

551.506 (261.1) WEATHER IN NORTH AMERICA AND ADJACENT OCEANS.
NORTH ATLANTIC OCEAN.

By F. A. YOUNG.

The average pressure for the month was nearly normal or slightly above at land stations on the American and greater part of the European coast, as well as in the West Indies, the Bermudas, and Azores, while it was somewhat lower than usual at stations on the east coast of England.

The number of days on which fog was reported was apparently below the normal over the Banks of Newfoundland and along the steamer lanes, while it was more frequent than usual off the north coast of Scotland.

The number of days with winds of gale force was not far from the normal as shown on the Pilot Chart, and they did not occur on more than two days in any 5° square.

On the 1st there was a LOW in the vicinity of Nova Scotia; it moved slowly eastward and on the 3d was central near latitude 53 N., longitude 42 W. This disturbance was of limited extent and not especially severe, although a few vessels experienced winds of gale force, as shown by following storm logs and special report.

American S. S. Texarkana:

Gale began on the 1st, wind SW. Lowest barometer 29.92 inches at 8 a. m. on the 2d, wind SW; position, latitude 41° 42' N., longitude 47° 45' W. End of gale at noon on the 2d, wind SW. Highest force of wind 8, SW.; steady from SW.

American S. S. Dochet:

Gale began on the 2d, wind S., 6. Lowest barometer 29.70 inches at 4 a. m. on the 3d, wind WSW., 6; position, latitude 47° 40' N., longitude 38° 30' W. End of gale on the 4th, wind NW. Highest force of wind 8, W.; shifts WSW.-W.

British S. S. Bellena:

On the 3d and 4th in latitude 38° 58' N., longitude 52° W., ran into a fresh gale which commenced about 8 p. m. on the 3d, with the wind SW., increasing rapidly and barometer falling rapidly from 30.11 inches at noon to 29.92 inches at 8 p. m.; sea rough and weather squally. At 11 p. m. wind shifted to NW. by W. in heavy rain squall and increased to hard gale, force 8; sea becoming very high and confused. It continued to blow fresh gale with force 7 to 8 until 1:30 a. m. on the 4th, with the barometer at 29.86 inches at midnight. At 1 a. m. barometer began to rise slowly and at 1:30 the wind moderated rapidly, with decreasing sea. At 3 a. m. the wind was force 3 and had backed to south; by noon it had increased to force 5, barometer 29.92 inches. At 9:40 p. m. wind veered to NE., moderating rapidly; weather fine with rising barometer.

The movement of this LOW from the 3d to the 4th was slight, and on the latter date there was but little change in the barometer readings near the center, where light to moderate winds prevailed. On the 5th there was a slight disturbance off the south coast of Ireland, as shown by the storm log from the American S. S. *Assinippi*:

Gale began on the 5th, wind SSW. Lowest barometer 29.76 inches at 3 a. m. on the 5th, wind SSW., 8; position, latitude 49° 12' N., longitude 12° 07' W. End of gale on the 5th, wind W. Highest force 8, SSW.; steady from SSW.

At Greenwich mean noon on the 5th there was a LOW central near the 40th parallel and 50th meridian; at that time moderate winds prevailed, although the American S. S. *Clifford*, while in that vicinity, encountered a gale of hurricane force in the afternoon of the 5th, as shown in the following report:

Disturbance came during heavy downpour of rain. Wind blew from every point of the compass, forming a circle that blew water to the center. Clouds and sea shifted with wind. Cyclonic winds lasted about 20 minutes, followed by a downpour of rain. Moderate variable winds for 30 minutes, then steady from the NE. at 7 p. m., increasing to fresh gale; barometer rapidly rising. At 11 p. m. wind suddenly decreased to moderate breeze. Lowest barometer 29.73 inches at 4 p. m., wind NE., 8. Highest force 12.

This LOW remained practically stationary during the next 24 hours, and on the 6th moderate winds were the rule, as only the British S. S. *Ventura de Larringa* reported heavy weather, as shown by the following storm log:

Gale began on the 4th, wind WSW. Lowest barometer 29.80 inches at 6 a. m. on the 6th; position, latitude 36° 05' N., longitude 50° 25' W. End of gale on the 6th, wind ENE. Highest force 8, N.; shifts SSW.-W.-NE.-N.

From the 7th to the 14th there were no disturbances of any consequence, and during the latter part of this period the Azores HIGH was unusually well developed.

On the 15th there was a slight depression over Nova Scotia and moderate northwesterly gales were encountered between the 35th and 42d parallels and the 63d and 66th meridians. Report from the Belgian S. S. *Eglantier* follows:

From 12 to 4 a. m. on the 15th lightning on the horizon. Between WSW. and WNW. At 7 a. m. heavy squalls from the SW.; force of wind from 6 to 9. Began to moderate at noon.

On the same day there was a second LOW central about 400 miles west of the Irish coast. At Greenwich mean noon on the 15th only light to moderate winds were reported, although the American S. S. *Eastern Belle* ran into a gale later in the day as shown by her storm log:

Gale began on the 15th, wind WNW. Lowest barometer 29.60 inches at 6 p. m. on the 15th, wind WSW, 8; position, latitude 52° 05' N., longitude 19° 55' W. End of gale on the 16th, wind NW. Highest force 8, NW; shifts SSW-NW.

This disturbance moved but little during the next 24 hours; by the 16th it had increased somewhat in intensity, and the storm area in extent. Storm logs follow:

American S. S. Jackson:

Gale began on the 15th, wind WNW. Lowest barometer 29.88 inches at 4 a. m. on the 16th, wind W, 8; position, latitude 49° 38' N., longitude 19° 45' W. End of gale on the 16th, wind NW. Highest force 8, W; shift 2 points.

American S. S. Worcester:

Gale began on the 15th, wind SW. Lowest barometer 29.77 inches at 4:35 a. m. on the 16th, wind SSW, 8; position, latitude 53° 02' N., longitude 40° 48' W. End of gale on the 17th, wind SSW. Highest force 8, SSW; steady from SW.

On the 17th there was an area of low pressure over the southern part of the British Isles and a limited region between the 45th and 50th parallels and the 15th and 20th meridians was swept by moderate northerly to northwesterly gales.

At Greenwich mean noon on the 18th and 19th moderate weather prevailed over practically the entire ocean, although in the period between these hours the American S. S. *Volunteer* encountered a southwesterly gale, as shown by following storm log:

Gale began on the 19th, wind S. Lowest barometer 29.74 inches at 2 a. m. on the 19th, wind 8; position, latitude 41° 40' N., longitude 62° 55' W. End of gale on the 19th, winds WSW. Highest force 9; steady from WSW.

From the 20th to the 25th there was another period of inactivity, with high pressure and slight barometric gradients over the greater part of the ocean, although shortly after Greenwich mean noon on the 24th the Belgian S. S. *Nervier* ran into a southerly gale about 300 miles south of St. Johns, Newfoundland. Storm log follows:

Gale began on the 24th, wind SSW. Lowest barometer 29.84 inches at 8 p. m. on the 24th, wind SSW, 9; position, latitude 43° 20' N., longitude 53° 03' W. End of gale on the 25th. Highest force of wind 10, SSW; shifts SSW-W-N.

On the 25th and 26th quiet weather prevailed over all the ocean except for a disturbance of limited extent off the Irish Coast.

Charts IX, X, XI, and XII show the conditions on the 28th, 29th, 30th, and 31st, respectively, when there was a slow moving and well defined low over the eastern section of the steamer lanes.

The U. S. Shipping Board steamer *Ingold*, Captain Morgan, cleared from Glasgow for Norfolk on the 24th. She encountered unusually stormy weather for a period extending well into September, as shown by a very comprehensive report submitted by Mr. R. A. A. Ostrom, second officer:

The heavy weather began at midnight on the 25th, wind NW.; force 8, barometer 29.97 inches. At noon on the 26th, position, latitude 55° 27' N., longitude 9° 32' W., the wind shifted to SW., 8, and then increased in velocity, as at 4 p. m. the direction and force were W., 12; barometer 29.61 inches.; 8 p. m. SW., 12; 29.58 inches. Midnight NW., 12; 29.71 inches; 4 a. m., on the 27th, SW., 12; 29.74 inches. Position at noon on the 27th, latitude 55° 06' N., longitude 12° 48' W. From 8 a. m. on the 27th until 8 a. m. on the 29th the wind direction varied from WNW. to WSW., the force from 5 to 9, and the barometric readings from 29.75 inches to 29.93 inches. At 9 a. m. on the 29th a shift of 180 degrees from west to east occurred. The wind then began to veer, increasing slowly in force, and at 10 a. m. on the 30th the direction was SE., 9; barometer 29.51 inches. There was another shift at 11 a. m., when the lowest barometric reading of 29.47 inches occurred, and at 2 p. m. the direction and force were NW., 10; barometer, 29.52 inches. These conditions remained fairly constant until 5 a. m. on the 31st, when the weather began to moderate and the barometer had risen to 29.88 inches. The noon positions of the vessel are as follows: 29th, latitude, 49° 53' N., longitude 20° 50' W; 30th, latitude 48° 57' N., longitude 25° 30' W; 31st, latitude 46° 51' N., longitude 29° 44' W.

The *Ingold* also had the unique experience of being badly shaken up by a waterspout, as Mr. Ostrom reports that at about 8 a. m. on the 30th a terrific gust of wind struck the vessel, being violent enough to hurl the man at the wheel 15 feet and swing the ship around. Immediately afterward a waterspout was sighted off the starboard bow.

Vessel storm logs follow:

Belgian S. S. *Londonier*:

Gale began on the 28th, wind E. Lowest barometer 29.34 inches at 2 p. m. on the 28th, wind NNE.; position, latitude 47° 38' N., longitude 37° 47' W. End on the 29th, wind NNE. Highest force 12, ENE.; shifts not given.

British S. S. *Zeeland*:

Gale began on the 28th, wind SW. Lowest barometer 29.28 inches at 11:20 p. m. on the 29th, wind SW.; position, latitude 47° 20' N., longitude 29° 31' W. End on the 30th, wind NW. Highest force 10; shifts SW.-W.-NW.

British S. S. *Glensloy*:

Gale began on the 30th, wind SE. Lowest barometer 29.35 inches at 4 p. m. on the 30th, wind SE.; position, latitude 50° 30' N., longitude 21° 50' W. End on the 31st, wind SW. Highest force 11; shifts S-SSW.

551.506 (265.2)
NORTH PACIFIC OCEAN.

By F. G. TINGLEY.

Pressure was below normal at Dutch Harbor during the first decade of the month, the departure for this period being approximately -0.28 inch. The lowest barometer reading, 29.20 inches, was recorded on the 3d. During the second and third decades pressure was generally above normal, with the highest reading 30.28 inches, recorded on the 31st.

At Midway Island pressure was above normal by some 0.05 inch during the first and second decades and below normal by 0.10 inch during the last decade. Departures at Honolulu were similar to those at Midway Island, but the amounts were smaller.

Over the central and eastern portions of the ocean August was a very quiet month. In these waters but

three vessels experienced winds of gale force. The Japanese S. S. *Tokushima Maru*, Capt. S. Shibutami, Yokohama for Vancouver, had moderate S. to SW. gales on the 3d and 4th when in latitude 51°-50° N., longitude 141°-135° W. The Danish M. S. *Indien*, Capt. H. Jacobsen, observer, H. V. Lingaae, San Diego for Panama, had gales on the 17th and 18th, reports of which are as follows:

Gale began on the 17th; lowest barometer 29.63 inches at 4 a. m. of the 18th in latitude 19° 39' N., longitude 106° W.; wind at that hour ESE., force 9, with heavy NW. sea; end of gale on 18th; shifts of wind, SE., ESE., E., ESE.; highest force, 9, ESE.

Gale began on the 20th; lowest barometer 29.68 inches at 2 a. m. of the 21st; wind N. by E., force 8, with heavy sea from S.; end of gale on 21st; shifts of wind, ENE., NNE., N.; highest force, 8, N. by E.

The Chinese S. S. *Hwah Ding*, Capt. J. Thorvig, observer, M. Blaise, Honolulu for Panama, experienced a moderate to fresh SE. gale with a heavy sea on the 30th, when in latitude 17° 52' N., longitude 116° W.

In Asiatic waters the most important feature of the weather of the month was the typhoon of the 14th-21st. This typhoon appears to have formed in the region between the Bonin Islands and Guam and was first noted on the 14th. Warnings regarding it were broadcast from various radio stations during the period from the 14th to the 19th. Capt. C. Ericksen, of the American S. S. *West Coyote*, Portland for Moji, has furnished the following report of those received aboard his vessel:

Date August, 1921.	Time.	Latitude N.	Longitude E.	Barometer at center.	Direction.	Radio station.
		°	°	Inches.		
14.....	6 a. m.....	22	142	29.13	wnw.	Otchishshi.
14.....	12 noon.....	23	142	28.98	wnw.	Funabashi.
15.....	6 a. m.....	25	142	28.50	nw.	Otchishshi.
15.....	12 noon.....	27	141	28.25	nw.	Choshi.
16.....	6 a. m.....	29	138	28.50	nw.	Do.
16.....	12 noon.....	29	136	28.50	wnw.	Otchishshi.
16.....	6 p. m.....	29	134	28.74	wnw.	Do.
17.....	6 a. m.....	29	132	28.74	w.	Do.
17.....	12 noon.....	29	131	28.74	w.	Choshi.
17.....	6 p. m.....	30	131	28.74	w.	Dairenwan.
18.....	6 a. m.....	30	130	28.74	wnw.	Maizuru.
18.....	12 noon.....	30	129	28.74	w.	Do.
19.....	6 a. m.....	29	128	28.58	w.	Tsunoshimi.
19.....	12 noon.....	28	127	28.60	w.	Shimotsul.
19.....	6 p. m.....	29	127	29.06	w.	Dairenwan.

Capt. Ericksen states that the reports were plotted on a chart and the movements of the typhoon carefully followed.

This typhoon followed an altogether unusual track, as will be seen by comparing the position from day to day, as given above, with the tracks for August typhoons shown in the MONTHLY WEATHER REVIEW for February, 1921.¹

According to press dispatches the typhoon appears to have passed inland on the China coast a short distance to the south of Shanghai some time prior to the 23d. The following account of the losses caused is taken from the *New York Sun* of August 24, 1921:

Shanghai, China, August 23.—Fears that a death list running as high as 10,000 has resulted from typhoons around Kingpo on the coast and on the Yangste River were expressed by relief workers to-day.

All communication with the district has been severed.

Two European steamers were reported driven aground on the Shanghai bar and several hundred junks were swamped.

Several vessels were more or less involved in this typhoon and have furnished reports of conditions experienced as follows:

Japanese S. S. *Taiyo Maru*, Capt. S. Togo, observer, M. Nitta, Hongkong for San Francisco.

Gale began on the 18th; lowest barometer 29.26 inches at 3 a. m. of the 19th, in latitude 32° 12' N., longitude 127° E.; wind at that hour, NE. by N., force 10, with a high NNE., sea; gale ended on 19th; highest force of wind, 11, NE. by N.

¹ Reproduction of August Charts from Atlas of the Tracks of 620 Typhoons, 1898-1918, by Louis Froc, S. J.