

## WEATHER OF THE ATLANTIC AND PACIFIC OCEANS

### NORTH ATLANTIC OCEAN

By F. A. YOUNG

The outstanding feature of the month was the disturbance of tropical origin that was first reported on the daily weather map of August 25 as being central about 400 miles north-northeast of Porto Rico. However, reports received later by mail indicate that this storm was central near 21° N., 56° W., as early as the 22d. It apparently remained nearly stationary until the 25th, and was of comparatively slight intensity during this period.

Charts VIII to XIII cover the period from the 25th to 30th, and on Chart XIII the track of this storm is shown from the 22d to 31st.

The number of days with gales of extratropical origin did not differ greatly from the normal, as shown on the Pilot Chart, over the greater part of the ocean.

The number of days on which fog was reported in different localities is as follows: Over the Grand Banks, on from 11 to 14 days; along the American coast between the thirty-fifth and forty-fifth parallels, from 6 to 15 days; over the steamer lanes, between the twentieth and fortieth meridians, from 1 to 6 days; between the twentieth meridian and coast of Europe from 1 to 11 days.

Barometric data for several island and coast stations are given in the following table:

TABLE I.—Averages, departures, and extremes of atmospheric pressure at sea level, 8 a. m. (seventy-fifth meridian), North Atlantic Ocean, August, 1930

Stations	Average pressure	Departure	Highest	Date	Lowest	Date
	<i>Inches</i>	<i>Inch</i>	<i>Inches</i>		<i>Inches</i>	
Julianehaab, Greenland.....	29.94	(1)	30.16	25th.....	29.58	20th.
Belle Isle, Newfoundland.....	29.95	2+0.06	30.28	24th.....	29.30	6th.
Halifax, Nova Scotia.....	30.01	3 0.00	30.28	30th.....	29.58	5th.
Nantucket.....	30.00	3-0.02	30.28	13th.....	29.74	16th.
Hatteras.....	30.01	3-0.03	30.24	13th.....	29.76	22d.
Key West.....	30.02	3-0.02	30.12	4th.....	29.84	21st.
New Orleans.....	30.03	3+0.01	30.14	4th <sup>4</sup> .....	29.92	20th. <sup>4</sup>
Cape Gracias, Nicaragua.....	29.92	2+0.03	29.98	5th <sup>4</sup> .....	29.86	15th. <sup>4</sup>
Turks Island.....	30.07	3+0.03	30.18	4th.....	29.96	26th.
Bermuda.....	30.08	3-0.06	30.30	4th <sup>4</sup> .....	29.60	26th.
Horta, Azores.....	30.19	2-0.01	30.15	15th.....	29.86	30th.
Lerwick, Shetland Islands.....	29.75	2-0.05	30.21	31st.....	29.18	14th.
Valencia, Ireland.....	29.88	2-0.04	30.32	31st.....	29.25	2d.
London.....	29.90	2-0.09	30.28	25th.....	29.47	3d.

<sup>1</sup> No normal available.  
<sup>2</sup> From normals shown on Hydrographic Office Pilot Charts, based on observations at Greenwich mean noon, or 7 a. m., seventy-fifth meridian time.  
<sup>3</sup> From normals based on 8 a. m. observations.  
<sup>4</sup> And on other date or dates.

The first decade of the month was characterized by moderate weather over the ocean as a whole, except that on the 2d, 4th, and 5th moderate westerly gales prevailed along the coast of Europe, and on the 7th the station at Julianehaab, Greenland, reported wind southeast, force 9, barometer 29.76 inches, and there was apparently a well-developed depression over the region between Greenland and Newfoundland.

From the 11th to 19th moderate weather again prevailed over the greater part of the ocean, with the North Atlantic HIGH well developed, although on the 11th a LOW was over the Maritime Provinces, accompanied by moderate southerly gales between the fiftieth and sixtieth meridians, and on the 16th moderate gales were also reported between the fifteenth meridian and coast of Scotland.

On the 20th a LOW was central near 48° N., 18° W., with moderate gales between the twenty-fifth meridian and French coast; this moved rapidly eastward, and on the 21st was over northern Ireland, the storm area having diminished in extent and intensity. On the 20th there was also a depression off Hatteras that afterwards increased in intensity, remaining nearly stationary until the 22d, when the center was about 300 miles east of Nantucket.

As previously stated, the weather conditions from the 25th to 30th are shown on Charts VIII to XIII. The first observing vessel to note the tropical hurricane of this period, the approximate track of which is shown on Chart XIII, was the American steamship *Chincha*, Capt. H. J. Svenning; observer, William Sherwin. The *Chincha*, bound from Rio de Janeiro for Baltimore, came definitely within the influence of the hurricane on the 22d, when in latitude 21° 17' N., longitude 56° 02' W. At Greenwich noon of that date the barometer had fallen to 29.88 inches and the wind had backed from east-northeast to southwest and increased to force 7. The position of the vessel was therefore somewhere to the south and west of the storm center. Twenty-four hours later, when the *Chincha* had reached latitude 23° 24' N., longitude 58° 22' W., the wind had backed to east, indicating that the vessel had crossed the path at the rear of the center. Continuing on her course the *Chincha* reached latitude 27° 10' N., 63° 16' W. (D. R.), at Greenwich noon (7.47 a. m. L. M. T.), when it became apparent that the hurricane was recurring and approaching the vessel from the southward. The barometer now was 29.70 inches and the wind northeast, 10. At 3 p. m., local time, the ba-

rometer had fallen to 28.44 and the wind, still northeast, increased to full hurricane force. The decks were now awash under heavy breaking seas and some damage to superstructure being sustained. At 3.25 p. m. the vessel was hove to, head to sea. At 3.30 p. m. the wind shifted to southwest, force 12, barometer 28.36 inches; precipitous seas. From this time on wind and sea gradually diminished, and after being hove to for 18 hours and 35 minutes the *Chincha* was hauled back on her course.

On the morning of the 26th the hurricane passed near Bermuda, its course at that time being nearly due north, though continuing to recurve. By the morning of the 28th the center had reached latitude 41° 30' N., longitude 55° W., and near here the French liner *Paris* was heavily involved. Captain Pugnet stated that the wind reached a velocity of 100 miles an hour and the barometer fell from 30.08 to 28.58 inches in a few hours. The storm report from the *Paris* is included in the table. According to press reports the ship was struck by one tremendous wave that smashed heavy glass along the port promenade and injured about 40 passengers, who were struck by flying glass.

From this time until the morning of the 30th the course of the hurricane was almost due east, and at Greenwich noon of that date it had reached longitude 22° 30' W., still exhibiting hurricane strength. After this time, however, it lost energy and speed, and its course changed abruptly to the northward. It continued for some days as a disturbance of moderate intensity west of the British Isles.

The following report of a squall in the Florida Straits was received from Mr. W. P. Page, third officer, British steamship *Reventazon*, Capt. A. C. Woodhouse, from Tela, Honduras, toward Bremerhaven:

*Monday, August 25, 9 p. m., Florida Straits, 23° 50' N., 81° 35' W.*—Between 8 and 9 p. m. the sky gradually became overcast from all directions from west through north to east, with heavy black nimbus clouds giving every appearance of a heavy downpour of rain approaching. The wind was east-northeast, and at 9 p. m. it began to blow hard, and for an hour the wind was of force 9 to 10, in hot and cold blasts. The clouds broke up into dark patches of strato-cumulus clouds. The sea increased quickly to a rough sea. At 10 p. m. the clouds had blown over to the southwest in a dark black mass and the wind moderated as quickly as it had increased, backing to northeast, force 4. The squall was accompanied by vivid lightning. The sea moderated very quickly with the decrease in force of wind. The barometer was steady all the time at 29.80 inches (uncorrected). Air temperature, 83°; water, 83°.

OCEAN GALES AND STORMS, AUGUST, 1930

Vessel	Voyage		Position at time of lowest barometer		Gale began	Time of lowest barometer	Gale ended	Lowest barometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Highest force of wind and direction	Shifts of wind near time of lowest barometer
	From—	To—	Latitude	Longitude									
<b>NORTH ATLANTIC OCEAN</b>													
Polybius, Am. S. S.	Newcastle-on-Tyne	New Orleans	49 08 N	7 05 W	Aug. 1	11 p., 2	Aug. 3	29.33	SSE	W, 10	WNW	W, 10	
Reventazon, Br. S. S.	Avonmouth	Tela, Honduras	49 00 N	10 50 W	Aug. 4	9 p., 4	Aug. 5	29.41	WSW	SW, —	NW	SW, 9	SW-W-WNW
Sarcoux, Am. S. S.	New York	Bordeaux	40 30 N	62 00 W	Aug. 20	7 p., 20	Aug. 22	29.84	NE	NE, 7	SW	NE, 9	NE-E-SSW
West Cobalt, Am. S. S.	New Orleans	London	49 30 N	12 00 W	do	1 a., 20	Aug. 21	29.34	SSE	SSE, 5	NW	—, 10	SSE-S-NW
Sulaco, Br. S. S.	Rotterdam	Jamaica	50 12 N	2 37 W	Aug. 21	7 a., 21	do	29.47	SSE	SSW, 8	SW	S, 9	S-SW
San Benito, Br. S. S.	Tela, Honduras	Boston	36 40 N	72 50 W	do	Mdt., 22	Aug. 23	29.62	NNE	NNW, 10	NW	NNW, 10	N-NW
Chincha, Am. S. S.	Rio de Janeiro	Baltimore	21 17 N	56 02 W	Aug. 22	2 a., 22	do	29.70	SSW	SSW, 10	E	—, 10	SSW-S-E
Viborg, Dan. S. S.	Cuba	New York	35 15 N	74 05 W	do	4 p., 22	do	29.17	S	NNW, 10	NW	NNW, 10	NE-NNW
Schenectady, Am. S. S.	Copenhagen	Portland, Me	55 25 N	34 06 W	Aug. 23	7 a., 23	Aug. 24	29.54	W	WNW, 7	WNW	NW, 9	W-NW
Chincha, Am. S. S.	Rio de Janeiro	Baltimore	27 13 N	63 16 W	Aug. 25	Noon, 25	Aug. 25	28.36	NE	—, 10	SW	NE, 12	NE-SW
Endicott, Am. S. S.	Galveston	Havre	38 50 N	62 32 W	Aug. 27	3 p., 27	Aug. 29	28.70	ENE	N., 12	NW	—, 12	ENE-N-NNW
Reliance, Ger. S. S.	New York	Hamburg	40 58 N	57 15 W	do	7 a., 28	Aug. 28	28.89	ENE	N., 12	NNW	N, 12	NE-N
President Wilson, Am. S. S.	Gibraltar	New York	41 30 N	48 00 W	Aug. 28	6 p., 28	Aug. 29	28.67	S	S, 12	N	S, 12	S-W-N
Paris, Fr. S. S.	Plymouth	do	41 18 N	53 06 W	do	11 a., 28	Aug. 28	28.49	SSW	SW, 12	N	SW, 12	
Steel Exporter, Am. S. S.	Avonmouth	Philadelphia	41 05 N	32 35 W	Aug. 29	2 p., 29	Aug. 30	29.37	S	N, 12	N	N, 12	
Efna, Am. S. S.	Rotterdam	Tampa	40 18 N	26 26 W	do	11 p., 29	do	29.48	SSW	SW, 10	W	SW, 12	SSW-SW
West Hobomac, Am. S. S.	Avonmouth	New Orleans	39 04 N	30 04 W	do	6 p., 29	Aug. 29	29.40	SW	SW, 9	WNW	W, 11	SW-W
Resolute, Ger. S. S.	Cherbourg	New York	48 27 N	22 50 W	do	—, 29	Aug. 31	29.42	SE	ESE, 8	NE	SE, 10	SE-E-NE
West Kyska, Am. S. S.	Antwerp	Gulfport	41 17 N	22 55 W	do	4 a., 30	Aug. 30	28.77	S	SW, 12	SW	SW, 12	S-SW
Iroquois, Br. S. S.	T h a m e s h a v e n	Baton Rouge	42 55 N	25 40 W	do	—, 30	Aug. 31	28.78	S	SW, 8	NNW	S, 10	

## THE SANTO DOMINGO HURRICANE OF SEPTEMBER 1 to 5, 1930

By F. EUGENE HARTWELL

[Weather Bureau Office, San Juan, P. R., September, 1930]

There was no ship in the Atlantic near enough to report the formation of this storm to the east of the Lesser Antilles, so the first intimation obtainable was in the regular morning reports of the Weather Bureau observers from Barbados to Dominica, each showing a barometer reading only slightly below normal, but a wind circulation decidedly abnormal. The directions ranged from north at Dominica, through northwest and west, to south at Barbados. The observer at Dominica also sent, in addition to his usual code report, "evidences of approaching hurricane." Cautionary advice was immediately sent out to the area from Barbados to St. Thomas, and special observations requested.

At noon communication with Dominica had already ceased, but fortunately the steamship *Lady Hawkins* was a short distance to the westward, and her report, together with those of the nearer islands, and that of the steamship *Invella*, which was just west of Guadeloupe, definitely located the center. It was over or very near Dominica at noon of the first. With this definite information to work from, the storm track was plotted as passing south of Porto Rico and probably Santo Domingo and Haiti, and advisory warnings issued Monday afternoon accordingly.

While the storm was estimated to be of relatively small diameter, no direct evidence was obtainable of this detail until it had passed over Santo Domingo City on the third. Authentic reports place the destructive diameter at less than 20 miles. Reference to barograph traces will show how rapid was the fall and recovery of air pressure during the storm. Three of these traces were reconstructed from readings taken at short intervals by officers of the steamship *Coamo*, which lay just off the shore at the Dominican capital throughout the storm, of the steamship *Catherine*, which encountered the full fury of the elements just south of Saona Island on the return trip from Santo Domingo to San Juan, and by the observer at Dominica. The fourth is a copy of an actual barograph trace, made by the instrument in charge of Mr. A. Ortori, observer at Santo Domingo. This record was made on a sheet limited to 28 inches, the copy being transferred to a sheet with a 27-inch limit and the record extended to the low limit noted by Mr. Ortori on one of his mercurial barometers, namely, 700 millimeters, or 27.56 inches. On the recovery, with the wind shift from north-northeast to south-southwest, the rain stopped the automatic record. The roof carrying the anemometer installation was damaged when the record had reached 100 miles per hour, some time before the vortex passed. The Pan-American Airways anemometer near by is reported to have recorded up to 180 miles per hour before it was

carried away. This instrument is a 4-cup Robinson, so its record must be discounted. Wind velocities, estimated by those acquainted by long experience in these areas, vary from 80 to 100 at Dominica to 150 to 200 miles per hour at Santo Domingo. Where the steamship *Coamo* was lying, offshore, the sea was not so heavy, and the direct damage, aside from water damage to interior fittings, was caused by wind pressure. This was sufficient to break pilot house and cabin windows, and list the ship over to 45° from the perpendicular. Doubtless it was only the active pumping of ballast tanks to the high side which kept her afloat. The steamship *Catherine* suffered relatively more because of being more exposed to heavier seas.

The steamship *Antilles* of the French Transatlantic Line entirely avoided the storm in her 48 hours of maneuvering between Jacmel, Haiti, and Santo Domingo City. Her lowest barometer during the 2d and 3d was 29.67 inches, and she entirely avoided destructive winds.

From available observations the trajectory of this storm was almost a straight line from Dominica to the Florida Straits region. Its small diameter makes the assumption probable that the center passed much nearer the south coast of Porto Rico than would be indicated by parallel effects of a wider storm or than was first estimated in plotting the probable path of this storm. Lowest pressures at San Germain and Guayama were only 29.69 and 29.59 inches, respectively. Lowest at Ponce was 29.74 inches, the difference between that and the San Germain report probably being due to difference in elevation. It was learned several days later that winds of sufficient force to damage plantains and other minor crops prevailed in the extreme southwest of Porto Rico, in the Cabo Rojo district, and mountainous seas ravaged the coast from Humacao to Mayaguez.

The forward movement in its path varied greatly, there being a decided slowing up after it passed Porto Rico. During this part of its path it traveled at less than 8 miles per hour. After passing into the Atlantic to the northwestward it resumed a more normal forward movement, but still in the same general direction.

The chart showing this trajectory, Track No. II, also shows the other two which have been reported so far this season. No. I of late in August, which passed west of Bermuda and thence northeastward to the North Atlantic, and No. III, which was reported but twice, first by a Pan American Airways plane on September 6 near St. Lucia, and again at midnight of the 7th by the steamship *Rhodopis*. This disturbance dissipated before it reached proximity to any land station.

On the island of Haiti-Santo Domingo the damage was apparently negligible outside of the Dominican capital and its immediate environs. The surface friction over the mountain masses west of the city damped the storm to such an extent that beyond that point it was barely traceable, and it finally passed to the northeast over the Atlantic.

While the destructive effects of this storm in Santo Domingo, where 4,000 lives were lost<sup>1</sup> and property damage has been roughly estimated at \$50,000,000, would class it as a major disaster, for Porto Rico it will be listed among the "beneficial" storms in that it caused much needed moderate to heavy rains throughout the island. The greatest amount reported was over 6 inches at Cabo Rojo; the least, strangely enough, was over the middle of the south coast, where it was under an inch. On the north coast it varied from somewhat less than an inch to more than 2 inches; in the interior from 1 to 4 inches.

APPENDIX I.—STORM CONDITIONS ENCOUNTERED BY THE STEAMSHIP "COAMO" SEPTEMBER 3, 1930

By BENJAMIN PARRY  
[Western Bureau, New York City]

The steamship *Coamo*, flagship of the Porto Rico Line, is a vessel of 7,000 tons displacement. She plies between New York, San Juan, and Santo Domingo during the day of arrival, depending upon cargo requirements.

On September 1, the *Coamo* arrived at San Juan, but canceled her departure for Santo Domingo, due to advices that indicated a hurricane central off Dominica. The ship's barometer, 30 inches at 4 p. m., showed a downward trend during the night, and at 8 a. m., September 2, registered 29.87. Meanwhile the wind, which had been light east-southeast, backed to northeast, with moderate velocity. At 8 a. m., September 2, the following warning was issued by the San Juan office of the Weather Bureau:

Center of storm is now apparently directly south of Porto Rico, about latitude 16° 13', longitude 67° 00', moving west-northwest. Storm will not touch Porto Rico. Advise caution next 12 hours for all shipping south of Santo Domingo and Haiti.

As the *Coamo* was now hours behind schedule it was decided to sail at 3 p. m. The ship departed with a light east-southeast wind which later backed to northeast, increasing, and a slowly falling barometer. At 11 p. m. the vessel was 5 miles south of Saona Island, steering west. She now encountered a moderate northeast gale and rough sea. As the vessel progressed and passed under the lee of the land the gale moderated and light rain began falling. By midnight the barometer had dropped to 29.68, with moderate northeast gale, and light rain continuing. At 4 a. m., September 3, the barometer ceased falling and the sky appeared to be clearing. During the next five hours the barometer gradually rose and at 9 a. m. stood at 29.72. The wind remained moderate north-northeast and sky continued to brighten. At 9:30 a. m. the *Coamo* was 5 miles south-east of the city of Santo Domingo. The harbor was too rough to venture for anchorage. The ship now cruised outside, headed east with engines slow ahead, awaiting further moderation of sea within the harbor. At 10 a. m. the pressure again started downward and a tremendously high following swell and rough northeast beam sea set in. The ship pitched and rolled heavily, shipping spray over hatches and decks. By 10:30 a whole gale from northeast was encountered with driving rain, making it necessary to sound fog signals continu-

ously. During the next hour the pressure continued to fall and at 11:30 a. m. reached 29.45. The wind had attained a velocity of 125 miles per hour, and the ship became unmanageable. At noon the barometer registered 28.22, having fallen 1.23 inches in 30 minutes. The wind was now blowing 150 miles per hour which carried the rain and spray in sheets cutting the visibility to a few yards. Shortly after noon the wind velocity dropped rapidly and at 12:25 p. m. the ship was in a calm, with heavy confused sea pitching and seething, resembling a boiling cauldron. Hundreds of birds were seen flying about or resting on the ship. The barometer continued to drop, the indicator finally passed below the graduated scale and striking the attached thermometer was prevented from descending lower. The distance between the scale and thermometer corresponds to 0.10 inch, thereby indicating the lowest pressure as 27.70 (Captain Evans estimated the low point as 27.65). During this time the aneroid pumped violently, frequently rising 0.20 inch then returning to rest on the thermometer. At 1:04 p. m. the wind shifted to southwest with velocities quickly increasing until the gale raged as heavily as experienced before the center of the storm passed. At 1:25 p. m. a velocity of 150 miles was experienced, after which it gradually subsided, becoming moderate southerly at 8 p. m.

At the height of the storm rain and spray were driven in sheets hiding from view the foremast and rails. Glass was blown in, hatch covers, boat covers, and tarpaulins tossed into the sea, the radio antenna was carried away, skylights broken, and the interior of the ship drenched. The *Coamo* had but 92 tons of cargo aboard. The ship listed 20° and occasionally rolled to 40°.

Pressure readings recorded on the steamship "Coamo," September 1-3, 1930

Date	Time	Pressure	Date	Time	Pressure	
		<i>Inches</i>			<i>Inches</i>	
Sept. 1	3 p. m.	29.97	Sept. 3	4 a. m.	29.60	
	4 p. m.	29.95		5 a. m.	29.60	
	5 p. m.	29.94		6 a. m.	29.60	
	5:30 p. m.	29.93		7 a. m.	29.64	
	6 p. m.	29.94		8 a. m.	29.69	
	7 p. m.	29.95		9 a. m.	29.72	
	7:30 p. m.	29.94		10 a. m.	29.71	
	8 p. m.	29.94		10:30 a. m.	29.66	
	Midnight	29.92		10:35 a. m.	29.62	
	Sept. 2	6 a. m.		29.84	11 a. m.	29.53
		7 a. m.		29.86	11:20 a. m.	29.45
8 a. m.		29.87	Noon	28.22		
9 a. m.		29.88	12:43 p. m.	28.18		
10 a. m.		29.90	12:45 p. m.	28.05		
11 a. m.		29.88	12:48 p. m.	27.85		
Noon		29.87	1 p. m.	27.78		
1 p. m.		29.85	1:01 p. m.	27.70		
2 p. m.		29.82	2 p. m.	28.30		
3 p. m.		29.80	2:30 p. m.	29.40		
4 p. m.		29.81	2:40 p. m.	29.50		
5 p. m.		29.80	3 p. m.	29.54		
6 p. m.		29.79	4 p. m.	29.60		
7 p. m.		29.80	5 p. m.	29.74		
8 p. m.	29.79	6 p. m.	29.79			
9 p. m.	29.76	7 p. m.	29.80			
10 p. m.	29.75	8 p. m.	29.86			
11 p. m.	29.71	9 p. m.	29.90			
Sept. 3	Midnight	29.68	10 p. m.	29.91		
	1 a. m.	29.67	11 p. m.	29.92		
	2 a. m.	29.63	12 p. m.	29.94		
	3 a. m.	29.62				

Pressure range from time of vessel's departure from San Juan to center of storm, 12.10 inches.

Pressure fell 0.08 in 1 minute, 1 p. m. to 1.01 p. m.; 0.20 in 3 minutes, 12.45 p. m. to 12.48 p. m.; 1.23 in 40 minutes, 11.20 to noon.

Pressure increased 0.60 in 59 minutes, 1.01 p. m. to 2 p. m.

Captain Evans made a record of pressure readings which were read by Chief Officer Otto Berggren, as frequently as ship duties permitted. The ship's barometer was compared with standard at New York, July 16, and at San Juan, September 1, and found to be correct. On September 9, the instrument was 0.02 too high, comparison being made with portable aneroid.

<sup>1</sup> A more recent estimate made by an official of the American Red Cross places the loss of life at 2,000, the injured at 8,000, and the property loss at \$15,000,000.—E.d.

APPENDIX II  
C. L. MITCHELL

After leaving the northwestern corner of Haiti during the early night of the 4th, the tropical disturbance, which was now of minor intensity, crossed the Windward Passage and moved west-northwestward almost the entire length of Cuba, passing into the Gulf of Mexico during the 6th. No damage has been reported from Cuba. By the morning of the 7th, the disturbance had recurved toward the north and the next day toward the northeast, the center passing inland over Florida near Tampa about 4 a. m. of the 9th. The lowest barometer reading at that place was 29.70 inches with a maximum wind velocity of 36 miles per hour from the southeast.

During the next two days the disturbance moved very slowly northeastward over the Florida peninsula and into the Atlantic Ocean so that by the evening of the 11th its center was approximately 100 miles east of Jacksonville. No barometer reading as low as 29.80 had been reported since the center passed Tampa, and no strong winds, except that the steamship *J. Fletcher Farrell* which was east-southeast of the center during the afternoon of the 11th reported heavy squalls with wind from the southeast, reaching gale force at times. The morning reports of the 12th from land station and vessels showed that the center was some distance off the North Carolina coast south of Wilmington, but no strong winds and no pressure below 29.84 were reported. However, at 9.30 a. m. the steamship *Magmeric* off Fryling Pan Shoals reported a pressure of 29.21 inches, and that it had fallen to 28.89 with a wind of force 12 at 8.30 a. m. As soon as this report was received, hurricane warnings were ordered hoisted immediately along the North Carolina coast from Southport to Beaufort, and southeast storm warnings north of Beaufort to the Virginia Capes. The center of the storm which was again of hurricane intensity eight days after passing over the city of Santo Domingo, approached close to the coast near Cape Lookout during the late afternoon of the 12th. However, little damage was done in this sparsely settled section. About a dozen small frame buildings were blow down at Cape Lookout and the Coast Guard headquarters building was damaged, while power and lighting systems at Beaufort and Morehead City were put out of commission for several hours and communication systems were disrupted.

By 8 p. m. of the 12th the center was passing east-northeastward to the south of Cape Hatteras where a maximum wind velocity of 60 miles per hour from the north was reported. During the next several days the disturbance moved almost directly eastward, the center passing a short distance north of Horta, Azores, on the 18th, after which the disturbance apparently merged with the severe storm that reached Ireland on the 19th. On the 15th the disturbance was still attended by winds of hurricane strength as shown by a report from the steamship *City of Agra*.

APPENDIX III.—ASSOCIATED PRESS DISPATCHES

AIRPLANE ENCOUNTERS SANTO DOMINGO HURRICANE

By GRETCHEN SMITH, Evening Star, September 11, 1930

Caught in the Santo Domingo hurricane, while flying from Porto Rico to Port au Prince, Haiti, en route from Brazil to the United States, Senhor Decio de Paulo Machado, representative from Brazil to the Pan American Conference, arrived in Washington last evening by plane specially chartered in Miami.

Senhor Machado left Rio de Janeiro about 10 days ago, having allowed himself ample time to arrive in Washington for the opening of the conference. On the hop between the Virgin Islands and Haiti, the Brazilian

representative stopped at Porto Rico to lunch with Governor Roosevelt, a personal friend of many years. Senhor Machado related:

After leaving Porto Rico, I sat in front with the pilot of the plane, which was to make its next stop at Haiti. As I drowsed in my seat, I noticed directly before us a small black spot which seemed coming steadily toward us. As it approached it grew larger.

"Not a breath of air was stirring and an ominous quiet seemed to weigh upon us. Suddenly, the wind began to blow and drops of rain like boiling water began to fall, rapidly becoming so violent that we were compelled to close all the windows of the plane.

The storm descended upon us so suddenly that before we knew it we were being swept along with the hurricane at a rate of 160 miles an hour. We were like a leaf in that storm.

When we had first seen the black spot approaching the pilot had remarked it was a storm coming and that he would 'beat it' by riding above it. That was impossible, as the storm had swept upon us before we had time to realize it. It was useless for the pilot to ride against it. He just allowed the plane to carry along with the storm at its will. We would be swept up into the air, and then dropped suddenly, as one might do when plunged into a body of water. At times I thought we would never come up from one of those drops.

However, we finally found ourselves above Santo Domingo Island, but everything was so dark and obscure, it was impossible to locate a place to land. After circling about for a short time, the pilot finally decided to land upon the water and take our chances of being rescued by sending wireless messages to shore. We landed safely, but after floating about for two or three hours, with no help from the land where we had sent messages we slowly taxied in toward the shore. We found ourselves at a small town, Barahona, on the coast about 15 miles from Santo Domingo City. No one in Barahona knew a thing about the hurricane. They laughed when we told them that a terrible storm had hit Santo Domingo. Barahona was untouched by the hurricane, and although telephonic and telegraphic communication to the capital were down, they merely thought they had been blown down by an ordinary storm.

The route of the storm was curious. It seemed to strike in spots. Certain parts of the country were terribly torn up, trees were uprooted and crops destroyed. Then directly next to a torn-up section the countryside was untouched.

RAINS SWELL OZAMA RIVER

*PORT AU PRINCE, Haiti, September 8 (A. P).—* Heavy rains lasting more than 24 hours have swollen the Ozama River and made travel through the hurricane zone in the interior of Santo Domingo all but impossible to-day. The Ozama's flow has increased to 15 miles an hour, effectually preventing boats from entering its mouth.

Airplanes to-day formed virtually the only mode of travel into the area. Relief work went forward to-day as energetically as possible under such circumstances.

PATHETIC SURVIVORS WATCH SKY

The population pathetically watched the arrival of each plane at the Santo Domingo field, hailing each as angels of mercy alighting from the sky amid a scene of great misery.

Aviation reconnaissance has shown that the hurricane after razing Santo Domingo City traveled northwest, destroying everything in its path in an area 25 to 40 miles wide for a distance of about 50 miles.

When the hurricane hit the side of the mountains, rising almost perpendicularly in its path, the storm actually skinned the south slope of the mountain range there and hurtled into the air, touching only the high points in the succeeding ranges upon its course to the sea.

RICH VALLEY AREAS SPARED

The area of the Santiago, Vega, and Boca Valleys, which are the productive part of the country, were spared. The people of Santiago with whom observers talked related that they could hear the storm, howling like a million fiends in the air, as it passed overhead. The people were greatly awed by the phenomenon.

Plantations east of Santiago within the area of the storm were wiped out for a distance of 15 to 20 miles.—*Evening Star, September 8, 1930.*