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TORONTO

GENERAL METEOROLOGICAL REGISTER

FOR THE YEAR 1888.

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*Official?*

QC 985

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## REMARKS ON THE METEOROLOGICAL RESULTS AT TORONTO FOR THE YEAR 1888.

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### TEMPERATURE.

The year 1888 presented with respect to its temperature several well marked features, the mean of the year was  $42^{\circ}.70$ , differing from the average of forty-eight years (1840 to 1887) to the extent of  $1^{\circ}.41$  in defect. From January to October was a series of defects in the monthly averages only broken by a warm June, the two concluding months being warmer than their averages, the deviation of each month from their normals being:—January— $7^{\circ}.38$ , February— $0^{\circ}.64$ , March— $6^{\circ}.33$ , April— $1^{\circ}.94$ , May— $1^{\circ}.56$ , June— $2^{\circ}.46$ , July— $1^{\circ}.49$ , August— $0^{\circ}.39$ , September— $1^{\circ}.94$ , October— $2^{\circ}.98$ , November— $1^{\circ}.43$ , December— $3^{\circ}.83$ . The average deviation without regard to sign being  $2^{\circ}.70$ .

The coldest month absolutely was January, with a mean temperature of  $14^{\circ}.98$ ; it was also the coldest relatively to the standard of Toronto. It was the coldest January out of 49 years with the single exception of that of 1857, the average of which was  $12^{\circ}.75$ . It is worthy of remark that all the Januaries since that of 1882 have been colder than the average, though not to such an extent as 1888.

The warmest month was, as usual, July, although it was  $1^{\circ}.49$  below the average. June was relatively the warmest, it being  $2^{\circ}.46$  above the proper average.

The warmest day was the 22nd of June, with a temperature of  $78^{\circ}.85$ . In 1887 it was the 16th July; average  $82^{\circ}.17$ .

The coldest day was the 9th of February, with a temperature of  $7^{\circ}.08$  below zero.

The highest temperature of the year was  $92^{\circ}.0$ , which occurred on the 22nd of June. The lowest temperature of the year was  $16^{\circ}.1$  below zero on the 9th of February. The annual range derived from the extremes was therefore  $108^{\circ}.1$ .

There were 74 instances in which the temperature at the hour of observation was depressed  $20^{\circ}$  below the normal for that hour, and only 12 instances when there was an equal deviation in excess.

During the year there was 157 days above their proper normals, and 209 days below.

### BARMOMETER.

The mean pressure of the year was 29.645 inches, the difference from the average being .027 inches in excess; the highest reading was 30.432 inches at 4 p.m. on the 16th January, and the lowest 28.793 inches at 8 a.m. of the 21st March, giving a range of pressure of 1.639 inches, the month which showed the greatest deviation of the mean from the normal was April, 0.138 inches in excess. May showing the least, 0.002, also in excess.

## HUMIDITY.

The mean humidity of the year was 74 of saturation, being less than usual, the greatest monthly humidity being in January and the least in April. There were 13 instances of complete saturation, 3 in January, 2 in August, 4 in September, 3 in November, 1 in December.

The least humidity at the time of observation was 24 at two and four p.m. of the 16th of April.

## CLOUDS.

The extent of sky clouded was, on the average of the year, three-fifths of the whole, and for ten months the sky was more than half overcast. December was the most cloudy month, and September the most free from clouds; during the year there were 53 days completely clouded, the greatest number (12) occurring in December, none being recorded in July.

## WIND.

The Resultant Direction of the wind was N. 59° W.; the resultant velocity 2.67 miles; or, in other words, the actual displacement of air was that which would have been produced by a wind blowing throughout the year from that direction with a constant velocity of 2.67 miles per hour.

The mean velocity without regard to direction was 9.71 miles, or a velocity slightly exceeding the average; the most windy month was December with an average of 12.08 miles per hour, and the least windy month July, with an average of 7.75 miles. The day of greatest velocity was the 9th of March, average 25.88 miles per hour, and the day of least velocity 29th February, average 0.94 miles per hour. The highest velocity in one hour was 41.0 miles, from 10 to 11 a.m. of the 21st December. The number of hours that the wind blew from each of the eight principal points was, North 1,233, North-East 760, East 1,021, South-East 484, South 824, South-West 1,201, West 1,352, North-West 1,812, and 97 calms.

## RAIN AND SNOW.

The depth of rain was 22.819 inches, or nearly 5 inches more than fell during the previous year, but a deficiency having occurred in six months it is 4.560 inches below the average quantity. The amount of snow, was 34.6 inches, is the smallest ever recorded in any year in Toronto, the deficiency amounting to 35.7 inches, the rain and snow combined falling short of the average precipitation by 8.130 inches.

While the quantity of rain and snow was so much less the number of days on which they fell was in both cases much above the usual number, that of rain being 22 days, and that of snow 18 days, in excess. The number of days of rainfall (133) being the greatest ever recorded in any year. June was the most rainy month in respect to quantity (3.990 in.), and October in respect to frequency.

Even when snow is taken into account and reckoned as rain, June maintains the predominance in the amount of precipitation, but the maximum of frequency is transferred to December.

The heaviest fall of rain was 2.380 in. on the 16th September, and the heaviest fall of snow 3.0 in. on the 4th, and also on the 6th of January. This is the heaviest fall of rain in one day since the 13th September, 1878.

The rainfall occupied 534.2 hours, and the snow 268.6 hours in its fall, giving 802.8 hours or 33 days 11 hours as the total duration of the fall of rain and snow.

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## SUNSHINE.

Total duration of bright sunshine in the year was 2048.3 hours, or a ratio to the number of hours that the sun was above the horizon of 0.46, a number which differs only slightly from the average of the last six years, but as a large part of the deficiency occurred in May, July, and August, and as those months were above the average in the amount of cloud also—the greater part of the deficiency (4.578 in.) of rain occurred in May and July—the disastrous effect upon the growth and ripening of the crops may be easily imagined.

Frost occurred in every month except June, July and August, the latest in spring was on the 19th May, and the earliest in autumn on the 13th September.

The last snow in spring was on the 16th of May, and the first in autumn on the 3rd of October. First record of ice on the 7th of October.

## AURORA.

Of the 21 auroral displays during the year the most brilliant occurred on the 20th May; they were most frequent in March, April, and June; none were observed in July, August, September, and December. There were 183 nights favourable for observation during the year.

## THUNDERSTORMS.

Of the 23 thunderstorms recorded in the year the earliest occurred on the 21st March, and the latest on November 6th. They were most numerous in July and August, five being recorded in each of these months.

The first schooner arrived in Toronto bay on the 5th April, and the ice left the bay on the 10th April.

MEAN METEOROLOGICAL RESULTS.

GENERAL METEOROLOGICAL

MAGNETICAL OBSERVATORY,

Latitude 43° 39' 4. Longitude 5h. 17m. 34.6 W. Elevation

	JAN.	FEB.	MAR.	APR.	MAY	JUNE.	JULY.
Mean Temperature.....	14.98	21.90	22.44	38.86	59.57	64.42	66.21
Difference from average (48 years)	- 7.38	- 0.64	- 6.33	- 1.94	- 1.56	+ 2.46	- 1.49
Thermic anomaly (Lat. 43° 40')..	- 17.82	- 12.80	- 17.69	- 11.34	- 7.53	- 0.18	- 2.59
Highest temperature .....	41.1	43.2	48.3	76.3	74.1	92.0	87.7
Lowest temperature.....	11.9	16.1	1.2	21.2	32.9	40.5	47.3
Monthly and Annual Ranges...	53.0	59.3	49.5	55.1	41.2	51.5	40.4
Mean maximum temperatures..	22.58	28.96	29.46	47.55	59.53	75.45	76.59
Mean minimum temperatures..	6.88	13.74	15.09	30.86	42.35	53.37	55.73
Mean daily range.....	15.70	15.22	14.37	16.69	17.18	22.08	20.86
Greatest daily range.....	28.8	37.7	23.2	32.2	30.8	32.0	32.3
Mean height of Bar. at 32° Fah....	29.7772	29.6608	29.6988	29.7266	29.5789	29.5390	29.6255
Difference from average (47 years)	+ .1266	- .0223	+ .0977	+ .1378	+ .0048	- .0300	+ .0399
Highest barometer.....	30.432	30.392	30.127	30.194	30.016	29.835	29.827
Lowest barometer.....	29.077	28.929	28.793	29.192	29.110	29.187	29.114
Monthly and Annual Ranges....	1.355	1.463	1.334	1.002	0.906	0.648	0.713
Mean Humidity of the air .....	82	81	79	64	68	70	65
Mean elasticity of aqueous vapour	0.078	0.106	0.106	0.156	0.231	0.439	0.416
Mean of cloudiness .....	0.67	0.74	0.66	0.51	0.65	0.52	0.50
Difference from average (34 years)	- .07	+ .05	+ .02	+ .08	+ .09	- .01	- .00
Resultant direction of the wind....	N 63 W	S 77 W	N 42 W	N 44 W	N 44 E	S 68 W	N 50 W
Velocity of the wind....	4.02	3.06	5.46	5.11	2.26	1.36	1.99
Average velocity (miles per hour)	10.81	10.74	11.61	11.07	8.95	8.35	7.75
Difference from average (13 years)	- 0.75	- 0.22	- 0.01	+ 0.25	- 0.01	+ 0.69	+ 0.16
Total amount of rain.....	0.690	1.020	1.910	1.360	0.839	3.990	0.860
Difference from average (48 years)	- 0.412	+ 0.166	+ 0.416	- 0.886	- 2.178	+ 1.150	- 2.200
Number of days of rain.....	5	9	8	7	16	11	9
Total amount of snow.....	12.4	6.6	8.9	0.1	0.1	....	....
Difference from average (45 years)	- 4.83	- 10.49	- 4.22	- 0.41	- 0.04	....	....
Number of days of snow.....	17	15	14	5	3	....	....
Number of fair days .....	14	9	13	19	14	19	22
Number of auroras observed.....	2	1	4	4	3	4	0
Possible to see aurora (No. of nights)	13	10	15	18	15	18	18
Number of thunderstorms.....	0	0	2	2	0	5	4
Number of hours bright sunshine..	107.2	96.5	133.8	229.1	189.7	289.1	282.4
No. of hours of possible sunshine	285.7	302.5	369.9	406.4	461.1	465.7	470.9

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66.02	56.0
- 0.37	- 1.1
- 2.48	- 4.7
84.9	77.7
47.3	32.0
37.6	45.0
76.07	65.0
56.4	47.0
19.59	18.0
32.0	28.0
29.5893	29.6655
- .0300	- .0399
29.920	30.114
29.240	29.114
0.680	0.713
69	78
0.448	0.3
0.55	0.50
+ .05	+ .00
N 78 W	N 19 W
2.85	0.0
8.56	7.75
+ 0.87	- 0.0
2.910	3.2
+ 0.005	- 0.0
13	14
....	....
....	....
....	....
18	16
0	0
21	20
5	2
258.5	227.0
434.5	370.0

REGISTER FOR THE YEAR 1888.

TORONTO, ONTARIO.

above Lake Ontario, 108 feet. Elevation above the Sea, 350 feet.

AUG.	SEP.	OCT.	Nov.	DEC.	1888.	1887.	1886.	1885.	1884.	1883.	1882.
66.02	56.54	43.36	37.42	29.72	42.70	44.14	43.71	41.57	43.79	41.95	45.42
- 0.37	- 1.94	- 2.98	+ 1.43	+ 3.83	- 1.41	+ 0.03	- 0.40	- 2.54	- 0.32	- 2.16	- 1.31
- 2.48	- 4.96	- 10.44	- 5.77	- 6.28	- 8.32	- 6.88	- 7.31	- 9.45	- 7.23	- 9.07	- 5.90
84.9	77.6	62.2	62.0	46.7	92.0	97.2	89.5	88.6	89.6	83.4	89.9
47.3	32.1	28.3	14.1	0.0	16.1	16.6	22.8	16.1	13.3	10.5	17.4
37.6	45.5	33.9	47.9	46.7	108.1	113.8	112.3	104.7	102.9	93.9	107.3
76.07	65.65	50.01	43.92	35.72	....	....	....	....	....	....	....
56.4	47.55	36.42	31.33	23.11	....	....	....	....	....	....	....
19.59	18.10	13.59	12.59	12.61	16.55	17.12	16.53	16.85	17.05	17.07	15.70
32.0	28.8	23.4	26.0	28.6	37.7	34.0	32.6	39.2	34.8	38.4	36.0
29.5893	29.6600	29.5535	29.7173	29.6109	29.6448	29.6329	29.6255	29.5933	29.6273	29.6496	29.6515
- .0300	- .0058	- .0965	+ .0981	- .0387	+ .0270	+ .0151	+ .0077	- .0245	+ .0095	+ .0318	+ .0337
29.920	30.139	29.91	30.244	30.157	30.432	30.607	30.283	30.200	30.412	30.365	30.447
29.240	29.121	28.937	29.100	29.111	28.793	28.704	28.752	28.714	28.807	28.803	28.781
0.680	1.018	1.034	1.144	1.046	1.639	1.903	1.531	1.586	1.605	1.562	1.666
69	78	78	80	78	74	75	77	77	76	77	74
0.448	0.359	0.225	0.193	0.137	0.243	0.261	0.260	0.249	0.261	0.249	0.265
0.55	0.44	0.73	0.76	0.81	0.63	0.63	0.61	0.61	0.63	0.64	0.63
+ .05	+ .07	+ .11	+ .01	+ 0.04	+ 0.01	+ .01	- .01	- .01	+ .01	.00	+ .01
N 78 W	N 19 W	N 38 W	N 55 W	N 87 W	N 59 W	N 46 W	N 56 W	N 62 W	N 55 W	N 77 W	N 47 W
2.85	0.78	2.66	2.28	6.55	2.67	1.92	2.13	2.60	3.30	2.39	2.11
8.56	7.89	9.28	9.48	12.08	9.71	9.88	9.73	9.95	10.29	10.08	10.42
+ 0.87	- 0.67	+ 0.22	- 1.19	+ 1.06	+ 0.03	+ 0.20	+ .0.05	+ 0.27	+ 0.61	+ 0.40	+ 0.74
2.910	3.285	2.645	2.710	0.600	22.819	17.969	27.726	26.351	20.532	25.734	20.587
+ 0.068	- 0.005	+ 0.297	+ 0.026	- 0.912	4.559	9.410	+ 0.347	- 1.028	- 6.847	- 1.645	- 6.792
13	14	20	14	7	133	106	112	103	123	124	110
....	....	0.3	3.9	2.3	34.6	77.9	73.5	65.6	80.2	81.0	42.5
....	....	0.45	0.66	12.60	35.7	7.6	3.2	4.7	9.9	13.7	27.8
....	....	3	7	19	83	78	66	73	69	74	62
18	16	11	11	9	175	203	196	203	184	181	209
0	0	2	1	0	21	25	29	31	20	46	60
21	20	15	13	7	183	180	189	195	202	207	204
4	2	1	2	0	23	22	26	19	30	32	28
258.5	227.7	101.6	70.8	61.9	2048.3	2063.5	2034.4	2018.3	1931.8	2038.8	2169.5
434.5	376.3	340.2	286.9	274.3	4474.4	4463.3	4463.3	4463.3	4474.4	4463.3	4463.3

MEAN METEOROLOGICAL RESULTS.

TEMPERATURE.

	1888.	Average of 48 years.	Extremes.	
			°	°
Average temperature of the year.....	40.70	44.11	47.09 in 1878	40.77 in 1873
Warmest month.....	July	July	July, 1868	Aug., 1860
Average temperature of the warmest month	66.20	67.69	75.80	64.46
Cooldest month.....	Jan.	Jan.	Feb., 1875	Feb., 1848
Average temperature of the coldest month.....	14.98	22.36	10.16	26.00
Difference between the temperature of the warmest and the coldest month.....	51.22	45.33	.	..
Average of deviations of monthly means from their respective averages of 48 years signs of deviation being disregarded.....	2.70	2.49	3.62	..
Month of greatest deviation without regard to sign.....	Jan.	Jan.	Feb., 1875	..
Corresponding magnitude of deviation.....	7.38	3.90	12.38	..
Warmest day.....	22 June	79.30	July 14, '68	July 31, '54
Average temperature of the warmest day.....	78.85	79.30	84.50	72.75
Cooldest day.....	9 Feb.	..	Feb. 6, 1855	Dec. 22, '42
Average temperature of the coldest day.....	-7.48	-2.18	Jan. 22, '59	..
Date of the highest temperature.....	22 June	90.86	-14.38	9.57
Highest temperature.....	92.0	90.86	Aug. 24, '54	Aug. 19, '40
Date of the lowest temperature.....	9 Feb.	12.43	99.2	82.4
Lowest temperature.....	-16.1	12.43	Jan. 10, '59	Jan. 2, 1842
Range of the year.....	108.1	103.20	-26.5	1.9
			118.2	87.0

BAROMETER.

	1888.	Average of 47 years.	Extremes.	
Average pressure of the year.....	29.6448	29.6178	{ 29.677 in 1849	29.5602 in 1864
Month of the highest average pressure.....	Jan.	Sept.	Jan., 1849	June, 1864
Highest monthly average pressure.....	29.7772	29.6658	29.8046	29.6525
Month of the lowest average pressure.....	June	June	March, 1859	Nov., 1849
Lowest monthly average pressure.....	29.5390	29.5690	29.4143	29.5886
Date of the highest pressure in the year.....	Jan. 16	..	Jan. 8, 1866	Mar. 7, '78
Highest pressure.....	30.432	30.365	30.940	30.139
Date of the lowest pressure in the year.....	21 Mar.	..	Jan. 2, 1870	Mar. 17, '45
Lowest pressure.....	28.793	28.706	28.166	28.939
Range of the year.....	1.639	1.659	{ 2.133 in 1866	1.303 in 1845

RELATIVE HUMIDITY.

	1888.	Average of 47 years.	Extremes.	
Average humidity of the year.....	74	77	82 in 1851	73 in 1858
Month of greatest humidity.....	Jan.	Jan.	Jan., 1857	Dec., 1858
Greatest average monthly humidity.....	82	83	9	81
Month of least humidity.....	April	May	Feb., 1843	April, 1849
Least average monthly humidity.....	64	70	58	76

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EXTENT OF SKY CLOUDED.

	1888.	Average of 35 Years.	Extremes.	
Average cloudiness of the year .....	1.63	0.62	0.66 in '69	0.57 in 1856.
Most cloudy month.....	Dec.	Dec.	.....	.....
Greatest monthly average of cloudiness .....	0.81	0.77	0.89	0.73
Least cloudy month. ....	Sept.	Aug.	.....	.....
Least monthly average of cloudiness.....	0.44	0.50	0.29	0.50

WIND.

	1888.	Average of 13 Years.	Extremes.	
Resultant direction.....	N 59° W	N 60° W.	.....	.....
Resultant velocity in miles .....	2.67	2.53	.....	.....
Ave. velocity without regard to direction..	9.71	9.68	10.54 in '80.	8.32 in '78.
Month of greatest average velocity.....	Dec.	March.	April, '80.	Dec., 1875.
Greatest monthly average velocity.....	12.08	11.62	13.88	10.42
Month of least average velocity. ....	July.	July.	July, '78	July, 1881.
Least monthly average velocity. ....	7.75	7.59	5.93	8.43
Day of greatest average velocity.....	Mar. 13	.....	Nov. 17, '80.	Feb. 10, '85.
Greatest daily average velocity.....	25.88	28.31	41.67	22.76
Day of least average velocity .....	Feb. 29	.....	.....	.....
Least daily average velocity.....	0.94	.....	.....	.....
Hour of greatest absolute velocity.....	Dec. 21,	.....	Nov. 7, '80.	Jan., 17, '85.
Greatest velocity .....	10-11 a.m.	.....	3 to 4 a. m.	10 to 11 a.m.
	41.0	44.12	55.5	39.0

RAIN.

	1888.	Average of 48 Years.	Extremes.	
Total depth of rain in inches.....	22.819	27.379	43.555 in '43	17.574 in '74.
Number of days on which rain fell.....	133	111	133 in 1888.	80 in 1841.
Month on which the greatest depth of rain fell.....	June.	Sept.	Sept., 1843.	June, 1887.
Greatest depth of rain in one month .....	3.990	3.380	9.760	2.655
Month in which the days of rain were most frequent.....	Oct.	Oct.	Jan., '69.	May, 1841.
Greatest number of rainy days in one month .....	20	13	Oct., '64.	.....
Day on which the greatest amount of rain fell.....	Sept. 16	.....	Sept. 14, '43.	Sept. 14, '48.
Greatest amount of rain in one day.....	2.380	.....	3.455	1.000

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SNOW.

	1888.	Average of 45 years.	Extremes.	
Total depth of snow in inches.....	34.6	70.3	122.9 in '70.	34.6 in '83.
Number of days in which snow fell.....	88	65	87 in 1859.	33 in '48.
Month in which the greatest depth of snow fell.....	January	January	March, '70.	Dec., 1851.
Greatest depth of snow in one month.....	12.4	17.2	62.4	10.7
Month in which the days of snow were most frequent.....	Dec.	January	Dec, 1872.	Feb., 1848.
Greatest number of days of snow in one month.....	19	14	24	8
Day in which the greatest amount of snow fell.....	4-6 Jan.	—	{ Feb. 5, '63. Mar. 27, '70.	{ 4-6 Jan '88
Greatest fall of snow in one day.....	3.0	9.3	16.0	8.0

SUNSHINE.

	1888.	Average 1882 to 1887.
Total duration of bright Sunshine in hours.....	2048.3	2042.7
Ratio to possible amount.....	0.46	0.46
Month of greatest relative amount.....	June.	July.
Ratio to possible amount.....	0.62	0.61
Month of least relative amount.....	December.	December.
Ratio to possible amount.....	0.22	0.16
Number of days completely clouded.....	53	74
Day of greatest relative amount.....	October 10.	—
Ratio to possible amount.....	0.96	0.91

DIFFERENCES OF CERTAIN METEOROLOGICAL ELEMENTS FOR 1888 FROM THE NORMAL VALUES FOR EACH QUARTER AND YEAR.

	Bar.	Tem.	Rain.	Days Rain.	Snow.	Days Snow.	Vel'ty of Wind.	Cloud-ed Sky.
Winter.....	+ .0823	- 4.78	+ 0.170	+ 6.52	-19.54	+ 8.48	+0.33	0.00
Spring.....	+ .0305	- 0.35	- 1.914	+ 0.53	- 2.45	+ 3.90	+ 0.29	0.00
Summer.....	+ .0015	- 1.27	- 2.227	+ 2.56	—	—	+ 0.12	- 0.01
Autumn.....	- .0120	+ 0.76	- 0.589	+12.36	-13.71	+ 5.42	+ 0.03	+ 0.05
Year.....	+ .0270	- 1.41	- 4.560	+21.97	-35.70	+17.80	+ 0.08	+ 0.01

January.  
12  
February  
March...  
April.....  
May...  
June.....  
September  
October...  
November  
December.

## PERIODICAL OR OCCASIONAL EVENTS, 1888.

- January... 1. Gloomy day with fog and rain.  
12 to 13. Great change of temperature  $44^{\circ}$  in a little over 24 hours.  
13. Large flocks of small birds about.  
21. Keen cold day, average  $-6.7$ .
- February... 9. Coldest day of year, average  $-7.1$ .
- March... 20. Robins and Song Sparrows seen. 24th, Bluebirds.  
25. Redhead Woodpeckers. 30th, Hawks, Greybirds and Blackbirds.  
31. Bobolink and Meadow Larks.
- April... 2. Frogs heard in Humber River. 5th, first Schooner arrived in Bay.  
10. Ice left Bay. 12th, Redhead Woodpeckers very numerous.  
25. Spring birds numerous. 27th, Frogs heard.  
28. Swallows and May Beetles.
- May... 2. Last record of ice. 4th, Flycatcher. 6th, Night Hawk, Yellowbirds.  
7. Orioles. 14th, Butterflies numerous.  
15. Snowing, melting as it falls. 16th, last snow of season.  
19. Last frost of season. Cherry in bloom.  
22. First steamer to Niagara.  
23. Almond in flower. Spice Bush.  
24. Apple in bloom, Pears in bloom.  
31. Chestnut in bloom.
- June... 6. Fireflies numerous.  
22. Warmest day of year, average  $78^{\circ}-85$ .  
28. Heaviest rainfall in one day ( $2.210$  in.) since 13th September, 1878.
- September... 14. First frost of season.  
16. Heaviest rain of year  $2.380$  in., mostly fell in about 5 hours.  
19. Large flocks of Blackbirds. About this time Swallows seem to have quietly left, not sure of precise time.  
30. Thermometer fell to  $32^{\circ}$ , first in Autumn.  
During September the dews were very copious, sometimes a measurable quantity found in rain gauge.
- October... 3. First snow of season. 7th, first ice. 21st, first measurable snow.
- November... 13. Extraordinary dense fog enveloped city immediately after the change of wind to S.E. about 2 p.m.
- December... 30. Large flocks of Crows. Some Robins about.  
31. Buds swelling on many shrubs.