

**CYCLONIC DEPRESSION AND FLOOD IN JAMAICA.**

By MAXWELL HALL. Dated Jamaica, June 15, 1904.

We have just experienced at the west end of the island of Jamaica one of those barometric depressions which give us flood rains, but this time the force of the wind was far greater than usual, and as there had been a large rainfall prior to its appearance, the consequences were disastrous floods, which have done great damage to roads and bridges.

The center, which on June 8 was far south of the Kempshot Observatory, took a curved path around the west end of the island at the very slow rate of about a mile an hour, so that on June 13 the center was north of Kempshot and not very far away. The wind then blew steadily at 60 miles an hour, with maximum gusts of about 70 miles an hour as measured by the pressure plate, and about 5.63 inches of rain fell, but about twice that amount fell in the river valleys in the neighborhood.

The lowest barometric pressure was at 7 a. m., on the 13th, when the fall was only 0.30 inch below the mean; and it seems extraordinary that such a small fall should produce such results, unhappily extended over a large area. The large, handsome, mason-work bridge of five wide-spanned arches over the Montego Bay River has been carried away after an existence of over a hundred years, and the west end of the island was completely cut off in consequence. There is now no storm-warning system on the island; if there had been, the announcement of the approach of a cyclonic depression two days before the 13th, might have saved great personal inconvenience in many cases.

The nature of these depressions has been shown in a pamphlet on "The Meteorology of Jamaica," recently published by the Institute of Jamaica. They often pass near or over Jamaica; sometimes they develop into cyclones; sometimes they fill up and disappear. The following readings taken at the Kempshot Observatory, near Montego Bay, may be interesting.

The last readings show that the depression was developing and proceeding more or less northeast. The mean barometric pressure at this season is 29.932 inches.

*Observations made at the Kempshot Observatory.*

June, 1904.	Hours.	Baro- metric pres- sure.	Wind, miles per hour.	Wind, miles in 24 hours.	Rain.	Notes.		
		<i>Inches.</i>			<i>Inches.</i>			
8th ....	7 a. m.	29.886	e. 5	190	1.12			
	3 p. m.	29.891	ne. 3					
9th ....	7 a. m.	29.940	e. 5	273	0.83		Raining all day.	
	3 p. m.	29.891	se. 7					
10th ...	7 a. m.	29.857	e. 6	221	1.22			Gusts up to 38 miles per hour.
	3 p. m.	29.881	se. 4					
11th ...	7 a. m.	29.829	sse. 7	266	0.00	Cyclonic appearance of weather.		
	3 p. m.	29.831	sse. 6					
12th ...	7 a. m.	29.791	sse. 15	478	0.43		Gusts up to 39 miles per hour. This rain fell early on the 13th. Heavy squalls with rain. Gusts up to 70 miles per hour. Heavy rains. Clouds lifting. Squalls at times. Clearing. Clearing.	
	3 p. m.	29.846	sse. 15					
13th ...	7 p. m.	29.781	s. 25	420	5.20			
	5 a. m.	29.657	s. 50					
	7 a. m.	29.634	s. 60					
	9 a. m.	29.709	ssw. 60					
	11 a. m.	29.724	sw. 20					
	1 p. m.	29.757	sw. 20					
	3 p. m.	29.776	sw. 15					
	5 p. m.	29.768	sw. 15					
	7 p. m.	29.764	sw. 10					
14th ...	7 a. m.	29.825	ssw. 5					

The observatory is in a very exposed position, 1773 feet above the sea level; the barometric pressure is the reading of the barometer reduced to the standard of 32°, sea level, gravity, Kew correction; and further corrected for diurnal variation.

The cloud system was fracto-stratus flying with the wind under a dense high canopy of uniform cirro-stratus, whose motion, if any, could not be ascertained.

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## FORECASTS AND WARNINGS.

By Prof. E. B. GARRIOTT, in charge of Forecast Division.

Several disturbances of moderate strength passed from the American Continent over the ocean in high latitudes, and during the 14th and 15th a disturbance that first assumed marked intensity in the subtropical region north of the West Indies moved with extraordinary speed from the south Atlantic to the New England coast, and passed thence over Newfoundland, attended along the Atlantic seaboard by exceptionally heavy rain and strong gales, which attained hurricane force at points along the middle and south Atlantic coasts. Although the approach of this storm was announced by timely advices and warnings that prompted precautionary measures, a number of lives were lost, much damage was caused to seaside property, and many casualties to shipping occurred along the Atlantic coast of the United States. The maximum wind velocity reported in connection with this storm was 100 miles an hour from the northwest at Delaware Breakwater at 2:50 a. m. of the 15th, and the rainfall exceeded 5 inches at points in the Middle Atlantic States.

### NEW ENGLAND FORECAST DISTRICT.

The chief and about the only unusual feature of the weather of the month was the general and destructive storm of the 14-15th. The storm came on very rapidly during the afternoon of the 14th, and prevailed with great fury through the night and the morning of the 15th. Heavy gales prevailed north to Eastport and from Highland Light, Mass., to Block

Island, R. I., the winds attained hurricane force, strewing Vineyard Sound, Nantucket, Cape Cod, and the Maine coast with many wrecks. Beach property along the coast in some places suffered much damage, and there was considerable loss of life. The press of the city places the loss by damage from the wind and rain, for New England, at \$1,000,000. The rainfall was very heavy, except in some of the southeastern sections of the district, the amounts reaching several inches, and the downpour caused much damage by floods and wash-outs to fields and roads. Remarkable and unusual phenomena attended the storm at points on the Massachusetts coast. At Woods Hole, during the early hours of the gale, the tide rose several feet above the mean high-water mark. This was followed by a drop which was as unusual as the rise, the tide dropping 7 feet in fifty minutes, and to a point 5 feet below the average. Storm warnings were ordered and bulletins issued well in advance of the storm, and doubtless resulted in the saving of many lives and much property.

The frosts, and in some sections, freezing weather on the 22d and 23d were unusually severe and early for the season. They were duly anticipated and announced in the forecasts.—  
*J. W. Smith, District Forecaster.*

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## FORECASTS AND WARNINGS.

By Prof. ALFRED J. HENRY, temporarily in charge of Forecast Division.

tures worthy of mention. A shallow disturbance was noted over the Caribbean Sea as early as the 10th. It moved slowly west-northwest during the 11th and 12th, and by the morning of the 13th its northward advance was made apparent by moderate easterly winds attended by rain on the southeast Florida coast. At no time during the 10th, 11th, and 12th was the center of the disturbance near enough to any observation station to enable the officials of the Bureau to determine its intensity and probable direction. High winds set in over southern Florida on the 14th, continuing during the 15th, and attaining hurricane force on the evening of the 16th, at which time telegraphic communication with the southeast Florida coast was interrupted. On the morning of the 17th the wind at Jupiter, Fla., was blowing from the eastward with a velocity of 60 miles an hour. It increased during the day to 68 miles, and diminished rapidly during the evening. The center of the storm apparently remained stationary over southern Florida from the morning of the 17th until the morning of the 19th. It diminished greatly in energy, and during the 19th only moderate winds were experienced, except at Jacksonville, where a northeast wind of 32 miles an hour was recorded. During the night of the 20th a fresh center appears to have developed a short distance off the South Carolina coast. This new center moved rapidly north-northeast, passing Wilmington, N. C., about 3 a. m. of the 21st and Philadelphia, Pa., about 9 a. m., and disappearing over the Canadian Maritime Provinces on the evening of the 21st. In its northward course it was

During the last decade of the month a tropical disturbance moved rapidly northeastward from the Carolina coast, where it was central on the evening of the 20th, and disappeared east of the Canadian Maritime Provinces on the 23d. Unsettled weather, with occasional moderate gales, prevailed as far south as the Azores on the 25th and 26th. The observatory at Horta reported a maximum wind velocity of 60 miles an hour from the northeast on the morning of the 26th. A disturbance evidently moved east-southeast from the Azores to the coast of Spain during the 27th, 28th, and 29th. The month closed with the advance of an area of high pressure from the American Continent, although fresh north to west gales prevailed in the vicinity of Bermuda on the morning of the 31st.

In the United States the barometric disturbances of the month were confined mostly to the northern portion of the country. With one or two exceptions, they possessed no fea-

attended by heavy rains in the Carolinas, Virginia, Maryland, eastern Pennsylvania, eastern New York, and New England.

The most serious accident to shipping was the foundering of the 3-masted British schooner *Melrose* off the Florida coast Saturday morning, October 15. Seven lives were lost and the survivors were without food and water nearly four days. A press dispatch from Miami, Fla., under date of October 19, gives the following additional information:

After blowing a gale Saturday and Sunday, the storm predicted for south Florida broke over this place Sunday night about nightfall. In a few hours Miami and most of the towns on the east coast of Florida were cut off from communication with the outside world. Telegraph wires were blown down and the railroad tracks were obstructed, and not until to-day was communication restored. The wind attained a maximum velocity of 75 miles per hour here. The chief damage here on land was done by the rain. A few roofs were damaged and window panes blown in, so that the buildings were damaged by rain.

In the surrounding country the fruit and vegetable crops were damaged to a considerable extent.

The 4-masted schooner *James Judge*, of Philadelphia, is aground four miles south of Palm Beach, having gone ashore Monday in a terrific gale, in which the wind was blowing 60 to 90 miles an hour. The crew are all safe. The vessel is badly damaged. It carried no cargo.

The 3-masted bark *Zion*, owned by A. Hemmes, of Emden, Germany, loaded with a million feet of lumber, from Pensacola to London, stranded five miles north of the House of Refuge, near Fort Lauderdale, about 3 o'clock yesterday and Captain Hemmes and crew of fourteen men, after several hours of struggling, saved themselves with the aid of pieces of lumber and improvised rafts.

Ample and continued warnings of the approach of this storm were widely distributed along the south Atlantic and Gulf coasts. The following clipping from the Daily Metropolis, Jacksonville, Fla., dated November 5, 1904, testifies as to the efficient manner in which these warnings were distributed:

The recent tropical storm that swept the southeast portion of this State during the middle of October did not reach that section without due warning from the Weather Bureau, given five or six days before the storm approached the coast of Florida. The first notice from the Weather Bureau that a tropical disturbance was developing south of Jamaica was given out by the Central Office at Washington on the 11th of October, and nearly a week followed before the storm reached the coast near Miami. With this timely warning, it is sad, indeed, that loss of life should have resulted from the failure of the master of a vessel to heed the notice of the Weather Bureau that "caution was advised." We refer to the master of the schooner *Melrose*, bound from Jacksonville for the Bahamas, whose attention was called to the predicted storm. The master replied that he thought he could make the trip, and proceeded southward, running into, or near, the storm center. A wrecked vessel and the loss of five or six lives is the penalty he paid for ignoring the information issued by the Weather Bureau. It is painful to allude to such misfortunes, but it is, nevertheless, profitable to others, so that in the future such recklessness may be avoided. During the period of tropical storms sailing vessels should use every precaution. The Weather Bureau bases its warnings on scientific deductions, and generally with great accuracy, and it is criminal in any master to ignore them during the period of hurricanes. It is a case of everything to lose and nothing to gain.

The month was unusually dry. With the exception of the heavy rains that fell along the Atlantic coast, especially over southern Florida, during the prevalence of the stormy conditions attending the tropical disturbances of the 14th-19th, and 20th-21st, no rains of consequence fell in eastern and southern districts. The drought was especially severe in the east Gulf States, where no rain of importance has fallen since the early part of September.