

RIVERS AND FLOODS

By MONTROSE W. HAYES

Minor floods in Texas were mentioned in the article on "Rivers and Floods" in the October, 1930, REVIEW, but in the text no reference was made to a flood in the first half of October in the Colorado River of Texas. Belated reports indicate the Colorado flood was potentially the most serious in the State, but it passed off without causing any important damage. Bottom lands were flooded, but by taking timely heed of the warnings corn was hauled from the bottomlands, and cattle and hogs were driven to higher ground.

Floods occurred in November in some of the streams of Georgia, Alabama, western Florida, and eastern Louisiana. (See table of flood stages.) They caused no serious damage. The overflow of the Choctawhatchee appears to have been watched with absorbing interest and with gratification by the residents and interests along the stream, as this was the first test of the new Choctawhatchee flood warning system.

In December there were some local overflows in the Savannah River Basin and in eastern Louisiana and Texas, but they were of minor importance.

Table of flood stages in November and December, 1930

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
<b>ATLANTIC DRAINAGE</b>					
Savannah: Ellenton, S. C.....	13	Nov. 15	Nov. 23	17.2	Nov. 20, 21.
Ogeechee: Meldrim, Ga.....	6	Dec. 8	Dec. 12	16.5	Dec. 10.
Ocmulgee: Abbeville, Ga.....	11	Nov. 27	Dec. 14	7.6	Dec. 1, 2.
		Nov. 24	Nov. 25	11.3	Nov. 24, 25.
<b>EAST GULF DRAINAGE</b>					
Apalachicola: Blountstown, Fla.....	20	Nov. 20	Nov. 23	20.9	Nov. 23.
Flint: Albany, Ga.....	20	Nov. 21	Nov. 21	20.1	Nov. 21.
<b>Chattahoochee:</b>					
Columbus, Ga.....	20	Nov. 17	Nov. 17	25.2	Nov. 17.
Alaga, Ala.....	30	Nov. 18	Nov. 20	34.9	Nov. 19.
Choctawhatchee: Caryville, Fla.....	12	Nov. 17	Nov. 24	13.2	Nov. 19, 20.
Black Warrior: Tuscaloosa, Ala.....	46	do	Nov. 18	49.5	Nov. 17.
West Pearl: Pearl River, La.....	13	Nov. 20	Nov. 24	14.1	Nov. 22.
		Dec. 6	Dec. 14	14.6	Dec. 11.
<b>MISSISSIPPI DRAINAGE</b>					
Sulphur: Ringo Crossing, Tex.....	20	Dec. 1	Dec. 1	20.5	Dec. 1.
		Dec. 5	Dec. 8	23.3	Dec. 6.
<b>WEST GULF DRAINAGE</b>					
<b>Trinity:</b>					
Dallas, Tex.....	28	Dec. 1	Dec. 1	29.6	Dec. 1.
		Dec. 5	Dec. 9	33.6	Dec. 6.
Trinidad, Tex.....	28	Dec. 9	Dec. 11	28.8	Dec. 10.
Liberty, Tex.....	25	Dec. 8	do	25.1	Dec. 9, 10.

WEATHER OF THE ATLANTIC AND PACIFIC OCEANS

NORTH ATLANTIC OCEAN

By F. A. YOUNG

December is normally one of the stormiest months of the year over the North Atlantic, and the conditions during the current month could not be called unusual over the greater part of the ocean, although up to time of writing, nearly 100 vessels have rendered storm reports. Along the American coast between the thirty-fifth and fortieth parallels, the number of days with gales was somewhat above the normal; over the middle section of the steamer lanes, about normal, and over the eastern section, somewhat below.

The positive pressure departure at Horta, and the negative departures at stations on the British Isles, as shown on Table 1, indicate that both the North Atlantic HIGH and Icelandic LOW were well developed, although judging from vessel reports, the conditions over the area between these two centers of action were not abnormal.

The month was unusually free from fog over the Grand Banks, where it was reported on only 4 days, in place of the usual 10 to 15 days. Fog occurred on 3 days off the American coast, between the thirty-fifth and fortieth parallels; from 2 to 5 days over the steamer lanes, east of the thirtieth meridian; on 1 day in the eastern section of the Gulf of Mexico; the middle section of the steamer lanes was practically clear.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure at sea level, 8 a. m. (seventy-fifth meridian). North Atlantic Ocean, December, 1930.

Stations	Average Pressure	Departure	Highest	Date	Lowest	Date
	<i>Inches</i>	<i>Inch</i>	<i>Inches</i>		<i>Inches</i>	
Julianehaab, Greenland.....	29.47	( <sup>1</sup> )	30.12	21st.....	28.86	3d.
Belle Isle, Newfoundland....	29.74	+0.04	30.54	5th.....	28.92	14th.
Halifax, Nova Scotia.....	29.95	+0.00	30.72	3d.....	29.30	9th.
Nantucket.....	29.99	-0.03	30.66	3d.....	29.48	27th.
Hatteras.....	30.06	-0.06	30.60	25th.....	29.68	27th.
Key West.....	30.07	-0.02	30.32	24th.....	29.88	22d.
New Orleans.....	30.17	+0.02	30.38	24th.....	29.82	5th.
Cape Gracias, Nicaragua.....	29.92	-0.06	29.98	10th <sup>1</sup> .....	29.80	22d.
Turks Island.....	30.05	-0.02	30.24	31st.....	29.88	5th.
Bermuda.....	30.00	-0.12	30.46	26th.....	29.64	8th.
Horta, Azores.....	30.36	+0.25	30.52	2d.....	30.06	31st.
Lerwick, Shetland Islands....	29.66	-0.06	30.36	22d.....	28.94	13th.
Valencia, Ireland.....	29.55	-0.09	30.64	21st.....	28.84	30th.
London.....	29.87	-0.15	30.59	19th.....	28.86	31st.

<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 dates.

On the 1st there was a stiff norther in the Gulf of Mexico—with barometric readings well over 30.30 inches on the coast of Texas—that was responsible for the wreck of the Mexican S. S. *San Francisco*, the passengers and crew being rescued by the Italian S. S. *Sangro*, Captain Staulese.

On the same day there was a low over Labrador and gales prevailed between the fortieth and fiftieth parallels,

while moderate northwest gales also occurred in the vicinity of the Azores, accompanied by comparatively high barometric readings. On the 2d the conditions had changed but little since the previous day, although on the 2d and 3d the winds in the vicinity of the Azores had increased in force, while on the 2d the barometer at Horta read 30.52 inches.

On the 5th there was a comparatively shallow depression over the Bermudas that afterwards deepened, and on the 6th moderate to strong gales prevailed between the fifty-fifth and seventieth meridians.

On the 8th a low was central near Cape Race, Newfoundland, that moved slowly northeastward, reaching its greatest intensity on the 10th when central near 55° N., 57° W., where westerly winds of force 8 to 10 were reported from the southerly quadrants. Continuing in its easterly course this disturbance was off the coast of Europe on the 13th, the storm area then extending from the fiftieth to sixtieth parallels. On the 14th the center was over the North Sea, and while it had decreased in extent and intensity, moderate northwesterly gales were still reported by a number of vessels.

On the 14th Hatteras was near the center of a depression that developed into a severe disturbance as it moved northeastward. On the 15th the center was about 150 miles south of Sable Island, where a barometric reading of 28.98 inches was recorded, and strong to whole gales occurred as far south as the thirty-fifth parallel. On the 16th and 17th this low was over the middle and eastern

sections of the northern steamer lanes, respectively, and on the latter date winds of hurricane force were encountered, as shown by reports in table of storms.

On the 18th northerly gales were reported from a limited area between the seventieth meridian and American coast, between Hatteras and Nantucket, and on the same day there was also a moderate disturbance central near 50° N., 25° W.

A low that was central near 42° N., 52° W., on the 19th moved rapidly northeastward, increasing in intensity and resulting in moderate to strong gales over the middle section of the steamer lanes from the 20th to 22d. This was followed by another low that on the 23d was central about 300 miles east of the Virginia Capes, with winds of force 7 near the center; by the 24th the storm area had increased in intensity and extent, and by the 25th strong to whole gales prevailed between the thirty-fifth and fortieth parallels and the fifty-fifth and sixty-fifth meridians.

Charts VIII to XI cover the period from the 26th to 29th, inclusive, and show the progress of this disturbance, as well as that off the coast of Europe.

On the 31st a low, central about 250 miles south of Newfoundland, was responsible for heavy weather between that locality and the Bermudas, and on the same day a second disturbance was central near 48° N., 30° W., with westerly winds of nearly hurricane force in the southerly quadrants.

OCEAN GALES AND STORMS, DECEMBER, 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>													
Iowan, Am. S. S.	New York	Canal Zone	35 42 N	74 28 W	Dec. 1	2 a, 1	Dec. 1	29.88	S	S, 7	SW	S, 10	Steady.
Lucia C, Ital. S. S.	Baltimore	Gibraltar	37 17 N	19 58 W	Dec. 1	11 p, 2	Dec. 4	29.97	NW	NNE, 10	NNE	NNE, 11	
Tiger, Nor. S. S.	Oslo	New York	45 45 N	54 24 W	Dec. 2	Noon, 2	Dec. 3	29.54	SSW	SW, 9	NW	W, 10	SSW-NW.
Saccarappa, Am. S. S.	Bremen	Charleston	34 40 N	62 00 W	Dec. 6	10 p, 6	Dec. 8	29.37	SE	SE, 8	NW	—, 10	SE-SW.
Winnebago, Br. S. S.	Manchester	Philadelphia	48 10 N	50 30 W	Dec. 8	4 p, 9	Dec. 11	28.79	SSW	SW, 9	W	SW, 10	SSW-W.
Sagaporack, Am. S. S.	Copenhagen	Portland, Me.	53 53 N	38 00 W	Dec. 8	—, 10	Dec. 15	28.90	WNW	WSW, 7	NNW	—, 10	SW-W.
Maine, Dan. S. S.	Newcastle	do	58 20 N	15 30 W	Dec. 12	3 a, 13	Dec. 18	28.49	WNW	WNW, 9	NW	—, 12	WSW-WNW.
Barendrecht, Du. S. S.	Charleston	London	35 55 N	72 35 W	Dec. 14	11 a, 14	Dec. 16	29.30	ESE	NE, 10	N	NW, 12	ESE-NW.
Victolite, Br. M. S.	Hull	Cartagena	37 40 N	64 34 W	Dec. 14	8 p, 14	Dec. 15	28.50	E	N, 5	NW	NW, 10	N-NW.
Ponce, Am. S. S.	San Juan	New York	36 10 N	72 30 W	Dec. 14	—, 15	Dec. 15	28.98	SE	NW, 12	NW	—, 12	SE-NW.
Pennsylvania, Du. S. S.	Newport News	Rotterdam	45 40 N	44 30 W	Dec. 15	2 p, 15	Dec. 16	29.31	SE	SSE, 8	WSW	SW, 10	S-SSW.
Tiger, Nor. S. S.	New York	Bergen	53 01 N	41 30 W	Dec. 15	Noon, 16	Dec. 17	28.47	SE	SSW, 10	WSW	SSW, 12	SSE-SSW.
Minnesotan, Am. S. S.	do	Canal Zone	36 08 N	73 40 W	Dec. 17	9 p, 17	Dec. 18	29.64	E	SE, 10	NNW	SE, 10	
Bergensfjord, Nor. S. S.	Bergen	New York	56 47 N	30 00 W	Dec. 16	4 a, 17	Dec. 17	28.85	SSW	SW	WSW	SW, 11	SSW-WSW.
Barendrecht, Du. S. S.	Charleston	London	40 22 N	53 14 W	Dec. 19	10 a, 19	Dec. 19	29.54	S	W, 7	NNW	N, 12	S-W-N.
Cingalese Prince, Br. M. S.	Port Said	Boston	42 30 N	45 54 W	Dec. 19	9 p, 19	Dec. 20	29.71	SE	SW, 10	NW	SW, 10	SW-WSW.
Sarcoxis, Am. S. S.	New York	Havre	44 30 N	55 11 W	Dec. 20	—, 21	Dec. 21	29.87	SE	S, 8	S	SSE, 10	SE-S.
Maine, Dan. S. S.	Newcastle	Portland, Me.	51 10 N	44 10 W	Dec. 22	8 a, 22	Dec. 23	29.68	NW	NW, 9	NW	—, 11	
Dordrecht, Du. S. S.	Bay Town	Manchester	33 54 N	74 39 W	Dec. 22	Midt, 22	Dec. 25	29.90	NW	NW, 9	NNW	NW, 10	
Nubian, Br. S. S.	Liverpool	Boston	53 00 N	29 00 W	Dec. 25	4 a, 25	Dec. 25	29.18	WSW	—, 10	W	—, 12	WSW-W.
Tulsa, Am. S. S.	Savannah	Liverpool	48 06 N	32 57 W	Dec. 26	6 a, 26	Dec. 26	29.02	SW	WSW, 12	NNW	WSW, 12	WSW-WNW.
West Kedron, Am. S. S.	Africa	Philadelphia	36 32 N	04 57 W	Dec. 27	7 p, 27	Dec. 27	29.28	S	SW, 10	NW	NNW, 11	W-SW.
Persephone, Danz. S. S.	Baytown	Denmark	48 00 N	41 28 W	Dec. 27	5 p, 27	Dec. 28	29.76	WSW	W, 11	NNW	NNW, 11	WSW-NNW.
Gonzenhelm, Ger. S. S.	Galveston	Bremen	41 34 N	48 24 W	Dec. 27	5 p, 28	Dec. 29	29.32	S	SW, 7	W	S, 12	
Nubian, Br. S. S.	Liverpool	Boston	47 30 N	46 40 W	Dec. 28	4 a, 29	Dec. 29	29.14	WSW	—, 10	WSW	—, 12	Steady.
Ensley, City Am. S. S.	do	Baltimore	36 31 N	71 39 W	Dec. 30	Noon, 30	Dec. 31	29.46	W	W, 6	NW	WNW, 10	W-WNW.
Quaker City, Am. S. S.	Hull	Philadelphia	51 32 N	1 50 E	Dec. 30	2 p, 30	Dec. 31	29.19	SSW	—, 7	N	W, 12	
Coldwater, Am. S. S.	Antwerp	Charleston	33 10 N	59 15 W	Dec. 27	6 a, 31	Dec. 31	29.59	S	S, 8	NW	—, 11	S-W.
Emile Franquai, Belg. S. S.	do	New York	48 20 N	29 45 W	Dec. 31	4 a, 31	Dec. 31	28.91	W	W, 5	W	W, 11	
Samland, Belg. S. S.	do	do	43 15 N	50 03 W	Dec. 31	10 p, 31	Jan. 1	28.00	WNW	WNW, 9	WNW	NW, 11	WNW-NW.