MONTHLY WEATHER REVIEW.

Editor: Prof. CLEVELAND ABBE.

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INTRODUCTION.

The REVIEW for February, 1895, is based on reports from 3,202 stations occupied by regular and voluntary observers. These reports are classified as follows: 148 reports from Weather Bureau stations; 35 reports from U. S. Army post surgeons; 2,345 monthly reports from State Weather Service and voluntary observers; 31 reports from Canadian stations; 96 reports through the Southern Pacific Railway Company; 531 marine reports through the cooperation of the Hydrographic Office, Navy Department, and "New York Herald Weather Service;" monthly reports from 16 U. S. Life-Saving stations; monthly reports from local services established in all States and Territories; and international simultaneous observations. Trustworthy newspaper extracts and special reports have also been used.

The WEATHER REVIEW for this month has been prepared under the general editorial supervision of Prof. Cleveland Abbe. Unless otherwise specifically noted, the text is written by the Editor, but the statistical tables are furnished by the Division of Records and Meteorological Data, in charge of Mr. A. J. Henry, acting chief of that division.

CHARACTERISTICS OF THE WEATHER FOR FEBRUARY, 1895.

The most prominent feature during February was the great area of high pressure and the attending cold wave that passed from Alberta on the 5th southward to Texas and eastward to the Atlantic coast on the 7th and 8th. A special bulletin was issued illustrating this storm and cold wave. This was followed by persistent cold weather. The average temperature for February was the lowest on record over a greater portion of the Gulf and south Atlantic States. The snowfall was remarkably heavy in the Sierra Nevada, and also unusual in the Atlantic States. The total precipitation of rain and melted snow was below the average throughout the interior of the country. Two severe storms passed northeastward along the Atlantic coast.

ATMOSPHERIC PRESSURE.

[*In inches and hundredths.*]

The distribution of mean atmospheric pressure reduced to sea level, as shown by mercurial barometers not reduced to standard gravity and as determined from observations taken daily at 8 a. m. and 8 p. m. (seventy-fifth meridian time), is shown by isobars on Chart II. That portion of the reduction to standard gravity that depends on latitude is shown by the numbers printed on the right-hand border.

During the current month the highest mean pressures have been confined to the north and east slopes of the Rocky Mountains. The extreme highest was 30.38 at Idaho Falls. The lowest mean pressures were in Maine and the Maritime Provinces of Canada. The extreme lowest was 29.64 at Sydney, C. B. I., and St. Johns, N. F.

As compared with the normal for February the mean pressure for the current month was deficient in Newfoundland, Nova Scotia, Quebec, Ontario, New England, and the middle Atlantic coast. With the exception of Yuma and San Diego it was in excess over the whole of the rest of the country. The maximum excess was 0.21 at Lander.

As compared with the preceding month of January the pressures reduced to sea level show a maximum rise of 0.25 at Tatoosh Island and Portland, Oreg., and a maximum fall of 0.32 at Sydney.

The systematic periodic diurnal variations of pressure are shown by the hourly means given in Table V.

AREAS OF HIGH PRESSURE.

The tracks of the centers of areas of high pressure are shown on Chart IV, which also gives the maximum pressure at the center at each date.

Of these areas the most remarkable is No. V, which first appeared on the 5th, p. m., in Alberta, and disappeared on the 9th, a. m., in Tennessee, the maximum central pressure was 31.38 on the 6th, a. m.; 31.32 on the 6th, p. m., and 31.18 on the 7th, a. m., in North Dakota. These are among the highest pressures on record, and undoubtedly represent very closely the maximum that is even temporarily possible in this region of the globe. At Havre the observer reported that the blizzard of February 5 was the worst on record in that vicinity. In this storm First Sergt. James Brown, of the Tenth Cavalry, was frozen to death. On the 7th, a. m., this area extended over the greater portion of the United States, Canada, and Mexico. By the 7th, p. m., the low area that had developed on the Atlantic coast assisted in drawing the cold air from the interior eastward over Florida which was visited by a cold wave of about the same severity as that of December, 1894. During the interval, 6–16th, a

ridge of high pressure extended from British Columbia southeastward, and was the prevailing feature affecting the climate of the interior of the continent. After that date this ridge moved slowly southward affecting principally the Rocky Mountain plateau and Mexico, and was broken up by the 20th, although it subsequently partially reappeared and was again in full development on the 28th, a. m.

AREAS OF LOW PRESSURE.

The tracks of the centers of areas of low pressure are shown on Chart I, which also gives the minimum pressure at the center for each date.

The most interesting of these areas, considered as storms, are the following:

VI.—This apparently moved up the coast, passing between Bermuda and Cape Hatteras on the 3d and developed into a hurricane on the coast of Nova Scotia on the 4th and 5th.

IX.—This began as a small whirl on the coast of Texas in advance of the great area of high pressure. It moved eastward to the south Atlantic coast during the 6th and 7th, and developed rapidly as the cold air flowed in behind it over the warm Gulf Stream. It passed over Cape Hatteras on the 7th and Cape Cod on the 8th, and was a well-developed hurricane, central in Massachusetts, on the morning of the 8th, after which it began to break up, but subsequently passed east of Cape Breton and may have continued on the Atlantic Ocean.

XIII.—This appeared off the coast of northern California on the 11th and broke upon the coast of Oregon on the 13th, bringing heavy rain and snow to the Pacific States.

XIV.—The low area that frequently extends northward from the Gulf of California was prominent during this month from the 7th to the 9th, when the great area of high pressure, No. V, trended in a parallel direction from Alberta to Texas. This low area again became prominent on the 13th and 14th, while the same ridge of high pressure preserved nearly the same position as before along the Rocky Mountain range. Finally, on the 28th the same phenomenon was again repeated and the high area passed from British Columbia south and east, while a low area developed southward from southern California, Arizona, and New Mexico.

Movement of centers of areas of high and low pressure.

Number.	First observed.			Last observed.			Path.		Average velocities.	
	Date.	Lat. N.	Long. W.	Date.	Lat. N.	Long W.	Length.	Duration.	Daily.	Hourly.
High areas.		°	°		°	°	*Miles.*	*Days.*	*Miles.*	*Miles.*
I.	1, a. m.	41	96	1, p. m.	33	99	600	0.5	.....	.....
II.	1, p. m.	46	100	4, a. m.	48	63	2,300	2.5	920	38.3
III.	1, p. m.	55	114	3, a. m.	53	102	800	1.5	533	22.2
III*a*	3, a. m.	53	102	3, p. m.	41	94	1,000	0.5	.....	.....
III*b*	3, a. m.	53	102	5, p. m.	50	83	1,400	1.5	933	38.9
IV	2, a. m.	42	120	5, p. m.	41	116	800	2.5	320	13.3
V	5, p. m.	52	114	9, a. m.	36	88	2,500	3.5	714	29.8
VI	8, p. m.	52	110	12, p. m.	41	105	1,200	4.0	300	12.5
VII	18, a. m.	53	113	20, p. m.	34	109	3,100	6.5	777	32.4
VII*a*	20, p. m.	34	109	21, p. m.	41	112	600	1.0	600	25.0
VII*b*	20, p. m.	34	109	22, a. m.	41	97	900	1.5	600	25.0
VIII	21, p. m.	50	113	25, a. m.	36	80	3,500	3.5	871	36.3
IX	23, p. m.	43	115	28, p. m.	54	108	1,200	5.0	240	10.0
X	25, p. m.	49	86	28, p. m.	27	82	1,600	3.0	533	22.2
Sums	.....	.....	.....	.....	.....	.....	21,050	37.0	7,341	.....
Mean of 12 paths	.....	.....	.....	.....	.....	.....	.....	.....	612	25.5
Mean of 37.0 days	.....	.....	.....	.....	.....	.....	.....	.....	569	23.7
Low areas.										
I.	1, a. m.	27	97	3, a. m.	28	79	950	2.0	475	19.2
II.	1, p. m.	52	124	2, p. m.	51	121	200	1.0	200	8.3
III.	2, a. m.	37	71	3, a. m.	49	56	1,150	1.0	1,150	47.9
IV	2, p. m.	40	106	3, a. m.	42	107	150	0.5	.....	.....
V	2, p. m.	42	94	3, p. m.	46	79	850	1.0	850	35.4
VI	2, a. m.	32	74	6, a. m.	47	55	1,550	4.0	387	16.1
VII	4, a. m.	39	104	.....	.....	.....	.....	.....	.....	.....
VIII	4, p. m.	51	123	5, p. m.	48	118	350	1.0	350	14.6
IX	5, a. m.	26	97	9, a. m.	47	67	2,600	4.0	650	27.1
X	5, p. m.	43	103	6, a. m.	35	100	500	0.5	.....	.....
XI	9, a. m.	41	70	10, a. m.	48	55	900	1.0	900	37.5
XII	10, p. m.	29	93	14, a. m.	48	54	2,650	3.5	757	31.3
XIII	11, a. m.	42	127	13, a. m.	44	123	500	2.0	250	10.4
XIV	15, a. m.	27	84	16, a. m.	35	76	800	1.0	800	33.3
XV	15, p. m.	54	116	20, p. m.	45	56	2,900	5.0	580	24.2
XVI	19, a. m.	53	111	23, a. m.	48	61	2,500	4.0	625	26.0
XVII	18, p. m.	32	95	19, p. m.	32	82	800	1.0	800	33.3
XVIII	20, p. m.	42	123	26, p. m.	47	58	4,400	5.5	800	33.3
XIX	21, p. m.	28	100	22, a. m.	30	96	300	0.5	.....	.....
XX	21, p. m.	51	98	.....	.....	.....	.....	.....	.....	.....
XXI	25, p. m.	55	113	28, p. m.	47	78	1,750	3.0	583	24.3
XXII	26, p. m.	44	64	28, p. m.	47	56	600	2.0	300	12.5
Sums	.....	.....	.....	.....	.....	.....	26,400	43.5	10,457	.....
Mean of 17 paths	.....	.....	.....	.....	.....	.....	.....	.....	615	25.6
Mean of 43.5 days	.....	.....	.....	.....	.....	.....	.....	.....	607	27.5

NORTH ATLANTIC METEOROLOGY.

[*Pressure in inches and millimeters; wind force by Beaufort scale.*]

OCEAN FOG IN FEBRUARY.

The limits of fog belts west of the fortieth meridian, as reported by shipmasters, are shown on Chart I by dotted shading. East of the fifty-fifth meridian fog was reported on 9 dates; between the fifty-fifth and sixty-fifth meridian on 3 dates, and west of the sixty-fifth meridian on 1 date. Compared with the corresponding month of the last seven years the dates of occurrence of fog east of the fifty-fifth meridian numbered 2 less than the average; between the fifty-fifth and sixty-fifth meridians 2 less than the average; and west of the sixty-fifth meridian 4 less than the average.

OCEAN ICE IN FEBRUARY.

The region in which Arctic ice was reported for the current month is shown on Chart I by crosses. The southernmost ice, also the easternmost (an iceberg noted on the 1st), was about 1½° north of the average southern limit, and nearly 3° west of the average eastern limit of ice for February. Large quantities of heavy field ice were reported in N. 37° 01′, W. 75° 38′ on the 19th; an iceberg was observed 15 miles east of Cape Race on the 25th. For the current month ice was reported only on 5 dates, the 1st, 3d, 16th, 19th, and 25th.

The following table shows the southern and eastern limits of the region within which icebergs or field ice were reported for February during the last 13 years:

Southern limit.			Eastern limit.		
Month.	Lat. N.	Long. W.	Month.	Lat. N.	Long. W.
	° ′	° ′		° ′	° ′
February, 1883	42 01	52 46	February, 1883	46 10	45 44
February, 1884	42 00	50 00	February, 1884	46 50	43 45
February, 1885	41 50	51 12	February, 1885	47 52	42 00
February, 1886	46 10	47 15	February, 1886	48 00	44 47
February, 1887	40 00	48 00	February, 1887	46 26	41 50
February, 1888	44 59	45 08	February, 1888	44 59	45 08
February, 1889	45 35	48 00	February, 1889	45 35	48 00
February, 1890	41 12	50 12	February, 1890	44 30	35 30
February, 1891	44 20	48 00	February, 1891	44 33	44 59
February, 1892	47 25	47 55	February, 1892	49 05	46 20
February, 1893	45 11	48 56	February, 1893	46 20	46 40
February, 1894	44 28	48 50	February, 1894	47 30	44 40
February, 1895	45 24	47 18	February, 1895	45 24	47 18
Mean	43 53	48 44	Mean	46 24	44 22