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? WHY THE WEATHER ?

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STORM TIDES

Reports of storms on our coasts often include mention of great damage by large waves reaching unusual heights on the crest of a very high tide. While the moon and sun are responsible for the regular tides, the winds and barometric pressure cause appreciable changes in the level of the sea along the coast. Winds are most effective, though low pressure may directly result in a rise of the sea to 2 or even 3 feet above normal. Heavy winds can influence both the time and the height of a tide. The control over the time is but slight: it has been found, for example, that even a gale down the St. Lawrence will delay an ascending tide only 10 minutes in 6 hours.

A study of tides and winds in the Gulf of Mexico shows that hurricanes approaching the shore are in all instances preceded by storm tides and waves often of formidable extent. The water may commence rising on the coast in front of an approaching tropical cyclone one or two days before the storm actually arrives, perhaps while it is still 400 or 500 miles out to sea. Oscillation between low and high tides generally continues, but on a higher plane. "The intensity and extent of the hurricane is indicated," says Dr. I. M. Cline, "by the rapidity of the rise in the water and the extent of the coast over which the rise is taking place." When a storm center reaches land, the height of the water along the shore may vary from 8 to 15 feet above the general level of the Gulf. The highest water usually occurs a few miles to the right of the center, as in a tropical cyclone the strongest winds are found on the right side.

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(Tomorrow: Gases of the High Atmosphere)

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