

over the Grand Banks. On the 16th winds of gale force were reported off the coast of Mexico as shown by the following storm log:

**American S. S. *Saramacca*:**

Gale began on the 15th, wind ESE.; lowest barometer 29.76 inches at 4 a. m. on the 16th, wind E., 7; position, latitude 17° 18' N., longitude 86° 47' W. End of gale on the 16th, wind E., 6. Highest force of wind 8, E.; shifts not given.

From the 18th to the 26th there were no well-defined disturbances of any marked intensity, although during this period some vessels in widely scattered sections of the ocean experienced moderate gales, as shown by the following storm logs:

**British S. S. *Cornishman*:**

Gale began on the 19th, wind SSW. Lowest barometer 29.76 inches at midnight, 19th, wind WSW., 7; position, latitude 50° 39' N., longitude 24° 1' W. End of gale on the 20th, wind NNW. Highest force of wind 8; shifts SSW.-NW.

**American S. S. *West Mahomet*:**

Gale began on the 20th, wind SSW. Lowest barometer 29.80 inches at 3 p. m. on the 20th, wind SW., 7; position, latitude 41° 08' N., longitude 56° 15' W. End of gale on the 20th, wind W. Highest force of wind 9, SW.; shifts SSW.-SW.-W.

**British S. S. *Missouri*:**

Gale began on the 24th, wind ESE. Lowest barometer 29.89 inches at 11 p. m. on the 24th, wind WSW., 3; position, latitude 40° 38' N., longitude 64° 03' W. End of gale on the 25th, wind W. Highest force of wind, 9; shifts SSE.-SW.-WSW.

**British S. S. *Collingsworth*:**

Gale began on the 25th, wind NW. Lowest barometer 29.42 inches at 3:45 a. m. on the 28th, wind NNW., 7; position, latitude 42° 31' N., longitude 40° 39' W. End of gale on the 29th, wind N. Highest force of wind, 10, NNW.; shifts not given.

Between dates recorded on gale report force of wind continually varied dropping to force 6 several times for short periods; held to northwesterly points, except it was W. by S. for about eight hours on the 27th. Frequent rain and hail squalls.

The British S. S. *Cretic* encountered an unusually strong current as shown by the following report:

From noon April 23, position, latitude 40° 56' N., longitude 40° 38' W., to noon April 24, position, latitude 41° 31' N., longitude 48° 55' W., vessel set west 23 miles by careful calculation. During this period the temperature of the air fell from 67° to 42° F. and that of the water from 64° to 44° F. Wind WNW., 5; NW., 5 to 6; N., 5.

At 7 a. m. on the 27th, while about half way between Progresso and Habana, the American S. S. *Esperanza*, Capt. Avery, was in the vicinity of a water spout, that appeared to be about a mile high, although its base was shrouded in mist and its crest lost in the clouds. It was first observed by George K. Ludwigsen, first officer, who was on watch at the time, and was visible for about two hours. This phenomenon was at one time near the vessel, and the captain tried to break it by blowing the whistle, but this means proving ineffective, the life-line mortar was fired and the spout collapsed.

On the 27th there was a Low central near latitude 45° N., longitude 35° W. that afterwards developed into an unusually severe disturbance as shown by Charts XII and XIII for April 28 and 29, respectively. It remained nearly stationary until the end of the month, and on the 30th was apparently beginning to fill in, and no winds of gale force were reported on that day.

Storm logs follow:

**Dutch S. S. *Kinderdijk*:**

Gale began on the 26th, wind WNW., 7. Lowest barometer 29.14 inches at 4 p. m. on the 23th, wind SW. 6; position, latitude 44° 12' N., longitude 29° 32' W. End of gale on the 29th, wind SSE., 3. Highest force of wind 10; shifts NW.-SWS-SE.

**British S. S. *Verbania*:**

Gale began on the 27th, wind SE. Lowest barometer 28.97 inches at 8 a. m. on the 28th, wind E., 7; position, latitude 29° 41' N., longitude 32° 40' W. End on the 29th, wind N. Highest force of wind 9, NNE.; shifts ESE.-E.-NE.

**Danish S. S. *Oscar II*:**

Gale began on the 28th, wind ENE. Lowest barometer 28.93 inches at 2 p. m. on the 29th, wind NNW., 10, position, latitude 27° 10' N., longitude 40° 36' W. End of gale May 1, wind WNW. Highest force of wind, 11, NNW.; no shifts near time of lowest barometer.

**American S. S. *American*:**

Gale began on the 28th, wind SE. Lowest barometer 29.45 inches at 6 p. m. on the 28th, wind SE., 7; position, latitude 45° 50' N., longitude 27° 30' W. End of gale on the 30th, wind E. Highest force of wind, 8, SE.; shifts NE.-N.-NE.-SE.-E. SE. wind predominated during this gale.

551.506 (265.2)  
NORTH PACIFIC OCEAN.

By F. G. TINGLEY.

Pressure at the island stations of Dutch Harbor, Midway Island, and Honolulu averaged near the normal for the month and there were no especially marked conditions at any time at these stations. Over the ocean as a whole, however, high pressure predominated. The highest pressure at Dutch Harbor, 30.24 inches, occurred on the 1st and the lowest, 28.98 inches, on the 8th. At Honolulu the highest pressure, 30.20 inches, occurred on the 11th and 12th and the lowest, 29.90 inches, on the 1st. At Midway Island pressure was above normal on eight days in the first decade, two days in the second decade, and five days in the last decade. The highest pressure, 30.30 inches, occurred on the 5th and 6th and the lowest 29.86 inches on the 30th.

At the beginning of the month a belt of high pressure, covering the middle latitudes of the ocean, stretched from the coast of Asia to the coast of North America. There appeared to be two centers within this belt, one over Japan having a central reading of 30.53 inches, another of somewhat lesser magnitude between Dutch Harbor and Honolulu.

On the 1st a depression formed in the vicinity of Taiwan. With the eastward movement of the anticyclone over Japan during the succeeding several days this depression moved to the northward, merging with two others, one of which advanced over China, the other over the Yellow Sea. By the 4th these depressions had united to form a storm which was especially severe over the southern coasts of Japan. Reports indicate that some 30 lives were lost and great property damage occurred. In the harbor of Yokohama the Japanese S. S. *Alabama Maru* and *Atlas Maru* dragged their anchors and went aground, but subsequent reports of their movements indicated that neither sustained material damage. The former vessel had its passengers aboard and was about to sail for Seattle. The American S. S. *Golden State* arrived at Yokohama from Honolulu on the 4th, successfully weathering the gale.

While this storm prevailed on the western side of the Pacific the anticyclonic center which on the 1st lay between Dutch Harbor and Honolulu advanced eastward to the North American coast, increasing in energy, the central readings exceeding 30.50 inches. Its advance was marked by a strong to whole westerly gale off the middle Pacific coast on the 2d, 3d, and 4th.

The American S. S. *Richmond*, Capt. Jos. Fuchs, San Francisco for Honolulu, encountered this gale on leaving

port. Mr. C. D. Johnston, second officer and observer, states that it began on the 2d. The lowest barometer was 30.04 inches at 5 p. m. on that date, after which pressure rose rapidly, reaching 30.40 inches early on the 4th. The highest force of the wind was 10, NW., on the 3d.

The American S. S. *Admiral Seabee*, Capt. F. Nystrom, Observer C. A. Christiansen, second officer, had this gale on the 3d and 4th while proceeding down the coast from Ocean Falls, B. C., to San Francisco. The highest force of wind was 10, W., on the 4th.

Following the eastward movement of the anticyclone on whose front this gale occurred, low pressure developed in the vicinity of the Aleutians, from which a short series of depressions resulted. These advanced over the Gulf of Alaska, causing southeasterly gales along the eastern portion of the steamer lanes at intervals until about the 12th.

The American S. S. *Northwestern*, Capt. Wm. Jensen, returning to Seattle from Alaskan ports had an unusual experience in connection with one of these depressions. Observer P. Christiansen makes the following note:

We left Cordova southbound at 2:15 p. m. April 10, barometer 29.56, strong easterly wind and rain; anchored off Johnstone Point at 6:40 p. m., barometer 29.47, strong SE. gale, rain. About noon April 11 weather began to moderate but barometer continued to fall slowly and steadily. At 5 p. m. of the 11th left anchorage, barometer 29.25, light NE. wind and rain; 12 midnight, barometer 29.12, light NE. wind and cloudy. At 2 a. m. April 12, barometer began to rise and vessel soon ran into an E. to SE. gale. The barometer continued to rise. It seems that the barometer followed the weather in this case.

The explanation of the experience of the *Northwestern*, as shown by the weather map, is as follows: When leaving Cordova the vessel was on the eastern side of a small depression which was advancing slowly eastward, both traveling at about the same rate. When the *Northwestern* came to anchor off Johnstone Point, the depression overtook the vessel, which for some hours on the 11th was in the relatively calm center, with a low barometer. During the night of the 11th-12th, when the vessel was again proceeding southeastward the center of the depression receded somewhat to the westward and began to fill up. The *Northwestern*, continuing on her course, thus found herself again involved in the gale on the eastern side of the depression, with a rising barometer.

The British S. S. *Empress of Japan*, Capt. W. Dixon, R. D. R. N. R., Yokohama (March 31) for Vancouver, was involved in an earlier depression of this series. Mr. G. Clarke, second officer and observer, has submitted the following storm log:

Gale began on the 7th, wind SSE., lowest barometer 29.64 inches at 4 p. m. of the 7th in latitude 52° N., longitude 158° 30' W.; gale ended on 8th; highest force of wind 9, SE.; no shifts.

The Japanese S. S. *Fushima Maru*, Capt. Shimiyu, Yokohama (March 25) for Victoria, experienced these gales on the 2d and 5th. On the former date, when in about longitude 166° W., the wind reached force 8, veering from SE. at 7 a. m., through S. at noon and SW. at 3 p. m., to W. at 8 p. m. Lowest barometer 29.43 inches. On the 5th, when in about longitude 144° W., the barometer fell to 29.63 with a strong gale from SE. and S. The *Fushima Maru* had previously experienced a fresh northwesterly gale on March 25, soon after leaving port and a whole gale on the 29th, near longitude 160° E. On the latter occasion the wind veered from SE. at 7 a. m. of the 29th to NW. at 4 p. m. of the 30th.

On April 11 two vessels on the southern route near the 160th meridian, east longitude, experienced heavy weather. One of these vessels was the American S. S. *Westmoreland*, Capt. Clifford J. Stewart, Honolulu (April 2) for Shanghai. Mr. F. F. Nann, second officer and observer, has submitted the following account of conditions on that date:

Monday, April 11, position 26° 30' N., 160° 13' E., weather fine and clear, sea smooth, wind SW., 4. At 2:15 p. m., same day, wind shifted to westward and a black cloud bank appeared in the northwest. By 2:30 p. m. there was a strong NW. wind and driving rain, wind shifting at once to N. By 4 p. m. the wind was NE., force 7, and a high sea was breaking over vessel. At 4:30 p. m. changed course from 279° true to 250°, changing back at 7 p. m. At 5 a. m. of the 12th the wind was easterly, force 5; near noon the sea moderated and sky cleared. The barometer did not change more than 0.05 inch throughout the gale.

The gale described by Mr. Nann was probably due to an ill-defined depression formed on the front of an anticyclone which, following the depression of the 3d-4th at the south of Japan, appeared to have its center somewhat to the east of Japan on the 11th.

The American S. S. *West Henshaw*, Capt. O. B. McMullen, Cadiz (P. I.) for San Francisco, had an experience very similar to that of the *Westmoreland*. Mr. H. F. Foster, the observer, states that at about 3:45 or 4 p. m., of the 11th, when the vessel was near latitude 28° 11' N., longitude 165° 59' E., the wind, which during that day had been easterly and light, veered to NW. by W. and increased to a moderate gale. It held between this point and N. until about 2 p. m. of the 12th when it veered to N. by E. and during the following night to NE., when it diminished to a fresh breeze.

It will be noted that the gale lasted some 24 hours longer with the *West Henshaw* than with the *Westmoreland*, the former vessel being eastward, the latter westward bound.