

METEOROLOGY

Hurricane Season Here

Hurricanes, the most destructive of nature's storms, spend energy at a rate equivalent to "several thousand atomic bombs per second," scientist estimates.

► THE SEASON for the most dangerous and destructive of nature's storms, the hurricane, is here. Swirling winds born in the hot, humid areas over the ocean near the equator are likely to lash out over the tropical portion of the western Atlantic, the West Indies, and the south and east coasts of the United States.

High temperatures and humidity team up with converging winds in the late summer and early fall to make these superstorms. By deliberately flying into the "eye," the absolutely calm area that is the hurricane's center, meteorologists have perfected warning techniques that cut damage and destruction considerably.

They know that the eye is fed by warm, moist air currents from both top and bottom. They know that droplets of water giving up their heat through evaporation help to power the hurricane, that the earth's rotation contributes to the initial spinning.

Because of this rotation, hurricanes swirl in different directions in the two hemispheres. In the Northern Hemisphere, the storm's rotation is counter-clockwise, and in the Southern Hemisphere, it is clockwise.

Hurricanes can take several kinds of paths, depending on the location of the pressure areas in their vicinity. A hurricane tends to follow the southern and western

border of the semi-permanent Atlantic high pressure area.

Thus, it usually moves in a parabola, although a comparatively straight line is not uncommon. Occasionally, it may loop, crossing over the same spot twice.

Tearing over the waters of the western Atlantic, hurricanes expend enough energy in a single day to run all the power plants in the world for several years. This tremendous energy has never been harnessed, nor does man have much hope of ever taming the hurricane.

Dr. R. H. Simpson, an aviation weather specialist for the Air Force, estimates that a hurricane spends energy at the rate of 500 trillion horsepower per second, which is the equivalent of "several thousand atomic bombs per second."

Such energy thrown against coastal cities has caused great disasters, usually from the great waves driven like a wall of water by the storm's winds. The worst hurricane disaster in the U. S. claimed 6,000 lives at Galveston, Texas, in 1900.

As recently as 1935, a hurricane wave drowned or killed more than 400 persons in the Florida Keys. In India in 1876, a hurricane produced an inundation in which more than 100,000 were killed.

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MEDICINE

Prevent Lye Scars

► WHEN LYE or some other corrosive chemical is swallowed by accident or in attempted suicide, either of the anti-arthritis drugs, cortisone and ACTH, may be good medicine.

They can prevent the scarring and narrowing or even closing of the food pipe from mouth to stomach which often follows swallowing of corrosive chemicals. In some cases of this sort, the food pipe, or esophagus, may be closed completely so that a new opening has to be cut into the stomach and a new esophagus constructed.

Good results in preventing this situation by use of cortisone, ACTH and the local anesthetic, procaine, in two cases are reported by Drs. Angelo E. Dagradi and Stephen J. Stempien of the Veterans Administration Hospital, Long Beach, Calif., in *California Medicine* (July).

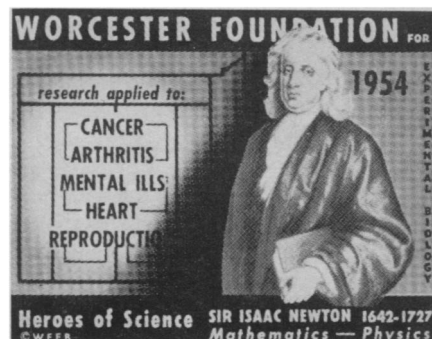
One of their patients was a 74-year-old man who tried to kill himself by swallowing lye crystals. The other was a 40-year-old man who swallowed two ounces of Lysol in an attempt at suicide. He was given

doses of ACTH into his veins for 18 hours and, on the third day in the hospital, he began gargling and swallowing a procaine solution. The next day he was able to eat a bland diet after swallows of procaine.

The 74-year-old got cortisone and the procaine treatment. The inflammation, swelling and ulcers of his mouth and throat gradually subsided and were completely healed in 20 days. He was able to swallow liquids by the eighth day in hospital, but refused to eat. His mental condition required his transfer to a mental hospital where he died three weeks later. Post mortem examination showed his mouth, throat, esophagus and stomach to be normal.

Of course, the doctors point out, there is no way of knowing whether either of these patients would have had closed food tubes as a result of the chemicals they swallowed if they had not gotten ACTH or cortisone. However, in at least one of the cases, the symptoms strongly pointed that way.

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HEROES OF SCIENCE—To finance its research activities, the Worcester Foundation for Experimental Biology sells *Heroes of Science* stamps designed for use as decorative stickers on cards and gifts. This year's stamp honors Sir Isaac Newton.

MEDICINE

Body Cement Dissolver Helps Save Sick Babies

► BABIES SICK with infectious diarrhea which sometimes runs rampant in nurseries are now being helped to recover, thanks to fundamental research at the Worcester Foundation for Experimental Biology, Shrewsbury, Mass.

These babies lose a great deal of water and salt and cannot keep any food down. Like dried out plants, they may die unless these vital needs are replaced. Their veins are so small, however, that they cannot be vein-fed as older patients are.

Consequently, in the past doctors had to inject fluids under the babies' skin. The process, called hypodermoclysis, is slow and painful because the fluid goes in slowly and makes a big swelling that hurts.

Dr. Oscar Hechter of the Worcester Foundation happened to see this tedious, painful procedure one day. Dr. Hechter had been doing research on an enzyme chemical called hyaluronidase. This enzyme, he knew, can penetrate and quickly dissolve a cellular cement that binds together tissues in the body. At the time he saw the sick babies getting hypodermoclysis, he was investigating the effects of hyaluronidase on the cellular cement in the skin of animals.

He thought it might be useful for getting needed fluid into the babies' bodies more quickly and easily. With Drs. Saul K. Dopkeen and Milton H. Yudell of Tufts Medical School, Boston, and Hahnemann Hospital, Worcester, tests were made. The scientists tried the chemical on themselves first and found it worked and caused no ill effects.

Then came the trial on sick babies. These trials were successful. When a little hyaluronidase was injected before starting the fluid, twice as much fluid could be given in one-fourth the time. No hard lumps formed where the fluid was being injected. The baby got its needed fluid and recovered.

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