15, it was moving at about 30 miles an hour. Twenty-four hours later it had reached speeds approaching 50 miles an hour, when it neared Norfolk. The 1938 hurricane was moving at 60 miles an hour when it hit New England. It seems that hurricanes pick up speed as they progress northward.

After traversing Long Island, the center of the 1938 hurricane continued northward across western New England into Vermont, and then bore slightly to the west. It crossed the lower St. Lawrence Valley near Montreal and continued in a northwest direction until it was lost in the Arctic regions of Canada.

After striking Atlantic City and Asbury Park coastal communities, the present "full hurricane" continued northward through central Long Island, into eastern Connecticut, through Rhode Island and the Cape Cod area of Massachusetts. It veered past the coast of Maine and continued in a northeasterly direction.

Of the major hurricanes which have occurred in mid-September and which have cut a path up the Atlantic coast of the United States, none has followed the same path. The recent hurricane moved up the coast, touching Cape Hatteras, about 50 to 75 miles closer inland than the 1938 storm.

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ENGINEERING

Engines Are Made From Metals And Brains

► "ENGINES are made out of metals and brains," said Dr. Charles F. Kettering, vice-president of General Motors Corporation, at the meeting of the American Chemical Society in New York, "and what we want to do is put as much of the latter in as possible. When that is done we get the most and the cheapest power out of a pound of fuel."

Dr. Kettering discussed the effect of molecular structure of gasolines and fuels on the power and efficiency of internal combustion engines.

Definite limitations, he stated, are imposed on the fuel-plus-engine combination by the destructive combustion disturbance called knock. Although both fuel and engine are involved in knock, the power and efficiency of any one design of engine are dependent upon the extent to which the fuel used is free from knock.

The extent to which the fuel is free from knock is influenced by the addition

of materials such as lead tetraethyl to the fuel, and still more importantly by even slight changes in the molecular structure of the fuel itself, or the way in which even the same number of atoms are linked together to form molecules.

Such studies of molecular structure, he continued, have shown that long thin molecules knock very badly, and short compact ones of the same weight only a little, and the difference may amount to several-fold changes in the potential power output of an engine using them.

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MEDICINE

Thrombin Is Now Issued To Soviet Soldiers

► THROMBIN has been found so successful in stopping bleeding in certain kinds of wounds that ampoules of the material are now included in Soviet soldiers' field service dressings, according to a report issued by the Soviet Scientists Anti-Fascist Committee.

Thrombin is a substance in blood which plays an important part in making blood clot when it is shed. The clot is a device by which the body tries to stop the flow.

When there is much blood flow, however, as in cases in which large veins or arteries are cut, the flow washes away the clots. In some cases, a tourniquet can be used to stop the bleeding. In other cases, such as wounds in which the liver is injured, it is impossible to stop the flow of blood by tourniquet methods.

In such cases, the flow of blood can be stopped in three to five seconds by applying to the wound a gauze pad soaked in thrombin, Prof. B. Kudryashev, a young Soviet surgeon, reports. The thrombin he uses is made from the serum of horse blood.

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INVENTION

Stripping Machine for Grass Seed Is Perfected

► A MACHINE for stripping ripe seed off standing grass stalks is the invention on which patent 2,351,412 was granted to E. M. Dowd and the late C. S. Johnston, both of Amarillo, Texas. For sodding eroded and denuded lands, seed of native grasses is usually most desirable. Since such grasses as a rule cannot be cut and threshed like grain, the most practicable way to get the seed is to pull comb-like instruments through it. This process, called stripping, is accomplished mechanically by the new machine.

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