

Date.	Solar constant.	Method.	Grade.	Transmission coefficient at 0.5 micron.	Humidity.			Remarks.
					$\rho/\rho_{SC}$ .	V. P.	Rel. hum.	
1920.								
A. M.	cal.							
Apr. 20	1.957	M <sub>2</sub> .....	S	0.853	0.438	cm. 0.36		
	1.960	M <sub>2</sub> .....						
	1.955	M <sub>1.5</sub> .....						
	1.958	W. M.						
21	1.929	M <sub>2</sub> .....	S-	.847	.408	.43	39	Cirri around most of horizon. Probably smoke from Chuqui affected M <sub>2</sub> and M <sub>1.5</sub> observations.
	1.943	M <sub>2</sub> .....						
	1.934	M <sub>1.5</sub> .....						
	1.937	W. M.						
22	1.935	E <sub>0</sub> .....	VG-	.856	.492	.38	39	Chuqui smoke affected earlier observations.
	1.965	M <sub>2</sub> .....						
	1.935	M <sub>2</sub> .....						
	1.964	M <sub>1.5</sub> .....						
	1.949	W. M.						
23	1.966	M <sub>2</sub> .....	S-	.856	.456	.29	26	Cirri in north. Chuqui smoke interfered. Also dust clouds in M <sub>2</sub> .
	1.950	M <sub>2</sub> .....						
	1.934	M <sub>1.5</sub> .....						
	1.950	W. M.						
24	1.948	M <sub>1.5</sub> .....	S-	.860	.635	.34	20	Cirri scattered about sky, preventing earlier observations. Chuqui smoke and dust from gusty east wind bad.

Date.	Solar constant.	Method.	Grade.	Transmission coefficient at 0.5 micron.	Humidity.			Remarks.
					$\rho/\rho_{SC}$ .	V. P.	Rel. hum.	
1920.								
A. M.	cal.							
Apr. 25	1.956	M <sub>2</sub> .....	S	0.849	0.406	cm. 0.29		
	1.945	M <sub>2</sub> .....						
	1.949	W. M.						
26	1.953	E <sub>0</sub> .....	VG+	.858	.446	.30	26	
	1.970	M <sub>2</sub> .....						
	1.957	M <sub>2</sub> .....						
	1.957	M <sub>1.5</sub> .....						
	1.960	W. M.						
27	1.954	M <sub>2</sub> .....	S-	.826	.446	.29	25	Smoke from Chuqui. Wind carried dust during M <sub>2</sub> .
	1.948	M <sub>2</sub> .....						
	1.948	M <sub>1.5</sub> .....						
	1.949	W. M.						
28	1.943	M <sub>1.5</sub> .....	S-	.850	.518	.39	16	Thin cirri in east. Cumuli forming over mountains. Probably Chuqui smoke early.
29	1.975	M <sub>2</sub> .....	S	.850	.525	.33	18	Cirri in northeast and west. Chuqui smoke early in morning.
	1.969	M <sub>1.5</sub> .....						
	1.972	W. M.						
30	1.960	M <sub>1.5</sub> .....	S-	.852	.634	.35	19	Distant cirri in west. Dust interfering with observations. Probably some smoke.
	1.959	M <sub>1.5</sub> .....						
	1.959	W. M.						

WEATHER OF THE MONTH.

WEATHER OF NORTH AMERICA AND ADJACENT OCEANS.

GENERAL PRESSURE CONDITIONS.

By H. C. FRANKENFIELD, Supervising Forecaster.

(Dated June 15, 1920.)

*North Pacific Ocean.*—At Midway Island pressure was below normal throughout the month, except on May 29, with a great depression (29.56 inches), on May 4, and another of somewhat less intensity (29.70 inches), on May 10. Pressure was also low at Honolulu during the month, except from May 12 to 15, inclusive, when it was about normal.

*Alaska.*—Over northern Alaska and the Aleutian Islands reverse conditions prevailed, except on a few days, with principal crests of high pressure during the first week of the month and about May 25. Over central Alaska moderately high pressure also prevailed, except between May 15 and 25, when it was low, while over southern Alaska changes were not very decided, with a tendency toward slightly below normal conditions, except between May 9 and 15 and at the close of the month.

*United States.*—There were no great HIGHS or LOWS during the month, and the general pressure distribution may be roughly divided into two periods, one of moderately high pressure, a part of the Alaska and Aleutian high that moved southeastward across the Canadian Northwest and the western portion of the United States during the first half of the month, gradually transferring itself over eastern Canada and the eastern portion of the United States during the first 10 days of the second half of the month, and another of rapidly alternating high and low pressure within very moderate limits that followed the high pressure over the western portion of the country during the second half of the month, reaching the Atlantic coast during the closing days.

*North Atlantic Ocean.*—Stations of observation at Bermuda and Horta. Moderately high pressure pre-

vailed during the first three weeks of the month, and low pressure thereafter, with a marked depression on May 24 and 25.

NORTH PACIFIC OCEAN.

By F. G. TINGLEY.

Atmospheric conditions over the North Pacific Ocean showed greater activity during May than in April. Several well-developed depressions occurred during the month of which perhaps the most important was that which prevailed from the 11th to the 15th over the region south and southeast of the Aleutian Islands. The Japanese S. S. *Kinkasan Maru*, Capt. Gillespie, from Meike for San Francisco, encountered this storm, and on May 12, when in latitude 45° 20' N., 158° 42' W., reported as follows:

Strong to whole gale, very high sea. Ship laboring and straining heavily. Glass fell to 28.95 (28.88 inches, corrected) at 6 p. m., which was the lowest.

It is possible that this storm was a redevelopment of one which prevailed from the 4th to the 7th west and northwest of Midway Islands and which caused at times winds reaching the force of a strong gale.

In Asiatic waters pressure was moderately low during the month, with a succession of depressions moving northeastward over the Japanese islands. Of these, the principal one appears to have been that of the 24th to 26th. On the 25th a barometer reading of 28.91 inches was reported by a ship immediately to the eastward of the Tsugura Strait.

Pressure was much above the normal over Bering Sea during the first and third decades and moderately so during the second decade. From May 1 to 10 the average pressure at Dutch Harbor was 30.36 inches—approximately one-half inch above the normal. It is

probable that the presence of this high pressure was responsible for the unusual amount of fog reported by vessels on the northern steamer route, as well as for the dense cloudiness frequently experienced.

#### NORTH AMERICA.

By H. C. FRANKENFIELD, Supervising Forecaster.

As indicated in the general discussion above, pressure distribution during the month of May was not of decisive character. On the whole, pressure somewhat above normal prevailed, with resulting low temperatures over the greater portion of the country, only the Southwest, a small section of the near Northwest, and the southern districts west of the Rocky Mountains reporting a slight excess. There were no severe storms, but precipitation was in excess over the Gulf and Plains States and the upper Mississippi Valley, Elsewhere it was deficient.

#### NORTH ATLANTIC OCEAN.

By F. A. Young.

The average pressure for the month was considerably above the normal at land stations on the American and northern European coasts, as well as the Azores, while it was below in the West Indies and Gulf of Mexico.

According to reports received the number of days on which gales occurred over the steamer lanes was not far from the normal, although nearly all of the severe weather was confined to two periods in the first and second decades, respectively, while during the remainder of the month comparatively moderate conditions prevailed.

Fog was apparently somewhat less prevalent than usual over the greater part of the ocean, except in the vicinity of the British Isles, where it was reported on from six to seven days, which is somewhat above the normal.

Charts IX to XII, covering the period from May 2 to 5, inclusive, show a disturbance over the steamer lanes that was especially severe on May 4 and 5.

The storm log from the British S. S. *Chipawa* is as follows:

Gale began on the 2d. Lowest barometer reading, 29.49 inches, at 4 a. m. on the 3d; position, 42° 35' N., 41° 20' W. End of gale on the 4th. Highest force, 10; shifts of wind near time of lowest barometer SW-W by S.

The observer on the British S. S. *Derwent River* states:

Gale began on the 4th. Lowest barometer, 29.50 inches, at 2 p. m. on the 4th; position, 47° 20' N., 35° 15' W. End of gale on the 6th. Highest force of wind, 9; shifts of wind WSW-NW.

From the 6th to the 12th the conditions over the ocean were nearly normal, and only a few scattered reports were received denoting winds of gale force. On the 13th the British S. S. *Cairndhu* was the only vessel reporting gales; her storm log is as follows:

Gale began on the 13th. Lowest barometer reading, 29.10 inches, at noon on the 13th; position, 51° 34' N., 43° 17' W. End of gale 4 p. m. on the 14th. Highest force of wind, 10. [No shifts of wind given.]

Charts XIII and XIV for May 17 and 18, inclusive, show the nearly stationary depression central off the British Isles, and the storm area of limited extent over the eastern part of the steamer lanes. The storm log from the British S. S. *Galtymore* is as follows:

Gale began on the 17th. Lowest barometer reading, 29.65 inches, at 10 a. m. on the 17th; position, 49° 48' N., 25° 18' W. End of gale on the 18th. Highest force of wind 10; shift of wind near time of lowest barometer W-NW-N. The observer on the American S. S. *Triumph* states:

Gale began on the 17th. Lowest barometer, 29.53 inches, at 3 a. m. on the 18th; position 49° 38' N., 11° 00' W. End of gale on the 19th. Highest force of wind 10; shifts of wind WSW-W by S-W.

From the 19th to the 30th the conditions were comparatively featureless, light to moderate winds prevailing over the entire ocean during that period. Fog was reported on the Banks of Newfoundland from the 19th to the 23d, and off the British coast from the 21st to the 29th. On the 31st two vessels between the 35th and 40th parallels and the 40th and 50th meridians experienced moderate gales, while moderate weather prevailed over the rest of the ocean, with fog in the middle and western sections of the steamer lanes.

#### NOTES ON WEATHER IN OTHER PARTS OF THE WORLD.

*Great Britain.*—The exceptionally severe and widespread thunderstorms at the end of the month will long be remembered, but for the most part the weather, though wet, was cool, there being no thundery hot weather until the 20th.

\* \* \* During the first 11 days the atmospheric conditions were decidedly chilly, and there was frost \* \* \* at many inland stations. On the 1st, at Eskdalemuir, a shade minimum of 21° F. was recorded, with 13° F. on the ground. Sleet was also reported at some of the southern stations during these early days, but milder conditions gradually prevailed, and after the 11th the thermometer seldom fell below the freezing point. \* \* \*

Soon after the 20th warm weather became general, and conditions for about a week, especially over southern and eastern England, were very fine, sunny, and warm. \* \* \* On the 26th and 27th a long valley of relatively low pressure was stretched across England and the Netherlands, and within this belt violent thunderstorms occurred [especially on the 29th]. \* \* \* At Shrewton, Wilts, 12 mm. [of rain] fell in 10 minutes, and

at Nettlebed, Oxon, 44 mm. in 45 minutes. \* \* \* In Lancashire and Lincolnshire \* \* \* there were floods which caused loss of life and serious damage to property. \* \* \* [At Hallington, 4.10 in. fell in two hours, when the gauge overflowed and the exact total fall was lost. The Lud stream, normally 3 ft. wide and 1 ft. deep, was swollen to a width of 52 yards and a depth of 50 ft.] The general rainfall expressed as a percentage of the average was: England and Wales, 117; Scotland, 164; Ireland, 145.

In London (Camden Square) the \* \* \* mean temperature was 57.5° F., or 3.5° F. above the average. The duration of rainfall was 20.5 hours. \* \* \*<sup>1</sup>

*Southern Europe.*—\* \* \* Under the influence [of anticyclonic conditions] high day temperatures were recorded at many stations, 90° F. at Clermont and Biarritz on the 11th and at Perpignan on the 27th and 29th, and 94° F. at Clermont on the 28th. Both Madrid and Lisbon recorded 86° F. on the 8th, and on the 21st Rome reached 91° F., a temperature not exceeded in May since 1834.<sup>1</sup>

<sup>1</sup> *The Meteorological Magazine*, June, 1920, pp. 99 and 104.