MONTHLY WEATHER REVIEW.

VOL. XI. WASHINGTON, D. C., APRIL, 1883. No. 4.

INTRODUCTION.

A summary of the general meteorological conditions which prevailed over the United States during April, 1883, is presented in this REVIEW. Brief descriptions are also given of the storms occurring in the north Atlantic ocean, the centres of which are approximately shown on chart ii.

April has been marked by severe local storms and tornadoes in many of the states, which have caused great loss of life and property.

The storm traced as number viii., on chart i., was of unusual severity. It appeared on the Pacific coast on the 19th, and crossed the continent during the succeeding five days. With this barometric depression occurred the violent tornadoes of the 22d and 23d in the southern states; and during its passage over the Rocky mountains, the lowest barometric readings observed during the past twelve years were recorded.

Respecting the temperature of April, there have been no marked deviations from the normal.

The precipitation has been above the average over a large area, extending from the north Pacific coast southeastward over the interior to the south Atlantic and Gulf coasts. It has been deficient in California and along the northern and southern boundaries of the country.

Dangerous freshets, occurring mostly in the smaller rivers and streams, in New England, the southern states, and Canadian Provinces, were attended by loss of life and destruction of property.

During 1882, from April to October, inclusive, special temperature and rainfall observations were made throughout the cotton-growing regions of the south. On April 1, 1883, these observations were resumed in those districts, and a table of averages for the same is published in this REVIEW.

Very complete reports have been received from those states in which meteorological bureaus have been organized. These will be found under the head of "Notes and Extracts," and clearly show the value of such local organizations, especially to those interested in agriculture.

The Hon. A. J. McWhirter, Commissioner of Agriculture, of Tennessee, refers to these reports as follows:

> The great advantage to the agricultural interests of accurate meteorological data is becoming more patent as civilization progresses toward a higher sphere of enlightenment and intelligence in the art of cultivating the soil so as to reap the best results. Indeed, this is so closely interwoven with the interests of the intelligent farmer, that in many of the states it has become an indispensable adjunct to the agricultural bureaus—not so much for immediate purpose, as for future reference.
>
> This department, yet in its infancy as a co-ordinate branch of the bureau, will no doubt, when brought to a higher state of excellence, prove, as it has in so many states, a most interesting and valuable auxiliary.

In the preparation of this REVIEW the following data received up to May 20th, have been used; viz.: the regular tri-daily weather-charts, containing data of simultaneous observations taken at one hundred and thirty-one Signal Service stations and fifteen Canadian stations, as telegraphed to this office; one hundred and seventy-six monthly journals, and one hundred and seventy monthly means from the former, and fifteen monthly means from the latter; two hundred and thirty-two monthly registers from voluntary observers; fifty-three monthly registers from United States Army post surgeons; marine records; international simultaneous observations; marine reports, through the co-operation of the "New York Herald Weather Service;" abstracts of ships' logs, furnished by the publishers of "The New York Maritime Register;" monthly weather-reports from the local weather services of Indiana, Iowa, Nebraska, New Jersey and Tennessee, and of the Central Pacific railway company; trustworthy newspaper extracts; and special reports.

ATMOSPHERIC PRESSURE.

[*Expressed in inches and hundredths.*]

The distribution of mean atmospheric pressure for the month of April, 1883, determined from the tri-daily telegraphic observations of the Signal Service, is shown by the isobarometric lines in red on chart iii.

The area of least mean pressure is inclosed by the isobar of 29.85, and covers southern Colorado, northern New Mexico, and northeastern Utah. From the region of least mean pressure the barometric means increase rapidly to the westward, and are greatest over the middle Pacific coast region, where a small area is inclosed by the isobar of 30.05. To the northward and eastward of the area of least pressure, the monthly means increase gradually. From the lower lake region and southern New England southward to the east Gulf states, the mean pressure is from 30.00 to 30.04, being greatest in the south Atlantic states, while over northern New England and the Canadian Maritime Provinces a slight decrease occurs, the lowest barometric means being 29.92 and 29.93, reported from Father Point, Province of Quebec, and Charlottetown, Prince Edward Island, respectively.

The monthly mean pressure, compared with that of March, shows an increase over the central Pacific coast, varying from 0.01 to 0.06. In the lower lake region, the Saint Lawrence valley, and from North Carolina northeastward, the pressure is also greater than for March, the increase being greatest in the Maritime Provinces, where it averages about 0.15. In all other districts the pressure has decreased. Over an area between the ninety-fifth and one hundred and fifteenth meridians north of the thirty-fifth parallel, the decreases are from 0.20 to 0.30; in the upper Mississippi valley and western Gulf states, they are from 0.10 to 0.20, and in other districts, where decreases have occurred, they have been less marked.

DEPARTURES FROM THE NORMAL VALUES FOR THE MONTH.

On the middle Pacific coast, in New England, the middle Atlantic states and in the eastern part of the lower lake region, the pressure is below the normal. The departures in these districts are very slight, being most marked in New England. Elsewhere over the country the pressure is from normal to 0.11 below, the greatest departures occurring in the extreme northwest and in the lower Missouri valley.

BAROMETRIC RANGES.

The barometric ranges have been greatest over the districts lying between the Mississippi river and the Rocky mountains, where they have generally been from 1.00 to 1.57, being greatest in the western portions of Kansas and Nebraska and in eastern Colorado. The smallest ranges occurred in Florida and in southern California. The barometric ranges, as compared with those of April, 1882, are about 0.10 smaller along the Atlantic coast and from 0.30 to 0.40 smaller in the lake region, while they are from 0.50 to 0.60 greater in the northern and middle slopes. They are from 0.20 to 0.40 greater in California, and from 0.20 to 0.30 smaller in the north Pacific coast region.

In the several districts the monthly ranges have varied as as follows:

New England.—From 0.81 at New Haven, Connecticut, to 1.04 at Eastport, Maine.

Middle Atlantic states.—From 0.74 at Williamsport, Pennsylvania, to 0.90 at Cape Henry and Norfolk, Virginia.

South Atlantic states.—From 0.61 at Jacksonville, Florida, to 0.93 at Fort Macon, North Carolina.

Florida peninsula.—From 0.34 at Key West, to 0.49 at Cedar Keys.

Eastern Gulf.—From 0.69 at Pensacola, Florida, to 0.97 and 1.00 at Starkville and Vicksburg, Mississippi, respectively.

Western Gulf.—From 0.95 at Galveston, Texas, to 1.23 at Shreveport, Louisiana.

Rio Grande valley.—From 0.98 at Brownsville, Texas, to 1.04 at Eagle Pass, Texas.

Ohio valley and Tennessee.—From 0.65 at Pittsburg, Pennsylvania, to 0.96 at Nashville, Tennessee.

Lower lakes.—From 0.67 at Cleveland, Ohio, to 0.75 at Rochester, New York.

Upper lakes.—From 0.76 at Port Huron, Michigan, to 1.11 at Duluth, Minnesota.

Extreme northwest.—From 0.98 at Fort Stevenson, Dakota, to 1.02 at Saint Vincent, Minnesota.

Upper Mississippi valley.—From 0.88 at Davenport, Iowa, to 1.07 at La Crosse, Wisconsin.

Missouri valley.—From 1.16 at Leavenworth, Kansas, to 1.32 at Fort Bennett, Dakota.

Northern slope.—From 0.90 at Helena, Montana, to 1.57 at North Platte, Nebraska.

Middle slope.—From 1.10 on the summit of Pike's Peak, Colorado, and 1.18 at Fort Elliott, Texas, to 1.56 at West Las Animas, Colorado.

Southern slope.—From 0.82 at Fort Davis, Texas, to 1.08 at Fort Concho, Texas.

Southern plateau.—From 0.67 at Tucson, Arizona, to 0.94 at Santa Fé, New Mexico, and 0.98 at El Paso, Texas.

Middle plateau.—From 0.94 at Pioche, Nevada, to 1.03 at Salt Lake City, Utah.

Northern plateau.—From 0.78 at Lewiston, Idaho, to 0.82 at Eagle Rock, Idaho.

North Pacific coast.—From 0.76 at Portland, Oregon, to 0.86 at Roseburg, Oregon.

Middle Pacific coast.—From 0.70 at San Francisco, California, to 0.90 at Cape Mendocino, California.

South Pacific coast.—From 0.54 at San Diego, California, to 0.79 at Visalia, California, and 0.82 at Yuma, Arizona.

AREAS OF HIGH BAROMETER.

Eight areas of high-pressure have been traced over the region occupied by the Signal-Service stations during the month of April. Five of these were first observed in British America, near Hudson's Bay, and were afterwards traced over the northeastern sections of the United States. Three of these areas approached the stations from the Pacific, one of which passed to the east of the Rocky mountains north of Oregon; one was attended by the development of a secondary high area in the Rio Grande valley, and two disappeared without passing to the east of the coast line.

I.—The barometer was high north of the lake region on the 1st, and on the 2d and 3d the pressure increased generally throughout the western districts when this area was apparently moving to the southeast, towards the Saint Lawrence valley. On the morning of the 3d the region of greatest pressure included the Ohio and central Mississippi valleys, and during the day this area moved eastward to the middle Atlantic coast, where it disappeared on the 5th to the southeast of Cape Hatteras, North Carolina.

The temperature was from 10° to 15° below the mean in the region of greatest pressure, attended by light rain in the southern states, and light snow in Virginia and the interior of North Carolina on the 2d, followed by cool and generally clear weather at the eastern stations on the 2d and 3d.

II.—This area appeared in British America, north of Montana, on the 5th, and passed to the lake region, and thence to Indian Territory, following in its course that of i. From the southwest it passed eastward over the Ohio valley and Middle Atlantic states, disappearing to the east of the Virginia coast on the 9th. As in the preceding area the cold air flowing southward over districts east of the Mississippi, caused general rains in the Gulf states after the winds shifted to the north and east when the region of greatest pressure was off the middle Atlantic coast.

High area iii. appeared on the Pacific coast on the 5th, and at no time was it central east of the coast line. It moved slowly to the southward, as indicated by wind directions and changes in pressure, finally disappearing as a distinct area on the 7th, although the pressure continued above the mean for the month in California. The pressure was above the mean on the 7th from California eastward to the Mississippi valley, and high area ii., which was then central in Indian Territory, became more clearly defined. With the gradual decline of pressure on the Pacific coast, rains occurred from central California northward, being heavy at the northern stations.

Area iv. was central north of the lake region on the 10th, and it passed rapidly to the eastward in advance of the well-defined low area number iv. The pressure increased four-tenths of an inch in eight hours at the extreme northern stations during the night of the 10th, and on the morning of the 11th it was five-tenths of an inch above the mean for the month at these stations, while it was six-tenths below the mean near Lake Huron. Later reports indicate that this area moved directly east from Nova Scotia.

High area v. followed iv., appearing in the region of Hudson's Bay on the 12th and passing southeast to the lower Saint Lawrence valley, immediately after low area iv. had disappeared. After reaching the Atlantic coast the course changed to the south, and it slowly extended over the New England and the middle Atlantic states during the 15th, and then disappeared to the southeast over the Atlantic.

VI.—This area appeared on the Pacific coast on the 13th, and slowly extended over the Rocky mountain regions. On the 14th the pressure was three-tenths of an inch above the normal in northern California, and the line of normal pressure extended north from El Paso, Texas, to Fort Benton, Montana. On the following day the line of normal pressure followed the general course of the Missouri valley, and the pressure was from two to four-tenths of an inch above the mean in all districts between the lower Mississippi river and the Pacific coast. The centre of this area was in southern Texas on the morning of the 15th, and a light "norther" occurred on the west Gulf coast on this and the preceding day, the wind reaching a velocity of forty-two miles per hour at Indianola, Texas. This area passed to the east from the lower Rio Grande valley and disappeared south of the Gulf states on the 17th.

VII.—This was the most extended area of high-pressure observed during the month. It appeared on the north Pacific coast on the 17th, and moving eastward over the upper Missouri valley on the 18th and 19th continued within the region of observations until the 26th. It advanced as far east as Lake Ontario on the 22d, and then moved westward to the Saskatche-

wan valley, where it was central on the 24th, the barometer being six-tenths of an inch above the mean for the month. After the severe storms of the 22d and 23d in the southern states the barometer rose rapidly, and this area passed southward; first to Indian Territory on the 25th, and thence eastward over the southern states, attended by cool, clear weather in all districts on the 25th. A light "norther" occurred on the Texas coast, while this area was central west of the Mississippi river. It disappeared to the southeast of the coast line on the 26th.

VIII.—This was a slight excess of pressure which appeared in the region north of Minnesota on the 28th, accompanied by cool fair weather in the northern districts on the 29th and 30th, and light frosts at interior stations. On the 30th the pressure was greatest near Lake Huron, and at the close of the month it was greatest on the New England coast.

AREAS OF LOW-PRESSURE.

Nine areas of low-pressure have been traced within or near the limits of the Signal Service stations during the month of April. Chart i. exhibits the paths of the centres of these areas as determined from the tri-daily weather reports of this service.

The following table gives the latitudes and longitudes in which each depression was first and last observed, and the average hourly velocity of each depression:

Areas of low barometer.	First Observed.		Last Observed.		Average velocity in miles per hour.
	Lat. N.	Long. W.	Lat. N.	Long. W.	
	°	°	°	°	
No. I.	45	126	51	62	43.5
II.	28	99	37	75	32.0
III.	50	110	49	90	23.5
IV.	39	103	48	77	22.5
V.	37	102	51	84	17.0
VI.	37	77	33	75	14.0
VII.	38	104	49	60	24.0
VIII.	44	122	40	67	27.5
IX.	45	71	47	59	37.0
Mean hourly velocity.....					26.8

Two of these depressions approached from the north Pacific and were distinctly traced across the continent, each having a southeasterly course until the centre of disturbance reached the lower Missouri valley. The region of greatest storm frequency extends over the states of Kansas and Colorado, although depressions are usually more frequent during the month of April in Minnesota and off the middle Atlantic coast.

I.—This storm approached the north Pacific coast on the 1st, and it was central west of Portland, Oregon, on the morning of the 2d, the rain area at that report extending from Washington Territory southward over central California. After reaching the coast line, the course changed to the southeast, and on the morning of the 3d it had reached western Utah, accompanied by rain at all Pacific coast stations, and light snow in Idaho and Montana. During the 4th, the central area extended eastward, forming a secondary depression in the lower Missouri valley, while the principal depression extended over Colorado and New Mexico and the central and southern plateau regions. At the midnight report of the 4th, two well-defined areas were traced, one central in Kansas and the other in Utah. The more easterly depression moved to the lake region during the 5th, and finally disappeared to the east of Nova Scotia on the 6th. That part of this depression which remained central in the mountain region, gradually filled up on the 5th. This disturbance passed over the eastern part of the United States with only slight energy, but the rain area extended over all districts, and the winds reached velocities on the Atlantic coast north of Cape Hatteras, ranging from thirty to forty miles an hour.

II.—This disturbance followed depression i., and resulted probably from the flow of cool air from the northern latitudes towards the Rio Grande valley after the first disturbance had passed to the east of the Mississippi valley. It was central in southern Texas on the afternoon of the 5th, and during the succeeding twenty-four hours, it passed northeastward to the lower Ohio valley, causing very heavy rains in the southwestern states, light rains in the Ohio valley, and snow or sleet in the upper Mississippi valley. During the night of the 6th, light snow or rain fell at northern stations in New England, the middle Atlantic states, and in the lake region, while the centre of disturbance passed from the lower Ohio valley to its most northern latitude, in central Pennsylvania, where the course changed to the southeast. On the 7th it passed southeastward over the middle Atlantic coast, and on the 9th it disappeared to the east of Cape Hatteras, followed by strong northeasterly gales on the North Carolina coast.

III.—This depression originated probably in the north Pacific, but the reports are not sufficient to warrant the extension of its track west of the Rocky mountains. It was central in British America, north of Montana, on the afternoon of the 7th, and moved almost directly eastward to the region of Lake Superior during the 8th, where it disappeared to the northeast. The reports from Manitoba on the 8th indicate that this area was attended by violent winds in that region. The afternoon reports of that date showed a pressure of 29.28 at Minnedosa, which at that report was south of the centre of disturbance. Succeeding reports indicate that this depression continued its easterly course north of the stations of observation.

IV.—This depression developed in the central Rocky mountain region on the 8th, and was central near Denver, Colorado, at midnight of that date. During the 9th it passed over Colorado and Kansas, developing great energy near Omaha, Nebraska, on the morning of the 10th, where the barometer had fallen to 29.44. This storm passed over the upper lake region on the 10th, attended by dangerous winds, and on the 11th finally disappeared to the northeast of Lake Huron. Cautionary signals were ordered in advance of this storm at the lake stations, and were justified by the following maximum wind velocities: Buffalo, New York, 44, sw.; Milwaukee, Wisconsin, 44, w.; Grand Haven, Michigan, 36, sw.; Toledo, Ohio, 32, sw. The wind at first was strong from the eastern quarters, but the greatest velocities occurred after it had shifted to the west or southwest. When last observed on the 11th this storm continued clearly defined as a low area moving northeast of the Canadian stations.

V.—During the night of the 11th an extended depression in the southern Rocky mountain region indicated the development of a barometric disturbance in that section. The barometer continued to fall in Colorado during the 12th, and by 11 p. m. of that day it had reached 29.31 at West Las Animas, Colorado, where this depression was clearly defined, inclosed by the isobars of 29.40 and 29.50, the general form of the depression being elliptical, with the longer axis pointing to the east along the thirty-eighth parallel of latitude. The course of the storm changed to the northeast on the 13th, and the elliptical form of the central depression continued, with a change of direction of the longer axis from east to northeast. After reaching the region of Lake Superior the winds became violent in the upper lake region, and on the morning of the 15th the barometer had fallen to 29.24 at Duluth, Minnesota, which was near the centre of disturbance. This storm passed almost directly north from Lake Superior, but it was followed by strong westerly winds at the northern stations and severe local storms in the upper Mississippi valley. The maximum velocity of the wind occurred at Milwaukee, Wisconsin—47 miles, sw.

VI.—This was a depression of slight energy which developed in the northern portion of the south Atlantic states on the 15th, and after passing to the east of the Virginia coast line it apparently moved to the southward, near the coast, and disappeared to the east of Wilmington, North Carolina, on the 17th. Violent gales occurred near Cape Henry, Virginia, and along the North Carolina coast, as this disturbance pushed to the southward. The wind, which came from the northwest, reached a velocity of fifty miles at Cape Henry.

VII.—This disturbance also developed in the central Rocky mountain region, where it was central on the night of the 16th.

It passed directly eastward over Kansas and Missouri during the 17th and 18th as an extended depression of slight energy, although attended by severe local storms and general rains in districts east of the Mississippi river. The barometer was from one to three-tenths of an inch below the mean for the month in these districts, with local depressions in the Ohio valley and middle Atlantic states on the 19th. It passed to the east of the New England coast, where the course changed to the northward, carrying it over the Maritime Provinces with increased energy, and violent gales at the most northerly stations.

VIII.—This storm approached the stations from the north Pacific coast on the 18th, and was clearly traced from that coast across the Rocky mountains to Colorado, where it was central on the 21st. It was the most marked barometric depression of the month, the barometer reaching its minimum when the disturbance was central in Colorado on the morning of the 21st, when it read 28.88, at West Las Animas. After remaining about stationary during the 21st, it continued its southeasterly course during the 22d, causing a secondary depression to form in southeastern Kansas, while the principal disturbance was central near Cairo, Illinois. Violent local storms and tornadoes occurred in the south and east quadrants of this depression during the 22d and 23d, causing great loss of life and property. These storms are described under the heading, "Local Storms" in this REVIEW. The most destructive of these was the tornado which occurred in Mississippi on the 22d, and the "Indications" issued by the signal office at 1 a. m. of the 21st, were as follows: "Warmer southeast to southwest winds, threatening weather and rain, lower barometer and violent local storms on Saturday (21st) night and Sunday (22d) morning."

After the barometric disturbance passed to the east of the Mississippi valley it became less clearly defined, but it passed eastward off the North Carolina coast, causing dangerous gales near the coast from Jacksonville, Florida, to Boston, Massachusetts. High winds also occurred at the Gulf stations and on the lakes. The observer at Toledo, Ohio, reports that the cautionary signal at that station saved $5,000 to the fishermen of that section, and retained in port shipping valued at $300,000.

IX.—This was a slight disturbance which developed in northern New England on the 24th, when the preceding disturbance was apparently central to the southeast of the New England coast. It moved directly eastward, with increasing energy, and was central near Sydney, Nova Scotia, on the morning of the 25th.

NORTH ATLANTIC STORMS DURING APRIL, 1883.

[*Pressure expressed in inches and in millimeters; wind-force by scale of* 0—10.]

Chart ii. exhibits the tracks of the principal depressions that have moved over the north Atlantic ocean during April, 1883. The location of the various storm-centres has been approximately determined from reports of observations furnished by agents and captains of ocean steamships and sailing vessels in the north Atlantic and from other miscellaneous data received at this office up to May 21st. The observations used are in general simultaneous, being taken each day at 7 h. 0. m. a. m., Washington, or 0 h., 8 m. p. m., Greenwich mean time.

Of the six depressions charted, two, viz.: iv. and vi., are traced as continuous storms from the United States over the ocean; but only the latter appears to have reached the European coasts. Number i. was probably a continuation of low area vii. of the March chart, while ii., iii. and v., apparently originated near the Banks of Newfoundland. Of these, v. has been traced eastward to the British Isles.

The month was in general stormy, and for the better description of the weather conditions which prevailed, may be divided into four periods. The first (1st–10th) was characterized by a continuance of moderate to strong southerly to westerly gales with cloudy or rainy weather. During the second period (11th–16th), light to moderate southwesterly to north-northeasterly breezes and fair weather generally prevailed. In the third period (16th–19th), strong westerly and northwesterly gales with cloudy weather and rain prevailed over the Atlantic east of the thirtieth meridian, while to the westward of that meridian moderate easterly winds and fair weather obtained. During the last period (20th to close of month), the winds were variable in direction; in force they were moderate to strong, increasing frequently to moderate gales.

The following descriptions relate to the storms charted:

I.—This was probably a continuation of low area vii. of the March chart. At the close of March, an extensive area of low pressures stretched from Newfoundland to the British Isles, the region of least pressure being apparently situated near the fortieth meridian. On April 1st, the depression, having moved northeastward, was central near N. 52°, W. 34°; the s. s. "Bolivia," in N. 49° 03′, W. 33° 33′, reporting barometer 29.22 (742.2), wind wnw., force 6, cloudy and squally; while strong southerly and southwesterly gales of force 6 to 8 were encountered by vessels to the eastward of the "Bolivia." During the day the depression moved rapidly northeastward with apparently increasing pressure, and on the 2d it was central near N. 57°, W. 15°, causing strong southerly winds on the western coasts of Scotland and Ireland. During the 2d the disturbance probably passed to the northward of the British Isles.

II.—On the morning of the 2d the reports of vessels between N. 40° and 50° and W. 50° and 40° indicated the presence of a somewhat deep depression over the region mentioned. The s. s. "Celtic," in N. 45° 32′, W. 42° 35′, reported barometer 29.08 (738.6), wind se., force 8, overcast and rainy, and the s. s. "Pavonia," about 1° 30′ south of the "Celtic," reported barometer 29.11 (739.4), wind s., force 8, hazy. Near W. 50°, the winds were northerly and northwesterly, force 4 to 6, and the barometric pressure ranged from 30.0 (762.0) to 30.2 (767.1). On the 3d the region of least pressures was transferred to about N. 52°, W. 29°, where the pressure ranged from 29.4 (746.7) to 29.8 (756.9). Moderate southerly gales prevailed from W. 18° eastward to W. 13°, while, in the region west of the eighteenth meridian the wind hauled to west-southwest and west, and blew with the force of a moderate gale. During the day there was a great increase of pressure east of the thirtieth meridian and the depression appears to have filled up, but another important disturbance was developing south of the Banks of Newfoundland.

III.—This was probably the most severe storm of the month, having caused great damage to vessels that encountered it. It appears to have developed near the Banks of Newfoundland during the 3d and 4th. Captain Gleadell, of the s. s. "Celtic," reported: in N. 43° 18′, W. 48° 58′, barometer began to fall rapidly from 8.44 a. m. of the 3d, at which time it read 30.15 (765.8), wind s., moderate breeze. At 8 p. m., wind se., increasing in force, much lightning in the west, barometer falling at the rate of .5 of an inch an hour. At 1 a. m., on the 4th, the wind fell light and veered to ne., with high sse. swell and rapidly rising swell from nnw., which caused a very high confused sea. At 3 a. m., the barometer read 28.53 (724.6), which was its lowest reading during the gale; at 4 a. m. it was blowing a hurricane, with dangerous sea, which continued until 10.30 a. m., when it began to moderate gradually, and at 8 p. m., it was blowing a strong breeze, with moderate sea, barometer 29.86 (758.4). From 3.20 a. m. to 8 p. m. the barometer rose as rapidly as it had previously fallen. The steamships "Dominion" and "Braunschweig," (near N. 42° and between W. 49° and 55°), on the 3d and 4th, both reported barometer below 29.0 (736.6), with winds veering from sse., through s., to wsw. and nw., and blowing with hurricane force. The s. s. "Notting Hill," which encountered this storm near N. 41°, W. 55°, had boats, bulwarks and deck-fittings carried away, and put into Halifax, Nova Scotia, in distress, on the 10th. Under the influence of this depression, vessels as far east as the forty-fifth meridian had strong southerly gales of force 10, while northwesterly gales, of force 8, prevailed as far westward as the sixty-fourth meridian. By the 5th, the storm centre had moved to about N. 44°, W. 45°; the pressure remained about the same