

WEATHER OF NORTH AMERICA AND ADJACENT OCEANS.

NORTH ATLANTIC OCEAN.

By F. A. YOUNG.

The average pressure for the month was near the normal at land stations on the coasts of Canada and the United States and at Swan Island, West Indies. The average was slightly higher than usual in Porto Rico, the Bermudas, and Azores, while it was somewhat below normal in the British Isles. The North Atlantic or Azores HIGH varied greatly during the month, as at Horta the average barometric reading for the first 15 days was 29.88 inches and for the last half, 30.49 inches.

Judging from vessel reports received, there was less fog than usual over the Grand Banks and steamer lanes, while it was recorded on 5 days at the 1 p. m. observation at London.

The number of days with winds of gale force was somewhat higher than usual over the middle section of the southern steamer lanes. In the square between latitude 40° to 45° N. and longitude 35° to 40° W., gales were reported on 8 days, which is considerably in excess of the normal as shown on the Pilot Chart.

On the 1st there was a well developed low central near latitude 44° N. and longitude 37° W., with gales from the west in the southerly, and from the north in the westerly quadrants, while snow was observed near the center. This disturbance moved but little during the next 24 hours, remaining about the same in extent and intensity. Storm logs follow:

American S. S. Eastern Dawn:

Gale began on March 31, wind SW. Lowest barometer 28.77 inches at 8 p. m. on March 31, wind SSW., 7, in latitude 43° 46' N., 39° 51' W. End of gale on the 4th, wind NW. Highest force of wind 10; shifts SSW.-NNW.

British S. S. Canadian Leader:

Gale began on the 2d, wind NNW. Lowest barometer 28.92 inches at 10.30 p. m. on the 2d, wind N., 9, in latitude 44° 06' N., longitude 40° 04' W. End on the 2d, wind NNW. Highest force of wind 9; steady from NNW.

On the 2d there was a second disturbance with its center a short distance south of Sable Island and moderate to strong gales prevailed over the region between the sixtieth meridian and the American coast, the storm area extending as far south as the thirtieth parallel. This depression drifted slowly eastward during the next seven days and on the 9th was central somewhere near latitude 50° N., longitude 30° W., although there were not enough reports from northern waters for an accurate determination. Storm logs follow:

American S. S. Susquehanna:

On the 2d in latitude 40° 43' N., longitude 53° 57' W., barometer began to fall from 29.66 inches at 2 a. m., reaching 29.06 inches at 11 a. m. Light variable breeze shifting from W. to E., and finally steady at NE.

American S. S. Devolante:

Gale began on the 2d, wind WSW. Lowest barometer 29.63 inches at 2 a. m. on the 3d, wind W., in latitude 31° 06' N., longitude 54° 54' W. End on the 4th, wind NW. Highest force of wind 10; shifts WSW.-W.

American S. S. Eastern Leader:

Gale began on the 2d, wind E. Lowest barometer 29.30 inches at noon on the 2d, wind E., 8, in latitude 41° 54' N., longitude 58° 49' W. End on the 6th, wind NNW. Highest force of wind 9, N.; shifts E.-NE.-N.-NNW.

British S. S. Epsom:

Gale began on the 1st, wind SW. Lowest barometer 29.85 inches at 8 p. m. on the 1st, wind SW., in latitude 33° 59' N., longitude 66° 15' W. End on the 3d, wind N. Highest force of wind 10; shifts SW.-W.-WNW.

American S. S. West Celina:

Gale began on the 5th, wind SW. Lowest barometer 29.87 inches at noon on the 5th, wind SW., 7, in latitude 40° 43' N., longitude 29° 37' W. End on the 7th, wind SW. Highest force of wind 9; shifts not given.

British S. S. Kenbane Head:

Gale began on the 7th, wind NE. Lowest barometer 29.26 inches at 4 a. m. on the 8th, wind NE., 10, in latitude 48° 25' N., longitude 35° 10' W. End on the 10th, wind E. Highest force of wind 10; shifts ENE.-NE.

On the 3d there was also a moderate disturbance off the coasts of France and England. Storm log:

British S. S. Cassis:

Gale began on the 2d. Lowest barometer 29.40 inches at 5 p. m. on the 3d, wind WSW., 8, in latitude 45° 20' N., longitude 9° 10' W. End on the 4th, wind N. Highest force of wind 9; shifts SW.-W.-WNW.

On the 10th and 11th there was a depression of limited extent north of the Azores that afterwards developed into the disturbance shown on Charts VIII to XI, for the period from April 12 to 15, inclusive. Storm logs follow:

British S. S. Hartington:

Gale began on the 10th, wind W. Lowest barometer 29.34 inches at midnight on the 12th, wind WSW., 10, in latitude 39° 08' N., longitude 30° 05' W. End on the 17th, wind SW. Highest force of wind 11, N.; shifts WSW.-W.-WSW.

British S. S. Nucula:

Gale began on the 13th, wind NNE. Lowest barometer 29.52 inches at 8 a. m. on the 13th, wind NNE., 8, in latitude 46° 15' N., longitude 28° W. End on the 14th, wind N., 6. Highest force of wind 9, NNW.; shifts NNE.-N.-NNW.

American S. S. West Caddoa:

Gale began on the 12th, wind W. Lowest barometer 29.66 inches at 8 p. m. on the 12th, wind W., 10, in latitude 38° 39' N., longitude 37° 59' W. End on the 13th, wind NE. Highest force of wind 12; shifts W.-NNW.-N.

American S. S. Colthraps:

Gale began on the 13th, wind NNE. Lowest barometer 29.21 inches at 7 a. m. on the 14th, wind NNE., 8, in latitude 48° 40' N., longitude 17° 45' W. End on the 15th, wind NW. Highest force of wind 10, N.; shifts not given.

American S. S. West Kasson:

Gale began on the 14th, wind S. Lowest barometer 29.65 inches at 2 a. m. on the 16th, wind S., 10, in latitude 45° 25' N., longitude 30° 05' W. End on the 16th. Highest force of wind 10, S.; steady from S.

At 7 p. m. on the 10th American S. S. *Maracaibo* encountered thick fog in latitude 36° 43' N., longitude 73° 05' W.

On the same day the observer on board the Honduran S. S. *Hibueras* reported a strong southerly gale with rough sea; Greenwich mean noon position, latitude 27° N., longitude 88° 10' W.

On the 16th and 17th heavy weather prevailed over a large portion of the ocean between the thirtieth and fiftieth parallels. Storm logs:

American S. S. Edgehill:

Gale began on the 15th, wind SW. Lowest barometer 29.18 inches at 8 p. m. on the 15th, wind WSW., 9, in latitude 37° 30' N., longitude 60° W. End on the 16th, wind NNW. Highest force of wind 10; shifts 6 points.

American S. S. Noccalula:

Gale began on the 16th, wind NNW. Lowest barometer 29.43 inches at 6:30 p. m. on the 16th, wind NNW., 9, in latitude 40° 25' N., longitude 49° 18' W. End on the 17th, wind NNW. Highest force of wind 9; shifts E.-ENE.-NE.-N.-NNW.

From the 18th to the 23d, with a few exceptions, moderate weather with uniformly high pressure prevailed over the ocean.

From the 19th to the 21st a few reports were received from vessels that experienced winds of gale force near the fortieth parallel, between the fiftieth meridian and the American coast.

On the 19th a strong "norther" prevailed off the coast of Mexico as shown by following storm log:

American S. S. Devolante:

Gale began on the 19th, wind NW. Lowest barometer 30.08 inches at 1 a. m. on the 19th, wind NW., 8, in latitude 23° 25' N., longitude 97° 15' W. End at 2 a. m. on the 20th, wind NE. Highest force of wind 9; shifts NNE.-NW.

From the 24th to the 26th there was a moderate depression that moved slowly eastward along the fortieth parallel; it was central on the former date near the sixty-third meridian, and on the latter, not far from the fifty-third.

From the 24th to the 28th there was also a disturbance off the coasts of France and England, the storm area extending as far west as the twenty-second meridian on the 26th. Storm log follows:

Swedish S. S. Stockholm:

Gale began on the 26th, wind NW. Lowest barometer 29.85 inches at 10:36 a. m. on the 26th, wind NW., 7, in latitude 56° 03' N., longitude 20° 17' W. End on the 27th. Highest force of wind 10; shifts not given.

On the last two days of the month moderate to light winds with high pressure and slight gradients were the rule over the eastern section of the ocean. There was however during this period a low central near St. Johns, Newfoundland, although no gale reports were received from vessels in the vicinity.

NORTH PACIFIC OCEAN.

By F. G. TINGLEY.

The most noteworthy feature of the weather of the North Pacific Ocean during April was the abnormally high pressure which prevailed over the eastern part of the ocean between the 9th and 13th. During this period barometer readings exceeding 30.50 inches were recorded daily and on the 10th and 11th the S. S. *Canadian Prospector* reported by radio readings of 30.84 inches. The center of the anticyclone was on these days located near 40° N., 140° W.

It may be remarked in this connection that the unseasonably cold weather which prevailed over the western United States during the greater part of April culminated during the week following the development of this unusually high pressure.

The weather of the month was stormier than usual, especially west of the one hundred and seventieth meridian, west longitude. This was particularly true of the period from the 5th to the 9th, when vessels on the northern steamer route between the meridians of 160° E. and 170° W. experienced very heavy weather, occasioned probably by the uniting of a series of three depressions which passed over Japan on the 4th and 5th (Asiatic time). The combined depression developed into a deep cyclone which moved northeastward over Bering Sea on the 6th and 7th (American time) and dis-

appeared to the northward of Alaska on the 8th. On the morning of the 7th the barometer at St. Paul, Pribilof Islands, registered 28.96 inches.

The month opened with a deep cyclone occupying the region of the Aleutian Islands and causing moderate to strong westerly gales along the northern steamer route. The barometers at Dutch Harbor and St. Paul registered 28.56 inches on the morning of the 1st. The North Pacific anticyclone was somewhat to the south of its usual position with a central isobar of 30.20 inches. This is slightly below the normal for April. Pressure was rising, however, in the western part of the ocean, apparently as a result of the eastward movement of anticyclones from Asia and on the 5th the barometer at Midway Island stood at 30.34 inches, 0.20 inch above normal. By the same date, also, the large cyclone over the Aleutians had broken up into several smaller depressions which had moved eastward to the continent. These conditions were succeeded by the depression of the 7th-8th over Bering Sea and the strong anticyclone of the 9th-13th, already referred to. The latter, it should be stated, caused fresh to strong northwesterly gales off the American coast.

On the 14th a fresh depression developed over the Aleutian region and moved slowly eastward, being still central over the Gulf of Alaska on the 20th. On the latter date another and vigorous cyclone appeared over the western Aleutians, and thereafter until the close of the month this region was occupied by low-pressure systems of varying intensities. The lowest pressure recorded was 28.70 inches at Dutch Harbor on the evening of the 29th.

In Asiatic waters some 22 depressions were charted during the month by the Imperial Marine Observatory at Kobe. For the most part these were devoid of any unusual features. The most extensive one was that which occupied the region of the Yellow and Eastern Seas on the 24th and 25th.

In so far as shipping was concerned, the weather conditions affecting the western portion of the northern steamer routes from the 5th to the 9th were the most important. Several vessels were involved in the gales of this period, among them the American S. S. *Coaxet*. This vessel, under command of Capt. G. N. Hampson, Observer, E. J. Stull, was bound from Vancouver for Nagoya. According to Mr. Stull, the gale began on the evening of the 5th, wind S., force 7, barometer 29.75 inches and falling, weather overcast with rain and snow, heavy S. sea. During the 6th the barometer continued to fall until 1 p. m., when the minimum pressure of 29.16 inches was recorded. The *Coaxet* at this time was near 51° N., 177° W. At 4 a. m. of the 6th the wind had backed to S. by E. and strengthened to a fresh gale, with an increasing sea. At 10 p. m. the wind veered to S., force 9-11, barometer 29.20, high cross sea from S. and SSW., thick rain and fog. At noon the wind was S. by W., 11-8. At 4 p. m., SSW., 11, barometer 29.21, cloudy with heavy snow squalls; 8 p. m., SSW., 12, very heavy SSW. to W. sea. Vessel at this time hove to, head to sea. Height of waves conservatively estimated at 45 feet. After this time the barometer continued to rise slowly and the storm gradually abated. At 8 a. m. of the 7th the barometer was 29.92 inches, wind SW., 8-9, good visibility, high SSW. to W. sea.

The American S. S. *Pine Tree State* (since renamed the *President Grant*) was involved in the same storm on the 5th and 6th, Asiatic time. This vessel, under command of Capt. M. M. Jensen, Observer H. V. Van Dusen, sailed