OCEAN GALES AND STORMS, AUGUST 1935—Continued

Vessel	Voyage From—	Voyage To—	Position at time of lowest barometer Latitude	Position at time of lowest barometer Longitude	Gale began August—	Time of lowest barometer August—	Gale ended August—	Lowest barometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Direction and highest force of wind	Shifts of wind near time of lowest barometer
NORTH PACIFIC OCEAN			° ′	° ′				*Inches*					
Madoera, Du. M. S.	Manila	Los Angeles	35 06 N.	153 48 E.	5	10a, 4	6	29.70	ESE	SE, 4	ESE	SE, 8	None.
Steel Voyager, Am. S. S.	Los Angeles	Balboa	17 50 N.	103 00 W.	5	4p, 5	6	29.78	E	ESE, 7	ESE	ESE, 9	Do.
Arizonan, Am. S. S.	Balboa	Los Angeles	20 33 N.	106 53 W.	5	5p, 6	7	29.79	ESE	SE, 8	ENE	SE, 9	Do.
Athelsultan, Br. M. S.	San Francisco	Yokohama	36 09 N.	171 00 W.	6	Mdt., 6	6	29.80	SSE	S, 5	S	S, 8	SSE-SSW.
U. S. Grant, U. S. A. T.	do	Balboa	20 51 N.	108 03 W.	7	2p, 7	8	29.70	ESE	ESE, 8	SSE	ESE, 8	None.
William A. McKenney, Am. S. S.	Los Angeles	do	[1] 21 14 N.	107 46 W.	6	4p, 7	8	[2] 29.70	SSE	SE, 8	SSE	SE, 9	Do.
San Rafael, Am. S. S.	do	do	22 20 N.	109 09 W.	7	4a, 8	9	29.61	E	SE, 7	S	SE, 8	E-SE.
Ogura Maru, Jap. M. S.	Estero Bay	Yokohama	35 58 N.	167 52 W.	8	11a, 8	8	29.94	S	S, 10	S	S, 10	
St. Mihiel, U. S. A. T.	Balboa	Honolulu	15 47 N.	109 43 W.	8	4p, 8	9	29.72	S	SSW, 8	S	SSW, 9	None.
Steel Mariner, Am. S. S.	Los Angeles	Balboa	24 42 N.	112 30 W.	9	4a, 9	9	29.62	E	E, 8	ESE	ESE, 8	
Athelsultan, Br. M. S.	San Francisco	Yokohama	[1] 35 52 N.	166 12 E.	12	4p, 12	12	29.37	SSW	SW, 9	W	SW, 9	S-SW-W.
Golden Horn, Am. S. S.	do	do	46 42 N.	174 39 E.	15	10a, 15	15	29.58	WSW	W, 6	W	W, 8	SW-W.
Forbes Hauptman, Am. S. S.	Los Angeles	Balboa	17 02 N.	101 32 W.	18	5p, 18	20	29.56	SW	WNW, 3	NW	SSW, 10	NW-SSW.
Steel Traveler, Am. S. S.	Balboa	Honolulu	11 36 N.	94 58 W.	17	4p, 19	20	29.79	SW	SW, 7	SSW	SW, 9	SW-W.
Steel Trader, Am. S. S.	San Diego	Balboa	14 42 N.	96 06 W.	19	4a, 20	20	29.76	WSW	W, 7	W	WSW, 8	WSW-W.
San Jose, Fr. S. S.	Los Angeles	do	17 48 N.	103 21 W.	20	6p, 20	21	29.63	ENE	ENE, 7	ESE	SW, 9	N-ENE-SW.
Harry Luckenbach, Am. S. S.	Balboa	Los Angeles	20 44 N.	107 23 W.	20	3p, 21	21	29.30	SE	NE, 10	NE	E, 11	N-NE-E.
Edgar F. Luckenbach, Am. S. S.	Los Angeles	Balboa	18 34 N.	104 28 W.	21	4a, 21	21	29.39	NE	ESE, 6	S	SSE, 9	NE-ESE-S.
Montanan, Am. S. S.	do	do	20 39 N.	107 18 W.	21	3p, 21	22	29.42	ENE	E, 10	SE	SE, 11	N-E-SSE.
Virginia, Am. S. S.	do	do	20 30 N.	107 24 W.	21	5p, 21	22	29.12	NW	ESE, 11	ESE	ESE, 11	NW-E-S.
Hakonesan Maru, Jap. M. S.	do	do	19 40 N.	106 00 W.	21	9a, 21	22	29.29	N	SE, 11	SE	SE, 11	N-SE-S.
West Cactus, Am. S. S.	do	do	23 52 N.	112 31 W.	23	3p, 23	23	29.32	NNE	NNW, 11	WSW	NW, 11	NNE-NW.
City of San Diego, Am. M. S.	Fishing grounds out from San Diego.		24 38 N.	111 55 W.	22	4p, 23	24	29.59	ENE	ESE, 9	S	SSE, 11	E-ESE-SE.
Pres. Grant, Am. S. S.	Seattle	Yokohama	51 24 N.	170 36 W.	21	1a, 22	24	29.49	SW	S, 8	W	W, 8	SW-S-WSW.
Athelsultan, Br. M. S.	Yokohama	San Francisco	42 35 N.	167 00 W.	30	2a, 31	30	29.59	S	S, 7	S	S, 8	S-SW.

[1] Position approximate.

[2] Barometer uncorrected.

NORTH PACIFIC OCEAN, AUGUST 1935

By WILLIS E. HURD

Atmospheric pressure.—Practically normal barometric conditions prevailed over the North Pacific Ocean during August 1935. The greatest monthly departures from normal occurred in the western Aleutian region, +.08 inch, and at Midway Island, —.08 inch. The greater part of the eastern half of the ocean, except to the southward of the Hawaiian Islands in midocean, and south of Cape Mendocino, along the North American coast, was dominated by anticyclonic conditions. Low pressure prevailed over the Far East. The Aleutian LOW, shallow as in the preceding month, lay over the Bering Sea.

TABLE 1.—*Averages, departures, and extremes of atmospheric pressure at sea level, North Pacific Ocean, August 1935, at selected stations*

Stations	Average pressure	Departure from normal	Highest	Date	Lowest	Date
	Inches	*Inch*	*Inches*		*Inches*	
Point Barrow	29.97	+0.08	30.36	12	29.48	2
Dutch Harbor	29.93	+.07	30.58	2	29.30	24
St. Paul	29.86	+.08	30.60	12	29.26	23
Kodiak	29.95	+.09	30.34	12	29.64	23
Juneau	30.00	—.02	30.35	26	29.49	5
Tatoosh Island	30.06	+.06	30.34	11	29.81	17
San Francisco	29.89	—.03	30.01	7	29.75	19
Mazatlan	29.83	—.01	29.92	12, 13	29.58	21
Honolulu	30.01	.00	30.08	4	29.91	10
Midway Island	30.00	—.08	30.14	20	29.72	6
Guam	29.80	—.02	29.90	8, 9	29.60	21
Manila	29.77	+.03	29.88	10	29.62	4
Hong Kong	29.64		29.86	19	29.29	6
Naha	29.71	+.02	29.92	18	29.44	26
Chichishima	29.82	+.06	29.98	30	29.58	7
Nemuro	29.82		30.14	15	29.22	29

NOTE.—Data based on 1 daily observation only, except those for Juneau, Tatoosh Island, San Francisco, and Honolulu, which are based on 2 observations. Departures are computed from best available normals related to time of observation.

Cyclones and gales.—Outside of the Tropics, although there was some cyclonic activity in middle and higher latitudes to the westward of longitude 160° W., few gales resulted. These occurred on scattered dates and in scattered positions and, except in two instances, did not exceed force 8. The two heavier gales were reported as follows: Of force 10 from the south on the 8th, near 36° N., 168° W., and of force 9 from the southwest on the 12th, near 36° N., 167° E. A moderately deep cyclone moved eastward at some distance south of the Aleutians, 29th to 31st, but was attended only by widely separated moderate to fresh gales. Along the coast of the United States a fresh northerly gale was experienced on the 14th northwest of San Francisco.

Typhoons.—Subjoined is a report on the typhoons of the Far East for August 1935 prepared by the Rev. Bernard F. Doucette, S. J., of the Philippine Weather Bureau. The only additional comment worthy of place here pertains to the typhoon of July 31–August 12 which struck southwestern Japan on the 11th. A press report of that date from Tokyo said that central Japan was ravaged by the storm and attendant floods which left some 200,000 persons homeless and damaged property to the extent of more than a million dollars.

Cyclones off the west coast of Mexico.—Two cyclones developed in Mexican west coast waters during the month. The earlier first appeared on the 5th near 18° N., 103° W. It followed a general west-northwesterly course and was lost to observation on the 9th, near 25° N., 113° W. The highest wind reported in connection with it was of force 9, near 18° N., 103° W., on the 5th, and near 21° N., 107–108° W., on the 6th and 7th. The lowest barometer reported was 29.61, read on the American steamship *San Rafael* near 22° N., 109° W., on the 8th.

The later cyclone originated to the southward of the Gulf of Tehuantepec on the 17th. From the 18th to 20th, scattered westerly to southwesterly gales, varying in force from 7 to 10, occurred with little reference to storm progression between the locality of origin and a position to the westward of Acapulco, thus indicating early lack of organization of the storm. On the 20th,

however, a definite depression center was located inland approximately between but slightly to the north of Salina Cruz and Acapulco.

Early on the 21st the wind circulation, the depth of the barometer, and the augmented force of the wind, showed a definite center located at sea about 70 miles south-southwest of Cape Corrientes. At 9 a. m. the Japanese M. S. *Hakonesan Maru*, in 19°40′ N., 106°00′ W., experienced a wind-force of 11 from the southeast, barometer 29.29. At 5 p. m. of that date the American steamship *Virginia*, in 20°30′ N., 107°24′ W., had an east-southeast wind of force 11, barometer 29.12, the lowest recorded in connection with the storm.

Near hurricane wind velocities occurred over a small area at the entrance to the Gulf of California on the 22d, as the cyclone moved slowly northwestward toward a position slightly to the westward of Cape San Lucas.

On the 23d, in 23°52′ N., 112°31′ W., the American S. S. *West Cactus* had a northwesterly wind of force 11, which led to the belief that the center was proceeding into the Gulf, whereas it was closely hugging the west coast of the Peninsula. After the 23d the disturbance rapidly lost energy, and on the 26th entered the California coast as a very shallow depression near Point Conception.

Fog.—Generally, over the North Pacific, there was materially less fog this month than in the preceding July. Along the Washington coast fog was reported on 4 days; along the California coast, on 7 days; and along the coast of Lower California, on 6 days. Along the northern steamship routes fog was encountered between 135° W. and 155° W., in the general neighborhood of the 50th parallel, on the 22d to 25th. The percentage of frequency increased generally to the westward, with the foggiest areas, having about 30 percent of days with fog, being those embraced within the squares 45°–50° N., 170°–175° E., and 40°–45° N., 150°–155° E.

TYPHOONS OF THE FAR EAST, AUGUST 1935

By BERNARD F. DOUCETTE, S. J.

[Weather Bureau, Manila, P. I.]

There were three typhoons during this month—possibly four, as explained below. The first one, coming early in the month, caused heavy rains over the northern part of the Archipelago. After this typhoon, came a period of high pressure during which the meteorological conditions were very similar to those of April and May. During the last 10 days of the month, the other typhoons occurred.

Typhoon of August 1 to 12.—On August 1, soon after the typhoon of July 22 to 31 had filled up over the continent, a typhoon started from a position about 600 miles east of the Balintang Channel, in a northwesterly direction toward Formosa, but changed on August 4 to a westerly course as it crossed that island. After entering the continent it soon recurved to the northeast, passed on the 8th into the Yellow Sea, crossed Korea and, finally, moving eastward, passed over the southern part of Honshu.

As this typhoon crossed Formosa, the winds weakened without an accompanying rise in pressure. Instead, the circulation over the southwestern sector increased so much that the Taihoku Observatory called this portion a secondary cyclone. When both the primary and the secondary circulations moved into the continent, they combined about a single center.

When this storm, on approaching Formosa, was about 400 miles north-northeast of Aparri (August 3), heavy rains fell along the western coast of Luzon and over the provinces between Manila and Baguio. Since these were soon after the rains of the last typhoon of July, extensive floods resulted. Furthermore, the Agno, Pampanga, and Angat Rivers overflowed their banks because of the heavy rains in the mountains east of the plains. The loss of life was not great (265 deaths being the total given by the newspapers of August 9), considering that whole provinces were under at least 3 feet of water. Besides, there were no violent winds and after it stopped raining the water subsided very quickly. Property loss, consisting of animals and crops, was quite large, and considerable relief work was required from the Red Cross Society.

Rainfall

[24 hours beginning 6 a. m.]

	Baguio, Mountain Pr.	Dagupan, Pangansinan Pr.	Iba, Zambales Pr.	Manila, Rizal Pr.
	Inches	*Inches*	*Inches*	*Inches*
Aug. 1	25.51	8.72	3.94	4.57
Aug. 2	19.47	6.78	2.62	5.14
Aug. 3	19.38	5.21	.80	4.90
Aug. 4	8.76	1.61	.28	.22
Aug. 5	3.15	.30	.61	Trace

Typhoon of August 18 to 29.—This typhoon, which formed after an extensive and persistent high pressure began to weaken, showed its presence as a low-pressure area north of Guam on August 17 and 18. As a depression, it moved west until August 21, then changed to the northwest about 600 miles east of Luzon. It passed close to and northeast of Basco, and on the 23d over southern Formosa, and changed thereafter to a westerly course. On the 26th, it would have entered the continent, if it had continued its velocity of the preceding days. Yet, from the observations available, it apparently did not enter the continent, certainly not to any great distance. Then, on the 27th, a definite center appeared near Pratas, moved northward, crossed Formosa and filled up over the Meiaco-Sima Group. During these days, Swatow did not send observations, and until these are available, the course of the typhoon or typhoons cannot be decided with certainty. It seems, however, that there was only one typhoon. It did not enter the continent. Instead of continuing on the westerly course which it had taken across the Formosa Channel, it appears to have changed to the southwest, then southeast, into a position between Pratas and Basco, where it intensified, and then on the 28th and 29th moved northeastward over Formosa.

Typhoon of August 20 to 30.—Forming northeast of Guam, this typhoon pursued its course over ocean regions, until it reached Japan. From August 22 to 24 it moved northwest, gradually changed to the north-northwest and came on the 27th close to the Nansei (Loo-choo) Islands. Over southern Japan, it changed its course to the northeast and crossed Honshu during the 29th, moving at a rapid rate toward Nemuro. In Japan, according to Manila newspapers of August 30, there were 42 deaths and much property damage.