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DEPARTMENT OF MARINE AND FISHERIES
DOMINION OF CANADA.

Toronto Observatory

**Results of Meteorological, Magnetical
and Seismological Observations,**
1916.

COMPILED BY JAS. YOUNG.

Published under the Direction of
SIR FREDERIC STUPART, F.R.S.C.,
Director of the Meteorological Service, Toronto.

PRINTED BY THE OBSERVATORY PRESS,
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Lat. $43^{\circ} 40' 0''.8$ N. Long. $5h. 17m. 35.6s.$ W. The observations are taken at 75th meridian time. Height of barometer cistern 379 feet above sea level. Height at the Old Observatory 350 feet.

The barometric readings given in the following tables are taken from the photographic barograph, and are the means of the 24-hour readings of each day. A correction has been applied to reduce these readings to the original height of the standard barometer in the old Observatory building, so as to make them comparable with previous Toronto registers. Capillarity and gravity corrections have been omitted. The adopted mean temperatures are the means of the max. and min. of the thermometers in the Stevenson Screen. The extremes are also from the same screen. The 24-hour means are taken from the photographic thermograph, where the tubes are four feet above the ground. Humidity means are taken from a Julien Friez hygrometer, and are the means of the twenty-four hour readings. The direction and wind velocity are from the anemometer at the Eastern Gap on the Island, where the cups revolve at a height of fifty feet above the lake level. A velocity of 30 miles is called a gale. In classing clear and cloudy days where ever the mean from six observations was below 0.2 the day was called clear, and when above 0.8; cloudy. Auroral light observations have been rendered doubtful owing to the large number of electric lights in the city.

CORRECTION.—On page 23, Aurora Class IV., on the 26th, should read "Class II." It may be stated that this aurora was observed at other places as a remarkably fine display Class I.

The mean temperature of the year was 2.2° above normal as derived from max. and min. of 70 years, and 0.7° above when taken from the 24-hour series, normals for this latter being based on hourly observations from 1881 to 1908. The year showed a deficiency of 0.60 inches in rainfall from an average of 70 years, but the snowfall exceeded the average by 1.3 inches, total precipitation being 1.47 inches in deficit. Bright sunshine about normal.

JANUARY. A very mild, cloudy month. The first thirteen days were mild with the exception of the 6th, 7th and 8th, when seasonable temperatures prevailed. On the evening of the 13th it turned cold and continued so up to the 19th with strong southwest and northwest winds, attaining the force of a gale at times. The minimum temperature for the month occurred on the 14th, being 0.9° . From the 20th to the end of the month, with the exception of the 29th, the weather continued unusually mild, the mean daily temperature being from 2° to 22° degrees above the normal, whilst on the 26th and 30th the maximum temperatures reached 52° . Gales were recorded on eleven days. Rainfall was one inch above average, but there was a marked deficiency in the snowfall amounting to 14 inches. Heaviest rainfall was on the 30th when .405 inch was registered. No snow on the ground at the end of the month. Bright sunshine was a little below normal.

FEBRUARY. There were large fluctuations of temperature during the month. The first 15 days were generally cold with strong north and northwest winds. Zero temperatures were recorded on the night of the 13th, and the minimum fell to -7.5° the following morning. Much milder conditions prevailed on the 16th and 17th, the temperature reaching 41.7° on the 17th. It fell rapidly on the evening of the 18th with blustery northwest winds, and continued quite cold and generally clear up to the morning of the 22nd. Mean temperature on the 21st was 20° below normal, and the minimum fell to -9.3° . Temperature rose rapidly during the afternoon of the 22nd, and mild conditions prevailed to the 25th. The last four days were cold, with strong west and northwest winds. The monthly mean temperature was 3.2° below normal. There was no rainfall, but the snowfall exceeded average by 8 inches, snow falling on 17 days. Bright sunshine was much below usual amount. About 8 inches of snow on the ground at the end of the month.

MARCH. Omitting the 7th, 12th, 13th and 21st, when the temperatures were fairly high, the weather continued quite cold up to the morning of the 24th, the mean temperature for this period being 9° below average. On the 17th it was 23° below the normal of the day. The absolute minimum was -1.0°, and on the 18th the reading was -2.4°. On the 25th the weather became springlike, continuing to the end of the month. The temperature rose to 57.4° on the 29th, and although the ground on the 23rd was covered with considerable quantity of ice and snow, this had nearly all disappeared by the end of the month. Robins were numerous on the 29th. Snowfall was 7.1 inches above average, there being snow almost every day up to the 21st. The heaviest rainfall was on the 27th, when the gauge registered 0.765 inches. On the 6th a thunderstorm developed during an easterly gale, with snow, sleet and rain, the temperature at the time being about 28°. Bright sunshine was 17 hours in excess of normal.

APRIL. The temperature which had been above the average, fell rapidly on the 6th with strong northwest winds, and the weather remained comparatively cool until the morning of the 9th, when more seasonable temperatures set in, the mean temperature then continuing above the normal to the end of the month. The monthly mean was 3.2° above the average. It was a wet April. From the 11th to the 25th there were only two days without rain; 0.645 inch fell on the 14th, and 0.660 inch on the 22nd. From the 26th onward, no rain fell. There was a good percentage of cloudy weather during the month with cold northeast and east winds, and although the mean temperature was decidedly above average, still vegetation was backward owing partially to lack of sunshine.

MAY. An unusually wet month with a rainfall of 2.7 inches above the average, and 14 days of rain. In five instances, half an inch of rain fell. During the last four days, 2.1 inches fell, of this amount 1.1 inches falling on the night of the 29th. There were no continuous high temperatures. The weather was quite cool and unseasonable at times, notably so from the 14th to the 22nd, with strong northeast, east and northwest winds. On the morning of the 19th the minimum reading was 35.7°, and the next morning 37.4°. An unusually heavy gale occurred on the night of the 10th, and it continued the next

day, 54 miles from the west being registered during the afternoon of the 11th. Bright sunshine was a little above average.

JUNE. A cool, wet month with a large number of northeast and easterly winds. Rainfall was 1.5 inches above average. Rain which began on the 27th of May, continued at intervals almost every day up to the 24th; 0.94 inch fell on the 2nd and 1.67 inches on the 11th. Total fall for April, May and June 12.92 inches. Highest previously registered for similar months were - 1840, 12.43 in.; 1870, 11.39 in.; 1883, 11.34 in.; 1894, 11.07 in.; 1857, 10.96 in. At other seasons of the year there have been three-month periods with a larger rainfall. This abnormal rainfall seriously interfered with the progress of seeding. In some districts, farmers in York County could not work on the land. The mean monthly temperature was 2° below average; there were only six days on which the mean daily temperature was above, and only by a small amount. Highest temperature was 78° on the 13th, lowest 39.8° on the 1st. There was a marked lack of bright sunshine during the month.

JULY. A very warm, dry month with a mean temperature of 8.2° above average. Each daily mean temperature was above its respective normal. In eleven instances the maximum temperature was 90° and over, and on the 30th the very unusual reading of 100.2° was recorded. This is the second highest maximum in the history of the Observatory, the highest being 103.2° on July 3rd, 1911. On seven nights the minimum never fell below 70°. The absolute minimum occurred on the 1st as a reading of 53.7°. During the very hot days the relative humidity was generally low accompanied by fresh winds. Rainfall was very light, being 2.7 inches below the average. There were marked dry periods, especially during intensely hot spells, when rain was much required. There were only four days on which rain fell and then only for a brief period, consequently crops suffered severely. Bright sunshine was considerably above the average.

AUGUST. Another very warm month with a mean temperature of 5.7° above the average. On eight days temperature rose to 90° and over. Maximum readings on the 20th, 21st and 22nd were 95.7°, 97.9° and 97.3° respectively. After the 22nd, the weather became much cooler and more pleasant. The rainfall was 1.21 inches below the usual amount, and during a heavy thunderstorm on the afternoon of the 7th, 0.540 inch fell. This was the only rain that fell since the 13th of July, if we omit

slight showers on the 27th of that month. From the 14th to the 24th no rain fell with the exception of a slight sprinkling on the 22nd. During this period an excessive heat wave prevailed and rain was much needed. In the last week there were showers at intervals on the 24th, 26th and 27th. Four thunderstorms were recorded during the month, the heaviest being on the 7th, when the temperature fell from 94° to 76° in a short time, and heavy showers continued from 17.10 to 19 hours. Bright sunshine was considerably above average. Aurora Class II. was observed on the 26th, and Class III. on the 28th.

SEPTEMBER. During the first 14 days the temperature was well above the average, except on the 2nd and 3rd, when it averaged about 5° below the daily normal. On the 7th the maximum temperature reached 89.8°. The relative humidity was however fairly low, with a fresh southwest wind which made the heat bearable. From the 15th to the 26th, with the exception of four days, the weather was cool with strong southwest and northwest winds. Minimum temperatures of 38° and 36° were recorded on the 18th and 19th. A marked rise of temperature set in on the 26th, the maximum rising to 78° on the 27th and 28th. The last two days were quite cool, a hoar frost being noticed on the morning of the 30th. The daily range of temperature on the 4th was 31°, and 28° on the 19th and 20th. The rainfall was below the average. No rain fell from the 8th to the 13th, but otherwise the fall was fairly well distributed. On the 28th, 0.860 inch fell; and up to next morning totalled 1.03 inches. The past three months conjointly have been exceptionally dry. The total rainfall being 5.4 inches below the average. It has been a period of unusual drought. Bright sunshine was slightly under the the average.

OCTOBER. Ideal weather for first eight days, with a large daily range of temperature. On the 8th the maximum reached 85.2°. The weather became much cooler on the 9th, the minimum temperature falling to 30.2° on the 10th. This marked the first decided frost of the season. From the 10th to the 19th the mean temperature varied from 10° above normal on the 15th to 10° below on the 18th, and from the 19th the weather was generally cloudy and mild with strong winds, attaining the force of a gale at times. The rainfall exceeded the normal by 1.5 inches. No

rain fell up to the 8th, and then we had rain every few days; on the 19th 1.70 inches and 0.625 next day. Bright sunshine was a little above average.

NOVEMBER. During the first ten days the weather was quite mild, the temperature rising to 63.8° on the 8th. It became somewhat colder on the morning of the 11th, with strong west and northwest winds, and the weather continued wintry up to the morning of the 26th, with the exception of the 19th and 23rd, when the temperature rose to 47° and 48°. On the 14th and 16th the minimum thermometer fell to 21°, and to 11.7° on the 26th. Temperature rose rapidly during the afternoon of the 26th, the weather then continuing mild to the end of the month. Maximum reading on the 27th was 51°. Bright sunshine registered 19 hours in excess of the normal. Rainfall was 1.5 below average. First measurable snow was on the 13th, the monthly fall showing 1.8 inches greater than usual.

DECEMBER. The mean temperature during the first eleven days varied from normal to 19° above. On the 5th, the maximum temperature was 55°. Cold weather set in on the 12th, continuing to the 26th, with the exception of the 21st, 22nd and 25th, when the temperature rose above the freezing point. The 27th was quite mild. The last four days were cold and wintry. The monthly mean was slightly above average. Minimum on the 16th was 4.9°, and on the 15th, 18th and 31st minimum temperatures of 9° were recorded. Winds were generally strong from southwest and west during the month, and gales were frequent. Rain fell on six days, the fall being below the average. Snow fell on 13 days, totalling about average; 4.4 inches fell on the 22nd, with a west and northwest gale, causing considerable drift. At the end of the month about three inches of snow remained on the ground. Bright sunshine was eight hours greater than normal.

JANUARY, 1916.

RESULTS OF OBSERVATIONS.		Mean for 70 years.
Mean reading of barometer, 32 F. inches,	29.719	29.647
Highest " " on 8th at 6.50h	30.291	30.271
Lowest " " on 5th at 16.25h	28.934	28.913
Range of barometer readings,	1.357	1.358
Highest temperature on the 31st	53.2	44.9
Lowest temperature on the 14th	0.9	- 6.8
Range for the month,	54.1	51.7
Mean of the highest readings,	37.2	29.1
Mean of the lowest readings,	23.1	15.2
Mean daily range,	14.1	13.9
Mean from max. and min. (1840-1898)*	30.1	*21.6
Mean from 24 hourly observations (1881-1908)*	29.3	*21.8
Mean humidity,	75	83
Highest solar (black bulb in vacuum) on 3rd	89.8	
Lowest (radiation) on the 14th	- 1.8	
Monthly range	91.6	
Fall of rain inches	2.190	1.141
Number of days on which rain fell,	12	4.9
Fall of snow inches	3.1	17.3
Number of days on which snow fell	9	14.2
Mean amount of cloud (1.0 indicating overcast sky),	.70	.74

No. of hours in the month in which the wind was	N.	N.E.	E.	S.E.	S.	S. W.	W.	N. W.	C.
	72	41	79	12	124	171	215	30	0

Total number of miles registered during the month was	12,025
Mean velocity	16.2
Highest velocity on 5th, 17th, 22nd and 29th from W. and E.	36
Highest daily average velocity on the 29th	25.4
Lowest " " " " " 8th	5.6
Number of days during the month on which gales occurred	11

JANUARY, 1916.

EXTREME READINGS DURING 77 YEARS.

Highest reading of barometer on 8th in 1866	30.940
Lowest " " " " on 2nd in 1870	28.166
Highest temperature on the 4th in 1874 and 1st in 1876	57.5
Lowest " " " 10th in 1859	- 26.5
Highest monthly mean temperature, 1880	32.7
Lowest " " " 1857	12.8
Greatest rainfall for month in 1843 (inches)	4.295
Least " " " in 1852 and 1856 "	0.000
Greatest number of days on which rain fell, in 1890	14
Greatest snowfall for the month in 1871 (inches)	43.6
Least " " " in 1916 "	3.1
Greatest number of days on which snow fell, in 1861-71-93	23

TABLE OF DIFFERENCES.

The signs + and - mean respectively above and below the monthly normal.

Mean barometric pressure	+ 0.072 inches
Monthly range	- 0.001 inches
Mean temperature	+ 8.5
Mean of highest temperatures	+ 8.1
Mean of lowest " "	+ 7.9
Mean daily range	+ 0.2
Total snowfall	- 14.2 inches
Total rainfall	+ 1.05 "
Mean amount of cloud	- 0.04
Rain fell on the 1st, 2nd, 5th, 10th, 12th, 13th, 20th, 21st, 22nd, 27th, 30th, 31st.	
Heaviest fall from 0h to 24h, in showers, on the 30th	0.405 inches
Snow fell on the 6th, 10th, 12th, 13th, 15th, 16th, 17th, 20th, 29th.	
Heaviest fall from 2h to 7.45h on the 20th.	1.5 inches
Number of cloudy days	16
Number of clear days	2
Fog on the 1st, 21st, 26th, 27th, 31st.	
Lunar corona on 19th.	

FEBRUARY, 1916.

RESULTS OF OBSERVATIONS.		Mean for 70 years.
Mean reading of barometer, 32 F. inches,	29.662	29.638
Highest " " on 14th at 10.45h	30.331	30.226
Lowest " " on 26th at 14.37h	28.856	28.945
Range of barometer readings,	1.475	1.281
Highest temperature on the 17th	43.7	44.3
Lowest temperature on the 21st	- 9.3	- 7.1
Range for the month,	53.0	51.4
Mean of the highest readings,	26.1	29.2
Mean of the lowest readings,	11.8	14.1
Mean daily range,	14.3	15.1
Mean from max. and min. (1840-1898)*	18.9	*22.5
Mean from 24 hourly observations (1881-1908)*	18.3	*21.0
Mean humidity,	72	81
Highest solar (black bulb in vacuum) on 26th	124.0	
Lowest (radiation) on the 21st	- 11.7	
Monthly range	135.7	
Fall of snow inches	24.7	16.5
Number of days on which snow fell	17	12.4
Fall of rain inches	0.000	0.931
Number of days on which rain fell,	0	4.7
Mean amount of cloud (1.0 indicating overcast sky), .65		.76

No. of hours in the month in which the wind was	N.	N.E.	E.	S.E.	S.	S. W.	W.	N. W.	C.
	105	58	42	20	21	115	180	155	0

Total number of miles registered during the month was	9,987
Mean velocity	14.3
Highest velocity at 15h on the 7th from the west	46
Highest daily average velocity on the 7th	29.3
Lowest " " " " 21st	6.3
Number of days during the month on which gales occurred	4

FEBRUARY, 1916.

EXTREME READINGS DURING 77 YEARS.

Highest reading of barometer on 4th in 1887	30.522
Lowest " " " " on 22nd in 1912	28.413
Highest temperature on the 4th in 1890	53.8
Lowest " " " " 5th in 1855	- 25.4
Highest monthly mean temperature, 1882	30.3
Lowest " " " " 1875	10.2
Greatest rainfall for month in 1842 (inches)	3.625
Least " " " " in 1841-46-56-73-77-1901-16 "	0.000
Greatest number of days on which rain fell, in 1857	11
Greatest snowfall for the month in 1846 (inches)	46.1
Least " " " " in 1851 "	2.4
Greatest number of days on which snow fell, in 1843	21

TABLE OF DIFFERENCES.

The signs + and - mean respectively above and below the monthly normal.

Mean barometric pressure	+0.024 inches
Monthly range	+0.194 inches
Mean temperature	- 3.6
Mean of highest temperatures	- 3.1
Mean of lowest " "	- 2.3
Mean daily range	- 0.8
Total snowfall	+ 8.2 "
Total rainfall	- 0.931 inches
Mean amount of cloud	- 0.11
Snow fell on the 2nd, 3rd, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 18th, 20th, 24th, 25th, 26th, 27th, 29th.	
Heaviest fall from 6h to 19h on 11th and 0h to 11h on the 25th	5.0 inches
Number of cloudy days	11
Number of clear days	2
Lunar halo on the 14th.	
Lunar corona on 17th.	
Fog on the 22nd.	

MARCH, 1916.

RESULTS OF OBSERVATIONS.		Mean for 70 years.
Mean reading of barometer, 32 F. inches,	29.564	29.609
Highest " " on 17th at 12h	29.961	30.129
Lowest " " on 10th at 2.10h	28.757	28.919
Range of barometer readings,	1.204	1.210
Highest temperature on the 29th	57.4	52.1
Lowest temperature on the 18th	- 2.4	- 2.6
Range for the month,	59.8	54.7
Mean of the highest readings,	33.0	36.3
Mean of the lowest readings,	17.7	21.9
Mean daily range,	15.3	14.4
Mean from max. and min. (1840-1898)*	25.4	*28.7
Mean from 24 hourly observations (1881-1908)*	25.3	*29.1
Mean humidity,	70	78
Highest solar (black bulb in vacuum) on 10th	126.5	
Lowest (radiation) on the 3rd	- 2.7	
Monthly range	129.2	
Fall of snow inches	18.6	11.5
Number of days on which snow fell	15	10.4
Fall of rain inches	0.875	1.498
Number of days on which rain fell,	3	6.7
Mean amount of cloud (1.0 indicating overcast sky),	.57	.67

No. of hours in the month in which the wind was	N.	N.E.	E.	S.E.	S.	S. W.	W.	N. W.	C.
	100	162	59	19	26	83	153	142	0

Total number of miles registered during the month was	10,465
Mean velocity	14.1
Highest velocity at 20 and 21h on the 6th from the east	44
Highest daily average velocity on the 6th	24.5
Lowest " " " " " 21st	4.6
Number of days during the month on which gales occurred	4

MARCH, 1916.

EXTREME READINGS DURING 77 YEARS.

Highest reading of barometer on 24th in 1906	30.508
Lowest " " " " on 19th in 1859	28.286
Highest temperature on the 28th in 1910	75.2
Lowest " " " 3rd in 1868	- 15.6
Highest monthly mean temperature, 1903	38.9
Lowest " " " 1885	18.5
Greatest rainfall for month in 1895 (inches)	4.054
Least " " " in 1856	0.000
Greatest number of days on which rain fell, in 1878	17
Greatest snowfall for the month in 1870 (inches)	62.4
Least " " " in 1858 and 1903	0.2
Greatest number of days on which snow fell, in 1877	21

TABLE OF DIFFERENCES.

The signs + and - mean respectively above and below the monthly normal.

Mean barometric pressure	- 0.045 inches
Monthly range	- 0.006 inches
Mean temperature	- 3.3
Mean of highest temperatures	- 3.3
Mean of lowest " "	- 4.2
Mean daily range	+ 0.9
Total rainfall	- 0.623 inches
Total snowfall	+ 7.1 "
Mean amount of cloud	- 0.10
Rain fell on the 6th, 27th, 28th.	
Heaviest fall from 3.30h to 13.15h on the 27th	0.765 inches
Snow fell on the 1st, 2nd, 4th, 6th, 8th, 9th, 10th, 11th, 12th, 13th, 14th, 18th, 19th, 20th, 21st.	
Heaviest fall from 12.20h to 22.20h on 6th	5.0 inches
Number of cloudy days	8
Number of clear days	4
Solar halo on the 3rd and 15th.	
Lunar halo on the 13th.	
Thunderstorms on the 6th during a snowstorm which turned to sleet and rain, freezing as it fell.	
Aurora class IV. on the 16th from 19.30h. Class II on the 29th; streamers very vivid.	

APRIL, 1916.

RESULTS OF OBSERVATIONS.		Mean for 70 years.
Mean reading of barometer, 32 F. inches,	29.552	29.600
Highest " " on 3rd at 9h	29.859	30.073
Lowest " " on 14th at 6.45h	29.055	29.040
Range of barometer readings,	0.804	1.033
Highest temperature on the 30th	68.6	68.3
Lowest temperature on the 7th	25.3	19.6
Range for the month,	43.3	48.7
Mean of the highest readings,	51.9	49.6
Mean of the lowest readings,	36.9	33.3
Mean daily range,	15.0	16.3
Mean from max. and min. (1840-1898)*	44.4	*41.2
Mean from 24 hourly observations (1881-1908)*	43.8	*42.1
Mean humidity,	73	70
Highest solar (black bulb in vacuum) on 29th	123.0	
Lowest (radiation) on the 7th	23.0	
Monthly range	100.0	
Fall of snow inches	1.9	2.5
Number of days on which snow fell	3	3.5
Fall of rain inches	3.045	2.148
Number of days on which rain fell,	16	9.9
Mean amount of cloud (1.0 indicating overcast sky), .62		.58

No. of hours in the month in which the wind was	N.	N.E.	E.	S.E.	S.	S. W.	W.	N. W.	C.
	64	116	137	23	90	80	98	110	2

Total number of miles registered during the month was	8,430
Mean velocity	11.7
Highest velocity at 16 and 17h on the 18th from the northwest	33
Highest daily average velocity on the 18th	22.0
Lowest " " " " 25th	3.8
Number of days during the month on which gales occurred	3

APRIL, 1916.

EXTREME READINGS DURING 77 YEARS.

Highest reading of barometer on 20th in 1897	30.308
Lowest " " " " on 2nd in 1863, 28th 1887	28.704
Highest temperature on the 22nd in 1842	89.8
Lowest " " " 2nd in 1857	5.9
Highest monthly mean temperature, 1878	48.8
Lowest " " " 1874	34.2
Greatest rainfall for month in 1910 (inches)	4.900
Least " " " in 1881 " "	0.075
Greatest number of days on which rain fell, in 1871	17
Greatest snowfall for the month in 1857 (inches)	12.9
Least " " " in 1843-56-58-70-87-88-90-91 " "	0.1
Greatest number of days on which snow fell, in 1857	11

TABLE OF DIFFERENCES.

The signs + and - mean respectively above and below the monthly normal.

Mean barometric pressure	-0.048 inches
Monthly range	-0.229 inches
Mean temperature	+3.2
Mean of highest temperatures	+2.3
Mean of lowest " "	+3.6
Mean daily range	-1.3
Total rainfall	+0.897 inches
Total snowfall	-0.6 "
Mean amount of cloud	+0.04
Rain fell on the 1st, 4th, 8th, 11th, 12th, 13th, 14th, 16th, 17th, 19th, 20th, 21st, 22nd, 23rd 24th, 25th.	
Heaviest fall from 0h to 8.30h on the 22nd	0.660 inches
Number of cloudy days	13
Number of clear days	6
Snow fell on the 6th, 8th, 9th.	
Heaviest fall at intervals for 7 hours on 6th	0.9 inches
Fog on the 1st, 17th, 22nd, 25th, 28th.	
Thunder alone on the 26th.	
Lightning alone on the 30th.	
Thunderstorms on the 13th, 16th, 20th.	
Heavy dew on the 26th and 28th.	
Aurora class II. on the 28th from 21.10 to 21.30h.	

MAY, 1916.

RESULTS OF OBSERVATIONS.		Mean for 70 years.
Mean reading of barometer, 32 F. inches,	29.516	29.577
Highest " " on 13th at 8h	29.972	29.967
Lowest " " on 10th at 21.50h	28.940	29.153
Range of barometer readings,	1.032	0.814
Highest temperature on the 24th	81.4	77.9
Lowest temperature on the 19th	35.7	30.9
Range for the month,	45.7	47.0
Mean of the highest readings,	63.8	62.0
Mean of the lowest readings,	44.8	43.3
Mean daily range,	19.0	18.7
Mean from max. and min. (1840-1898)*	54.3	*52.4
Mean from 24 hourly observations (1881-1908)*	53.8	*53.4
Mean temperature of dew point	44	
Mean humidity,	70	70
Mean force of vapour	0.296	0.280
Highest solar (black bulb in vacuum) on 28th	138.5	
Lowest (radiation) on the 19th	32.0	
Monthly range	106.5	
Fall of snow inches	0.0	0.1
Number of days on which snow fell	0	0.4
Fall of rain inches	5.585	2.971
Number of days on which rain fell,	14	12.4
Mean amount of cloud (1.0 indicating overcast sky), .56		.57

No. of hours in the month in which the wind was	N.	N.E.	E.	S.E.	S.	S. W.	W.	N. W.	C.
	71	115	106	18	86	97	171	80	0

Total number of miles registered during the month was	9,066
Mean velocity	12.2
Highest velocity at 15h on the 11th from the west	54
Highest daily average velocity on the 11th	33.4
Lowest " " " " " 28th	4.7
Number of days during the month on which gales occurred	4

MAY, 1916.

EXTREME READINGS DURING 77 YEARS.

Highest reading of barometer on 2nd in 1849	30.214
Lowest " " " " on 6th in 1861	28.644
Highest temperature on the 30th in 1895	93.4
Lowest " " " 3rd in 1867	24.6
Highest monthly mean temperature, 1911	61.3
Lowest " " " 1867	46.6
Greatest rainfall for month in 1894 (inches)	9.395
Least " " " in 1891 " "	0.495
Greatest number of days on which rain fell, in 1890	23
Greatest snowfall for the month in 1875 (inches)	3.1
Least " " " in 1910-13-14-15-16 " "	0.0
Greatest number of days on which snow fell, in 1905	5

TABLE OF DIFFERENCES.

The signs + and - mean respectively above and below the monthly normal.

Mean barometric pressure	-0.061 inches
Monthly range	+0.218 inches
Mean temperature	+1.9
Mean of highest temperatures	+1.8
Mean of lowest " "	+1.5
Mean daily range	+0.3
Total rainfall	+2.614 inches
Total snowfall	-0.1 " "
Mean amount of cloud	-0.01
Rain fell on the 1st, 3rd, 6th, 8th, 10th, 14th, 15th, 16th, 19th, 22nd, 27th, 28th 29th, 30th.	
Heaviest fall from 18.55 h to 24h on the 29th	1.100 inches
Number of cloudy days	8
Number of clear days	5
Fog on the 7th, 16th, 22nd, 23rd, 28th, 29th.	
Thunderstorms on the 8th, 15th, 27th, 28th,	
Rainbow on 19th.	

JUNE, 1916.

RESULTS OF OBSERVATIONS.		Mean for 70 years.
Mean reading of barometer, 32 F. inches,	29.532	29.572
Highest " " on 1st at 7h	29.818	29.909
Lowest " " on 2nd at 20.05h	29.185	29.165
Range of barometer readings,	0.633	0.744
Highest temperature on the 13th	78.0	86.4
Lowest temperature on the 1st	39.8	40.1
Range for the month,	38.2	46.3
Mean of the highest readings,	69.1	72.4
Mean of the lowest readings,	51.2	52.9
Mean daily range,	17.9	19.5
Mean from max. and min. (1840-1898)*	60.2	*62.4
Mean from 24 hourly observations (1881-1908)*	59.6	*64.0
Mean temperature of dew point	53	
Mean humidity,	77	73
Mean force of vapour	0.403	0.418
Highest solar (black bulb in vacuum) on 13th	141.4	
Lowest (radiation) on the 1st	35.9	
Monthly range	105.5	
Fall of rain inches	4.290	2.764
Number of days on which rain fell,	18	11.7
Mean amount of cloud (1.0 indicating overcast sky), .60		.53

No. of hours in the month in which the wind was	N.	N.E.	E.	S.E.	S.	S. W.	W.	N. W.	C.
	53	165	143	19	74	96	83	83	4

Total number of miles registered during the month was	7,799
Mean velocity	10.8
Highest velocity at 10h on the 7th from the east	32
Highest daily average velocity on the 7th	25.0
Lowest " " " " " 29th	4.8
Number of days during the month on which gales occurred	1

JUNE, 1916.

EXTREME READINGS DURING 77 YEARS.

Highest reading of barometer on 10th in 1913	30.160
Lowest " " " " on the 25th in 1902	28.875
Highest temperature on the 27th in 1901	97.1
Lowest " " " 10th in 1842	28.1
Highest monthly mean temperature, 1885	67.9
Lowest " " " 1842	56.5
Greatest rainfall for month in 1870 (inches)	8.090
Least " " " in 1864 " "	0.570
Greatest number of days on which rain fell, in 1869	22
Flurries of snow on two days in 1859	

TABLE OF DIFFERENCES.

The signs + and - mean respectively above and below the monthly normal.

Mean barometric pressure	-0.040 inches
Monthly range	-0.111 inches
Mean temperature	-2.2
Mean of highest temperatures	-3.3
Mean of lowest " "	-1.7
Mean daily range	-1.6
Total rainfall	+1.526 inches
Mean amount of cloud	+0.07
Rain fell on the 2nd, 3rd, 4th, 5th, 7th, 8th, 9th, 10th, 11th, 12th, 14th, 15th, 16th, 18th, 19th, 23rd, 24th, 29th.	
Heaviest fall from 0.05 to 9.45h and from 10.10 to 11h on the 11th	1.670 inches
Number of cloudy days	9
Number of clear days	4
Thunderstorms on the 2nd, 4th, 5th, 7th, 9th, 15th, 24th.	
Fog on the 7th, 12th, 15th and 24th.	
Heavy dew on the 26th and 30th.	
Lightning alone on the evening of the 4th.	

JULY, 1916.

RESULTS OF OBSERVATIONS.		Mean for 70 years.
Mean reading of barometer, 32 F. inches,	29.618	29.585
Highest " " on 28th at 10-11h	29.899	29.889
Lowest " " on 2nd at 16h	29.171	29.420
Range of barometer readings,	0.728	0.469
Highest temperature on the 30th	100.2	89.8
Lowest temperature on the 1st	53.7	47.5
Range for the month,	46.5	42.3
Mean of the highest readings,	86.6	77.9
Mean of the lowest readings,	65.5	58.2
Mean daily range,	21.1	19.7
Mean from max. and min. (1840-1898)*	76.0	*67.8
Mean from 24 hourly observations (1881-1908)*	75.7	*68.9
Mean temperature of dew point	64	
Mean humidity,	68	72
Mean force of vapour	0.604	0.488
Highest solar (black bulb in vacuum) on the 13th	148.8	
Lowest (radiation) on the 2nd	51.2	
Monthly range	97.6	
Fall of rain inches	0.360	3.039
Number of days on which rain fell,	4	11.2
Mean amount of cloud (1.0 indicating overcast sky), .31		.49

No. of hours in the month in which the wind was	N.	N.E.	E.	S.E.	S.	S. W.	W.	N. W.	C.
	103	124	154	23	84	83	117	54	2

Total number of miles registered during the month was	6,664
Mean velocity	9.0
Highest velocity at 13h on the 31st from the northwest	24
Highest daily average velocity on the 31st	16.7
Lowest " " " " " 11th	4.8
Number of days during the month on which gales occurred	0

JULY, 1916.

EXTREME READINGS DURING 77 YEARS.

Highest reading of barometer on 7th in 1892	30.192
Lowest " " " " on the 24th in 1911	29.006
Highest temperature on the 3rd in 1911	103.2
Lowest " " " 12th in 1843	38.7
Highest monthly mean temperature, 1916	76.0
Lowest " " " 1891	63.7
Greatest rainfall for month in 1841 (inches)	8.150
Least " " " in 1916	0.360

Greatest number of days on which rain fell in 1861: 16
66-70-80-1902

TABLE OF DIFFERENCES.

The signs + and - mean respectively above and below the monthly normal.

Mean barometric pressure	+ 0.033 inches
Monthly range	+ 0.259 inches
Mean temperature	+ 8.2
Mean of highest temperatures	+ 8.7
Mean of lowest " "	+ 7.3
Mean daily range	+ 1.4
Total rainfall	- 2.679 inches
Mean amount of cloud	0.18
Rain fell on th 2nd, 3rd, 13th, 27th.	

Heaviest fall from 10.10 to 10.40 a.m., and from 3.15 to 3.45 p.m. on the 2nd	0.240 inches
Number of cloudy days	0
Number of clear days	11
Thunderstorms on the 2nd, 12th and 13th.	
Lightning alone on the 4th, 7th, 9th, 22nd - evening of 26th, 30th.	
Thunder alone on 8th, 19th and morning of 26th.	
Fog on the 23rd, 24th, 26th.	

AUGUST, 1916.

RESULTS OF OBSERVATIONS.		Mean for 70 years.	
Mean reading of barometer, 32 F. inches,	29.607	29.617	
Highest " " on 1st at 8h	29.898	29.909	
Lowest " " on 8th at 15.10h	29.273	29.257	
Range of barometer readings,	0.625	0.652	
Highest temperature on the 21st	97.9	87.0	
Lowest temperature on the 31st	46.0	45.7	
Range for the month,	51.9	41.3	
Mean of the highest readings,	83.9	76.1	
Mean of the lowest readings,	60.0	57.1	
Mean daily range,	23.9	19.0	
Mean from max. and min. (1840-1898)*	72.0	*66.3	
Mean from 24 hourly observations (1881-1908)*	70.8	*66.9	
Mean temperature of dew point	60		
Mean humidity,	70	74	
Mean force of vapour	0.525	0.483	
Highest solar (black bulb in vacuum) on the 22nd	147.0		
Lowest (radiation) on the 31st	42.6		
Monthly range	104.4		
Fall of rain	inches 1.565	2.770	
Number of days on which rain fell,	10	10.9	
Mean amount of cloud (1.0 indicating overcast sky), .34		.49	

No. of hours in the month in which the wind was	N.	N.E.	E.	S.E.	S.	S. W.	W.	N. W.	C.
	72	46	127	6	98	57	268	69	1

Total number of miles registered during the month was	6,576
Mean velocity	8.8
Highest velocity at 17h from the northwest and at 18h from the west on the 8th	26
Highest daily average velocity on the 13th	16.9
Lowest " " " " 18th	4.2
Number of days during the month on which gales occurred	0

AUGUST, 1916.

EXTREME READINGS DURING 77 YEARS.

Highest reading of barometer on 16th in 1880	30.042
Lowest " " " " on the 22nd in 1912	29.028
Highest temperature on the 24th in 1864	99.2
Lowest " " " 18th in 1855 and 27th in 1870	40.0
Highest monthly mean temperature, 1900	72.5
Lowest " " " 1866	60.8
Greatest rainfall for month in 1915 (inches)	8.135
Least " " " in 1874 and 1894	0.386
Greatest number of days on which rain fell, in 1872	19

TABLE OF DIFFERENCES.

The signs + and - mean respectively above and below the monthly normal.

Mean barometric pressure	-0.010 inches
Monthly range	-0.027 inches
Mean temperature	+5.7
Mean of highest temperatures	+7.8
Mean of lowest " "	+2.9
Mean daily range	+4.9
Total rainfall	-1.205 inches
Mean amount of cloud	-0.15
Rain fell on the 3rd, 7th, 8th, 11th, 12th, 13th, 22nd, 24th, 26th and 27th.	
Heaviest fall from 2.55 to 3.00 p.m., and from 5.10 to 7.00 p.m. on the 7th	0.540 inches
Number of cloudy days	1
Number of clear days	8
Heavy smoke over city, likely from forest fires on 6th and 7th.	
Thunderstorms on the 7th, 8th, 11th and 24th.	
Rainbow on the 7th.	
Heavy dew on the 17th, 22nd, 24th and 26th.	
Fog on the 17th, 18th, 22nd, 24th.	
Thunder alone on the 22nd.	
Aurora class IV. on the 26th, class II. on 28th.	

SEPTEMBER, 1916.

RESULTS OF OBSERVATIONS.		Mean for 70 years.
Mean reading of barometer, 32 F. inches,	29.629	29.667
Highest " " on 30th at 24h	29.992	30.037
Lowest " " on 28th at 23h	29.326	29.187
Range of barometer readings,	0.666	0.850
Highest temperature on the 7th	89.8	82.7
Lowest temperature on the 30th	34.7	35.7
Range for the month,	55.1	47.0
Mean of the highest readings,	71.2	68.2
Mean of the lowest readings,	51.1	50.2
Mean daily range,	20.1	18.0
Mean from max. and min. (1840-1898)*	61.2	*58.8
Mean from 24 hourly observations (1881-1908)*	59.9	*60.5
Mean temperature of dew point	50	
Mean humidity,	72	78
Mean force of vapour	0.383	0.393
Highest solar (black bulb in vacuum) on the 4th	156.4	
Lowest (radiation) on the 30th	31.7	
Monthly range	124.7	
Fall of rain inches	1.660	3.177
Number of days on which rain fell,	10	11.4
Mean amount of cloud (1.0 indicating overcast sky), .49		.50

No. of hours in the month in which the wind was	N.	N.E.	E.	S.E.	S.	S. W.	W.	N. W.	c.
	62	46	71	36	100	165	134	105	1

Total number of miles registered during the month was	7,564
Mean velocity	10.5
Highest velocity at 17h on the 29th from the northwest	30
Highest daily average velocity on the 29th	16.3
Lowest " " " " 14th	4.9
Number of days during the month on which gales occurred	1

SEPTEMBER, 1916.

EXTREME READINGS DURING 77 YEARS.	
Highest reading of barometer on 22nd in 1904	30.243
Lowest " " " " on the 29th in 1848	28.863
Highest temperature on the 2nd in 1898	97.1
Lowest " " " 23rd in 1896	27.6
Highest monthly mean temperature, 1865	64.5
Lowest " " " 1848	53.4
Greatest rainfall for month in 1843 (inches)	9.760
Least " " " in 1867 "	0.395
Greatest number of days on which rain fell, in 1907	19

TABLE OF DIFFERENCES.

The signs + and - mean respectively above and below the monthly normal.

Mean barometric pressure	- 0.038 inches
Monthly range	- 0.184 inches
Mean temperature	+ 2.4
Mean of highest temperatures	+ 3.0
Mean of lowest " "	+ 0.9
Mean daily range	+ 2.1
Total rainfall	- 1.517 inches
Mean amount of cloud	- 0.01
Rain fell on the 1st, 4th, 5th, 14th, 17th, 21st, 22nd, 26th, 28th and 29th.	
Heaviest fall, in showers, on the 28th	0.860 inches
Number of cloudy days	6
Number of clear days	6
Thunderstorms on the 1st, 7th, 22nd and 26th.	
Aurora class III. on the 2nd, class II. on 26-27th.	
Fog on the 1st, 6th, 7th.	
Heavy dew on the mornings of 10th, 23rd, 24th.	
Hoar frost on morning of 30th.	

OCTOBER, 1916.

RESULTS OF OBSERVATIONS.		Mean for 70 years.
Mean reading of barometer, 32 F. inches,	29.697	29.651
Highest " " on 18th at 9h	30.109	30.112
Lowest " " on 20th at 14.55h	28.955	29.066
Range of barometer readings,	1.154	1.046
Highest temperature on the 8th	85.2	70.3
Lowest temperature on the 18th	29.7	25.5
Range for the month,	55.5	44.8
Mean of the highest readings,	59.6	54.9
Mean of the lowest readings,	39.5	39.1
Mean daily range,	20.1	15.8
Mean from max. and min. (1840-1898)*	49.6	*46.6
Mean from 24 hourly observations (1881-1908)*	48.3	*48.1
Mean temperature of dew point	40	
Mean humidity,	74	79
Mean force of vapour	0.260	0.258
Highest solar (black bulb in vacuum) on the 6th	123.0	
Lowest (radiation) on the 27th	25.3	
Monthly range	97.7	
Fall of snow inches	0.0	0.6
Number of days on which snow fell	0	1.6
Fall of rain inches	3.930	2.402
Number of days on which rain fell,	8	12.4
Mean amount of cloud (1.0 indicating overcast sky), .47		.61

No. of hours in the month in which the wind was	N.	N.E.	E.	S.E.	S.	S. W.	W.	N. W.	C.
	84	96	124	20	64	128	158	70	0

Total number of miles registered during the month was	9,127
Mean velocity	12.3
Highest velocity at 2h on the 21st from the southwest	38
Highest daily average velocity on the 21st	23.5
" " " " 24th	4.7
Number of days on which gales occurred	7

OCTOBER, 1916.

EXTREME READINGS DURING 77 YEARS.

Highest reading of barometer on 28th in 1847	30.396
Lowest " " " " on the 14th in 1893	28.227
Highest temperature on the 15th in 1897	85.7
Lowest " " " " 31st in 1844	15.9
Highest monthly mean temperature, 1900	55.7
Lowest " " " " 1841	41.8
Greatest rainfall for month in 1849 (inches)	5.965
Least " " " " in 1901	0.560
Greatest number of days on which rain fell, in 1864	22
Greatest snowfall for the month in 1844 (inches)	12.0
Least " " " " in 1916 (inches)	0.0
Greatest number of days on which snow fell, in 1869	7

TABLE OF DIFFERENCES.

The signs + and - mean respectively above and below the monthly normal.

Mean barometric pressure	+0.046 inches
Monthly range	+0.108 inches
Mean temperature	+3.0
Mean of highest temperatures	+4.7
Mean of lowest " "	+0.4
Mean daily range	+4.3
Total rainfall	+1.528 inches
Total snowfall	-0.6 "
Mean amount of cloud	-0.14
Rain fell on th 9th, 13th, 16th, 19th, 20th, 25th, 27th and 31st.	
Heaviest fall from 3.00 a.m. to 7.00 p.m., and from 7.45 to 9.45 p.m. on the 19th	1.695 inches
Number of cloudy days	7
Number of clear days	9
Hoar frost on 1st, 2nd, 4th, 7th, 12th, 23rd (heavy) and 28th.	
Heavy dew on the 4th, 5th, and 6th.	
Fog on the 4th, 7th, 19th, 20th.	
Ground fog on the 29th.	
Aurora class III. on the 7th.	
Thunderstorms on the 20th and 31st.	

NOVEMBER, 1916.

RESULTS OF OBSERVATIONS.		Mean for 70 years.
Mean reading of barometer, 32 F. inches,	29.670	29.627
Highest " " on 21st at 10.30h	30.189	30.169
Lowest " " on 23rd at 20.15h	28.684	28.975
Range of barometer readings,	1.505	1.194
Highest temperature on the 8th	63.8	57.9
Lowest temperature on the 26th	11.7	13.5
Range for the month,	52.1	44.4
Mean of the highest readings,	44.5	42.5
Mean of the lowest readings,	30.7	30.1
Mean daily range,	13.8	12.4
Mean from max. and min. (1840-1898)*	37.6	*36.0
Mean from 24 hourly observations (1881-1908)*	36.2	*37.1
Mean humidity,	77	80
Highest solar (black bulb in vacuum) on the 11th	104.0	
Lowest (radiation) on the 26th	9.2	
Monthly range	94.8	
Fall of snow inches	6.4	4.6
Number of days on which snow fell	6	7.3
Fall of rain inches	1.000	2.488
Number of days on which rain fell,	7	10.3
Mean amount of cloud (1.0 indicating overcast sky),	.57	.74
No. of hours in the month in which the wind was	N. 77 N.E. 155 E. 69 S.E. 10 S. 49 S. W. 101 W. 222 N. W. 37 C. 0	
Total number of miles registered during the month was		9,422
Mean velocity		13.1
Highest velocity at 14h on the 24th from the west		50
Highest daily average velocity on the 24th		34.0
Lowest " " " " 22nd		5.3
Number of days during the month on which gales occurred		4

NOVEMBER, 1916.

EXTREME READINGS DURING 77 YEARS.	
Highest reading of barometer on 30th in 1887	30.592
Lowest " " " " on the 9th in 1913	28.327
Highest temperature on the 3rd in 1903	70.2
Lowest " " " " 30th in 1875	5.0
Highest monthly mean temperature, 1902	43.0
Lowest " " " " 1873	27.5
Greatest rainfall for month in 1846 (inches)	5.805
Least " " " " in 1904	0.080
Greatest number of days on which rain fell, in 1877	16
Greatest snowfall for the month in 1873 (inches)	19.6
Least " " " " in 1847 and 1850	not measurable
Greatest number of days on which snow fell, in 1869-73-92	18

TABLE OF DIFFERENCES.

The signs + and - mean respectively above and below the monthly normal.

Mean barometric pressure	+0.043 inches
Monthly range	+0.311 inches
Mean temperature	+1.6
Mean of highest temperatures	+2.0
Mean of lowest " "	+0.6
Mean daily range	+1.4
Total rainfall	-1.488 inches
Total snowfall	+1.8 "
Mean amount of cloud	-0.17
Rain fell on the 1st, 2nd, 4th, 9th, 23rd, 28th, 29th.	
Heaviest fall from 12.15 to 19.40h on the 4th	0.280 inches
Snow fell on the 13th, 14th, 15th, 16th, 17th, 25th,	
Heaviest fall from 0h to 18.45h on the 17th	2.7 inches
Number of cloudy days	7
Number of clear days	6
Solar halo on the 3rd.	
Fog on the 6th, 7th, 8th, 22nd, 23rd, 28th, 29th, 30th.	
Lunar halo on the 10th.	

DECEMBER, 1916.

RESULTS OF OBSERVATIONS.		Mean for 70 years.
Mean reading of barometer, 32 F. inches,	29.558	29.644
Highest " " on 26th at 9h	30.168	30.226
Lowest " " on 12th at 12.43h	29.037	28.936
Range of barometer readings,	1.131	1.290
Highest temperature on the 5th	55.0	47.5
Lowest temperature on the 6th	4.9	-2.3
Range for the month,	50.1	49.8
Mean of the highest readings,	33.1	32.5
Mean of the lowest readings,	20.8	20.0
Mean daily range,	12.3	12.5
Mean from max. and min. (1840-1898)*	26.9	*26.2
Mean from 24 hourly observations (1881-1908)*	26.7	*27.6
Mean humidity,	76	82
Highest solar (black bulb in vacuum) on the 2nd	97.0	
Lowest (radiation) on the 29th	2.6	
Monthly range	94.4	
Fall of snow inches	12.6	13.0
Number of days on which snow fell	13	13.1
Fall of rain inches	0.765	1.531
Number of days on which rain fell,	6	6.3
Mean amount of cloud (1.0 indicating overcast sky), .67		.77

No. of hours in the month in which the wind was	N.	N.E.	E.	S.E.	S.	S. W.	W.	N. W.	C.
	53	71	102	42	25	141	243	67	0

Total number of miles registered during the month was	11,301
Mean velocity	15.2
Highest velocity at 21h to 23h on the 26th from the east	42
Highest daily average velocity on the 6th	27.3
Lowest " " " " 21st	6.5
Number of days during the month on which gales occurred	10

DECEMBER, 1916.

EXTREME READINGS DURING 77 YEARS.	
Highest reading of barometer on 1st in 1887	30.594
Lowest " " " " on 9th in 1855, 14th, 1856	28.459
Highest temperature on the 31st in 1875	61.0
Lowest " " " 21st in 1871	-21.0
Highest monthly mean temperature, 1889	34.3
Lowest " " " 1876	17.2
Greatest rainfall for month in 1841 (inches)	6.600
Least " " " in 1840 and 1845	0.000
Greatest number of days on which rain fell, in 1889 and 1911	14
Greatest snowfall for the month in 1872 (inches)	38.0
Least " " " in 1877	0.3
Greatest number of days on which snow fell, in 1872	24

TABLE OF DIFFERENCES.

The signs + and - mean respectively above and below the monthly normal.

Mean barometric pressure	-0.086 inches
Monthly range	-0.159 inches
Mean temperature	+0.7
Mean of highest temperatures	+0.6
Mean of lowest "	+0.8
Mean daily range	-0.2
Total rainfall	-0.766 inches
Total snowfall	-0.4 "
Mean amount of cloud	-0.10
Rain fell on the 4th, 5th, 7th, 8th, 9th, 27th.	
Heaviest fall from 0h to 11h on the 27th	0.380 inches
Snow fell on the 9th, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 20th, 21st, 22nd, 24th, 28th.	
Heaviest fall from 0h to 11.55h and from 20.25 to 21.20h on the 22nd	4.4 inches
Number of cloudy days	11
Number of clear days	2
Fog on the 4th, 24th and 27th.	
Lunar halo on the 13th.	
Hail on the 26th.	

SUMMARY OF OBSERVATIONS. 1916.

RESULTS OF OBSERVATIONS.		Mean for 70 years
Mean reading of the barometer, 32° F., inches	29.610	29.619
Highest " " " " on February 14th "	30.331	30.371
Lowest " " " " on November 23rd "	28.684	28.707
Range of barometer readings	1.647	1.664
Highest temperature on July 30th,	100.2	91.2
Lowest temperature on February 21st,	-9.3	-12.0
Range for the year	109.5	103.2
Mean of the highest readings	55.0	52.5
Mean of the lowest readings	37.8	36.3
Mean daily range	17.2	16.2
Mean from max. and min. (1840-1898)*	46.4	*44.2
Mean from 24 hourly obs. (1881-1908)*	45.7	*45.0
Mean humidity	73	77
Highest solar (black bulb in vacuum) Sept. 4th	156.4	
Lowest (radiation) on February 21st	-11.7	
Yearly range	168.1	
Fall of snow	inches 67.3	66.0
Number of days on which snow fell	63	62.9
Fall of rain	inches 25.265	26.863
Number of days on which rain fell	108	112.9
Mean amount of cloud (1.0 indicating overcast sky)	.55	.62

No. of hours in the year in which the wind was	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	C.
	916	1195	1213	248	841	1317	2042	1002	10

Total number of miles registered during the year was	108,426
Mean velocity,	12.4
Highest velocity on May 11th, from the west,	54
Highest daily average velocity on Nov. 24th	34.0
Least daily average velocity on April 25th	3.8
Number of days during the year on which gales occurred	49

SUMMARY, 1916.

ABSOLUTE EXTREMES DURING 77 YEARS

Readings of the barometer, in inches.		
Highest monthly mean, February, 1906,		29.819
Lowest " " " " March, 1859,		29.412
Highest yearly " " 1849,		29.668
Lowest " " " " 1864,		29.560
Greatest monthly range of barometer, January, 1870,		2.046
Least " " " " " " June, 1841,		0.425
Highest reading, January 8th, 1866,		30.940
Lowest " " " " " " January 2nd, 1870		28.166
Extreme range		2.774

Temperatures.

Highest monthly mean, July, 1916,		76.0
Lowest " " " " February, 1875,		10.2
Highest yearly " " " " 1913,		48.0
Lowest " " " " " " 1875,		40.8
Highest reading on July 3rd, 1911,		103.2
Lowest reading on January 10th, 1859,		-26.5

Rainfall and snowfall, in inches.

Greatest rainfall in a month, September, 1843,		9.760
Greatest number of rainy days in a month, May, 1890,		23
Greatest rainfall in a year, 1843,		43.555
Least " " " " " " 1874,		17.574
Greatest number of rainy days in a year, 1890,		145
Least " " " " " " " " 1841,		80
Greatest fall of snow in a month, March, 1870,		62.4
Greatest number of days of snow in a month, December, 1870, and December, 1872,		24
Greatest fall of snow in a year in 1870,		122.9
Least " " " " " " " " 1899,		31.8
Greatest number of days of snow in a year, 1859,		87
Least " " " " " " " " 1848,		33

TOTAL AMOUNT OF SUNSHINE RECORDED ON EACH DAY—1916.

Month.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
January.	0	0	7.0	0	0.6	6.8	7.9	1.9	0.2	0	2.6	0	3.1	6.7	0.8	2.9	1.2
February.	5.3	1.0	4.2	7.2	0	0.9	3.1	1.8	2.1	1.9	0	0	10.0	9.2	0	0.6	2.3
March.	6.4	8.3	3.0	6.8	10.2	0	5.2	1.6	6.3	8.0	5.6	0	9.1	1.4	0	9.6	11.3
April.	0	9.4	10.7	1.0	9.1	4.3	11.6	0	7.9	12.1	0.4	5.6	1.8	2.7	12.5	5.9	0.9
May.	0.9	12.8	0	11.6	4.7	6.3	12.6	7.1	12.3	2.2	13.0	10.5	12.6	0	3.2	0.1	0.1
June.	14.2	2.1	8.6	7.6	7.0	13.1	0	7.6	5.9	4.9	1.4	7.9	13.1	9.9	1.5	1.2	8.8
July.	14.3	7.2	6.5	14.1	14.6	14.2	13.5	6.7	13.2	9.9	9.9	8.7	11.1	13.9	12.9	12.9	8.3
August.	13.5	12.7	8.2	11.2	5.3	9.1	5.4	7.7	12.5	11.2	1.5	12.9	13.5	11.8	12.8	10.9	11.2
September.	0.3	12.8	11.2	10.0	2.5	5.6	4.8	5.2	11.2	11.0	10.6	7.3	8.0	2.6	4.3	9.8	1.7
October.	11.0	10.4	9.5	9.5	9.6	9.6	8.2	8.4	1.4	6.7	8.8	8.3	T	9.9	4.6	T	6.7
November.	1.9	5.3	5.6	0	7.8	5.2	6.4	6.9	0	3.4	6.4	3.3	0	5.9	4.2	0.2	T
December.	0.9	7.6	0.1	0	0.8	7.6	0	0.2	2.8	0.2	0	0.9	0	5.3	1.0	3.3	0.7

TOTAL AMOUNT OF SUNSHINE RECORDED ON EACH DAY—1916, (Continued).

Month.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Monthly Total	Monthly Per-centage.
January.	6.1	7.0	0	0.4	4.1	7.7	6.3	0.2	0.4	0	2.3	0	0	0	75.4	26
February.	5.3	7.5	0.1	7.7	0	0.3	2.8	0	3.5	0	10.4	3.7			90.9	30
March.	0.6	10.0	5.3	0	1.7	11.7	0.1	8.7	5.3	0	1.2	10.0	10.0	9.2	166.6	45
April.	11.8	7.0	5.4	1.7	2.7	0	0	2.7	6.5	10.7	12.7	12.8	5.6		175.5	44
May.	1.7	6.7	14.2	10.6	0	9.6	13.9	9.6	13.7	0.8	8.2	8.5	8.2	14.6	230.3	51
June.	3.8	2.2	1.7	4.5	14.9	3.5	1.5	4.6	12.9	9.7	11.	0.5	14.5		200.9	43
July.	8.2	8.8	10.7	4.8	13.7	13.6	13.0	10.8	10.1	8.5	11.1	11.3	0	9.8	326.3	70
August.	0.1	8.3	9.8	10.2	9.6	4.0	10.8	10.4	5.5	7.9	8.7	10.2	8.5	11.4	286.8	67
September.	4.3	4.3	10.2	2.6	8.2	4.4	2.2	10.7	1.1	6.7	1.9	4.4	11.1		191.0	51
October.	4.2	0	0	0.2	1.8	7.4	0	2.4	0.8	T	7.3	5.1	6.3	1.0	159.1	46
November.	2.3	7.4	1.9	8.2	5.3	0	6.3	3.6	0.5	4.4	0	0	1.6		104.0	36
December.	6.2	6.5	0	0	2.1	6.3	0	5.4	0.4	2.8	2.5	4.2	0.2	5.5	73.5	27

MONTHLY TABLES FOR EACH HOUR OF RECORDED SUNSHINE—1916

HOURS ENDING. Local time	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
January.	0	0	0	0	0	2.7	7.6	8.8	9.5	10.9	11.3	11.3	11.4	1.9	0	0	0
February.	0	0	0	0	3.6	9.2	10.8	9.1	8.4	10.2	10.3	11.5	8.6	6.5	2.7	0	0
March.	0	0	0	1.3	9.8	15.6	18.5	17.7	18.9	19.8	18.0	15.0	13.4	12.2	6.2	0.2	0
April.	0	0	0.5	6.2	10.4	12.6	13.8	17.5	18.1	18.2	17.0	17.3	14.9	13.2	11.2	4.6	0
May.	0	0	7.5	14.6	16.7	16.8	16.4	19.8	18.8	19.0	18.6	18.4	18.7	16.2	14.8	10.9	3.2
June.	0	0.4	6.3	10.1	14.6	14.7	13.1	14.7	16.9	17.0	16.3	15.7	14.3	15.1	14.1	11.5	6.1
July.	0	0.2	5.7	19.3	24.2	25.6	24.6	25.7	26.9	26.8	26.3	25.1	23.7	24.1	21.4	19.3	7.4
August.	0	0	1.2	15.0	19.9	21.6	22.7	25.7	26.0	26.5	24.6	25.7	23.3	21.9	21.3	10.8	0.6
September.	0	0	0	4.0	14.0	19.1	20.1	19.4	19.2	17.8	18.4	18.3	16.3	14.7	8.3	1.4	0
October.	0	0	0	0.5	8.1	14.4	17.1	19.6	18.2	17.7	16.7	17.2	15.9	12.1	1.6	0	0
November.	0	0	0	0	2.2	8.2	13.2	14.4	15.0	15.6	13.4	11.6	8.6	1.8	0	0	0
December.	0	0	0	0	0	4.1	9.2	11.4	9.7	10.5	10.2	10.9	7.3	0.2	0	0	0
Total hours.	0	0.6	21.2	71.0	123.5	164.6	187.1	203.8	205.6	210.0	201.1	198.0	176.4	139.9	101.6	58.7	17.3

SUMMARY OF SUNSHINE.

BRIGHT SUNSHINE RECORDED.

	1916			Mean from 1882 to 1910.		
	Number of days.	Number of hours	Percentage of sunshine.	Number of days.	Number of hours.	Percentage of sunshine.
January	20	75.4	26	20	77.9	27
February	22	90.9	30	22	108.1	37
March	26	166.6	45	25	150.0	40
April	26	175.5	44	25	190.7	47
May	28	230.3	51	29	218.9	48
June	29	200.9	43	29	260.0	56
July	30	326.3	70	30	282.2	60
August	31	286.8	67	30	252.7	60
September	30	191.0	51	28	207.8	55
October	28	159.1	46	28	149.3	44
November	24	104.0	36	22	85.3	29
December	24	73.5	27	20	65.2	24
Year	318	2080.3	46	308	2048.1	46

No of hours possible 4474.3.

EARTHQUAKE RECORDS BY MILNE SEISMOGRAPH.

P.T.—Preliminary Tremors. S.—Secondary Waves. L.W.—Large Waves. Time is Greenwich Civil Mean Time, and is given in hours, minutes, and decimals of minutes; 0 or 24h—Mid.

REGISTER FROM TORONTO, ONTARIO.

No.	Date 1916.	P.T. Commence		S. Commence		L.W. Commence		Max		End.		Max. Amplitude. M. M.	REMARKS.		
		H.	M.	H.	M.	H.	M.	H.	M.	H.	M.				
1542	Jan. 1	13	39.9	13	48.3?	13	57.4	14	32.8	Over 40.0	Very large disturbance. Small vibra's going on when paper was changed at 17h 25m. Med'm disturbance. Trailers merged into P. & S. phases. Thickening. Repeat 9h 26.2m to 9h 39.2m. May be two quakes.		
1543	" 11	13	55.7	13	58.0	12	25.8	12	30.0	12		43.6	0.3
1544	" 13	6	50.6	6	57.4	7	9.3	7	39.9	.....	.....	6.5	
1545	" 13	.....	.....	.....	.....	9	0.2	9	44.3	.....	.....	8.3
1546	" 13	.....	.....	.....	.....	10	31.0	10	36.3	.....	.....	8.0
1547	" 13	.....	.....	.....	.....	12	7.4	12	12.5	13	31.7	0.5
1548	" 13	.....	.....	.....	.....	23	2.2	23	8.9	23	17.8	0.2
1549	" 19	19	51.0	19	55.3	20	3.4	20	9.1	20	50.5	1.6			
1550	" 24	7	13.7?	7	17.9	7	23.5	7	46.7	9	39.3	1.8			
1551	" 26	.....	.....	.....	.....	8	0.0	8	17.7	8	45.0	0.2
1552	" 26	12	53.1?	8	11.0	13	00.0?	13	26.9	14	12.0?	1.3	
1553	" 30	13	21.8	21	31.8	21	42.6	22	12.1	0.3	
1554	" 31	at'n'd in.	18	20.2	18	31.6	18	44.1	20	2.9	0.7	Repeat 19h 33.8m to 19h 37.8m. Repeat 10h 28.7m to 10h 33.2m.		
1555	Feb. 1	.....	.....	8	2.9	8	9.9	8	44.2	10	33.2	1.7	
1556	" 6	8	16.2	11	13.2	11	37.4	11	46.4	0.2	
1557	" 6	22	1.0	22	11.2	22	23.5	22	34.8	0	24.5?	4.8	9,024 km.		
1558	" 8	.....	.....	.....	.....	22	25.1	.....	.....	.....	.....	.....
1559	" 10	15	52.6	16	3.3	16	15.6	16	18.6	16	498?	0.6	
1560	" 14	.....	.....	.....	.....	12	3.8	12	10.5	12	31.0	0.5
		.....	.....	.....	.....	10	42.8?	11	35.7	11	54.2	0.3
1561	Feb 15	11	45.8	11	50.3	11	53.7	12	1.0	13	15.2?	1.6	Fairly large disturbance.		
1562	" 20	at'g inst	.....	18	5.2	18	13.3	18	26.3	20	0.2	2.8		
1563	" 22	.....	.....	.....	.....	19	25.6	.....	.....	19	27.8	0.05
1564	" 22	.....	.....	.....	.....	21	1.5	21	6.1	21	18.5	0.4
1565	" 27	20	29.2	20	34.1	20	37.1	20	42.2	23	55.2	9.7			
1566	" 28	.....	.....	.....	.....	20	19.8	.....	.....	20	27.1	0.1
1567	Mar 1	.....	.....	.....	.....	19	52.5	19	55.2	20	3.4	0.2
1568	" 4	.....	.....	.....	.....	8	12.4	8	25.9	8	50.5	0.3
1569	" 12	7	44.5?	8	15.4	7	45.7	7	53.4	8		6.0	0.3
1570	" 16	7	50.3	23	0.7	23	3.0	23		9.6	0.3
1571	" 18	.....	.....	.....	.....	1	50.3?	.....	.....	1	56.4	0.1
1572	" 19	.....	.....	.....	.....	13	8.8	13	16.3	13	16.3	0.2
	" 26	13	14.3	Quake possibly lost owing to stopping of clock.		
1573	" 28	.....	.....	.....	.....	7	56.2	.....	.....	8	12.0	0.2
1574	" 29	.....	.....	19	9.1?	19	11.6	19	15.5	19	31.9?	0.2	
1575	" 31	.....	.....	.....	.....	11	28.7	11	31.4	11	58.6	0.9
1576	" 31	.....	.....	.....	.....	16	35.7	.....	.....	16	36.7	0.05
1577	" 31	.....	.....	.....	.....	16	55.2	.....	.....	16	58.2	0.1
1578	April 2	8	40.7	8	41.0	8	47.4	0.6	P. and S. not recorded. Reinforce at 11h 22.1m,		
1579	" 7	9	45.6	9	59.6	10	13.5	10	51.8	12	46.8?	1.3			
1580	" 7	.....	.....	.....	.....	15	56.9?	.....	.....	15	59.8	0.05
1581	" 11	3	56.8	3	58.9	0.2	At 20h 50m quake missed. Visitor		
1582	" 14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	" 14	.....	.....	.....	.....	22	6.0	.....	.....	22	43.9	0.2
1583	" 15	13	11.2?	22	42.8	Canary Islands.		
1584	" 16	.....	.....	.....	.....	13	51.3	14	5.6	14	50.3	0.5
		.....	.....	.....	.....	22	52.8	.....	.....	0	13.8	0.2
		.....	.....	.....	.....	22	54.3	.....	.....	.....	.....	.....

No.	Date 1916	P. T. Commence.	S. Commence.	L. W. Commence	Max.	End	Max. Amplitude.	REMARKS
1585	April 18	4 11.4	4 19.2	4 29.8	4 40.7	7 02.0	1.4	6,216 km.
1586	" 21	11 49.8	11 57.0	12 14.2	12 20.6	13 52.4	1.5	
1587	" 24	4 32.3	4 36.9	4 38.4	4 38.4	5 54.0	1.8	2,908 km.
1588	" 24	8 9.9	8 15.4	8 17.4	8 23.0	11 22.0	11.0	
				8 21.0				
1589	" 26	.....	2 33.2	2 35.6	2 41.2	4 43.0	11.0
1590	" 26	.....		6 39.8	6 46.2		0.8
				6 43.1				
1591	" 26	.....		7 30.4?	7 39.5	8 28.5	0.8
				7 33.3				
1592	May 3	.....		5 42.2		6 0.6	0.2
1593	" 9	.....		15 53.4		16 21.4	0.05
1594	" 10	21 44.5?	21 49.6	21 53.7	22 0.8	22 48.1	3.4	
1595	" 11	.....		10 21.6	10 22.4	10 52.4	1.6
				10 21.9				
1596	" 14	.....		0 32.0		0 46.0	0.05
				0 39.8				
1597	" 17	.....		13 22.4		13 41.2	0.1
				13 27.7				
1598	" 26	.....		21 13.5		21 18.5	0.2
1599	June 2	.....		0 11.7		A.C.	0.05
1600	" 2	.....		13 50.4?	14 12.3	A.C.	0.4
				14 10.0				
1601	" 3	.....		6 0.0?			0.05
1602	" 6	.....		13 53.0		14 2.5	0.05
1603	" 7	.....		13 47.2	13 55.4	A.C.	0.2
1604	" 15	.....		12 49.4	12 56.7	A.C.	0.3
1605	" 19	1 25.0?	1 32.7	1 38.4	1 44.0	A.C.	0.5	
1606	" 20	.....		7 28.9		7 52.4	0.05
1607	" 21	.....		21 51.9	21 52.5	A.C.	1.7

1608	June 24		7 15.8?		7 47.6	0.2	Abrupt movement at beginning.
				7 20.6		A.C.	1.2	
1609	" 25		18 30.5?	8 57.9			5883 km. Repeat 4h 52.2m. Doubtful as to being seismic.
				18 37.1				
1610	" 30	3 7.2	13 14.7	3 18.1	3 31.7	6 18.5	1.2	
1611	July 8	.....		9 1.4		A.C.	0.1
1612	" 22	.....		6 16.5			0.05
1613	" 28	17 50.9?	17 53.6	17 56.4	17 58.3	Lost.	1.1	
1614	Aug. 3	.....		1 47.7		A.C.	0.2
1615	" 3	.....		2 27.1	2 41.5	A.C.	0.8
1616	" 3	.....		9 14.7?		A.C.	
1617	" 3	.....		13 28.8?			0.3
				13 30.4				
1618	" 3	.....		14 4.8		A.C.	
1619	" 3	.....		22 6.3	22 8.1?	A.C.	
1620	" 6	.....		19 50.9		A.C.	
1621	" 16	.....		7 44.4		7 48.5	0.1
1622	" 18	.....		1 30.0		1 44.8	0.05
1623	" 25	.....		10 3.8	10 5.5	11 40.0	0.4
1624	" 25	.....		12 29.3		12 36.5	00.5
1625	" 26	.....		11 10.1	11 10.6	11 38.3	0.2
1626	" 27	.....		22 59.0		A.C.	0.2
				23 4.6				
1627	" 28	6 45.8	6 57.5?	7 26.9	7 43.9	10 21.9	1.5	
			7 5.6					
1628	" 30	.....		15 38.5		A.C.	0.05
1629	Sept. 3	.....		8 9.6	8 28.2	9 43.3	1.5
				8 16.7				
1630	" 3	.....		10 52.2		10 59.0	0.1
1631	" 5	.....		23 13.9	23 30.8	0 3.0	0.8
1632	" 6	.....		9 21.0?		9 35.4	0.05
1633	" 11	.....		6 59.2		8 27.9	0.2

No.	Date 1916	P.T. Commence.	S Commence.	L.W. Commence.	Max.	End.	Max. Amplitude.	REMARKS.
1634	Sept. 15	.....	7 25.7?	7 36.0 7 48.3	8 0.8	8 48.8	1.0	S. waves doubtful.
1635	" 21	.....		19 5.3			0.05	Time doubtful, no cut-off.
1636	" 23	5 48.7?	5 55.8	5 58.6 6 1.0	6 5.1	7 1.5	1.8	5040 km.?
1637	" 24	.....		18 0.0		18 5.0	0.05	
1638	" 28	.....		12 3.7		12 11.5	0.2	
1639	" 29	.....		19 21.4		19 50.0	0.1	
1640	Oct. 1	.....		2 10.5		2 14.7	0.1	
1641	" 3	1 36.8	1 45.1	1 52.5 1 56.7	2 3.3	A.C.	1.5	A. C. going on. Repeat 2h 42.3m. 6785 km.
1642	" 3	.....		5 1.3		A.C.		
1643	" 3	.....		14 1.8		A.C.	0.2	Doubtful as to being seismic.
1644	" 6	.....		16 28.8		A.C.	0.1	Doubtful as to being seismic.
1645	" 11	.....		10 48.4 11 4.9		A.C.	0.1	Doubtful as to being seismic.
1646	" 11	.....		18 24.6 18 28.0	19 5.8	A.C.	0.3	
1647	" 13	.....		1 14.3		A.C.		
1648	" 20	.....		17 33.3?	17 34.8	A.C.	0.2	
1649	" 21	.....		20 42.6		20 45.1	0.05	Minute thickening.
1650	" 21	.....		22 23.1?	22 54.4	A.C.	0.3	Phases doubtful.
1651	" 22	.....		22 40.1 8 29.0		8 36.5	0.1	Gradual thickening.
1652	" 31	15 52.3	16 1.3	16 11.0 16 18.6	16 24.4	18 54.2	2.8	7600 km. Phases well defined. P. and S. strongly marked.
1653	Nov. 3	.....		22 40.8		22 52.1	0.2	Gradual thickening.
1654	" 10	.....		9 29.1	9 29.5	9 39.0	0.3	P. and S. not recorded.
1655	" 11	.....		14 18.1	14 23.5	14 51.7	0.4	P. and S. not recorded.
1656	" 11	.....		16 3.0	16 11.5	16 56.8	0.3	P. and S. lost, changing paper

1657	" 11	.....		17 26.1		17 45.2	0.05	Doubtful as to being seismic
1658	" 13	.....		12 40.8	12 52.6	13 36.2	0.3	P. and S. not recorded.
1659	" 14	.....		23 15.1			0.05	Doubtful as to being seismic.
1660	" 18	.....		12 28.9		A.C.		
1661	" 21	6 35.7? 6 36.5	6 38.8	6 44.1	6 45.7	8 8.0	2.8	Real P. waves may not have been recorded.
1662	" 24	.....		0 13.1		A.C.		
1663	" 24	.....		12 43.3	12 51.5	A.C.	0.2	Thickenings, P. & S. not recorded
1664	" 30	3 24.2?	3 28.4	3 31.0	3 35.4	4 50.8	2.4	2,590 km. West Indies.
1665	Dec 2	.....		12 49.6 13 7.8	13 18.9	14 47.3	0.7	P. and S. masked by A. C. Distant quake.
1666	" 6	.....		22 47.5		A.C.		
1667	" 7	.....		12 19.7		A.C.	0.1?	
1668	" 14	17 4.7?	17 14.3?	17 20.7	17 35.0	Lost*	0.5	*Attending instrument. 8,325? km
1669	" 23	9 44.7	9 53.6	10 5.5	10 6.5	11 27.7	0.7	Repeat 10h 35.6m. 7,485 km.?
1670	" 26	.....		4 40.5	4 42.3	A.C.	0.2	
1671	" 26	.....		21 18.4	21 25.3	21 57.8?	0.3	Distant earthquake.
1672	" 27	.....		22 43.2 22 53.8	23 0.2	A.C.		

Period of boom 18 seconds. Pillar inclination 1 mm. = 0° 50'.

Monthly and Annual means of temperature of the air in each of the 45 years from 1872 to 1916, with the monthly and annual means for three groups of 10 years and one of 11 years.

YEAR	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	Mean Annual Temp	Difference from Average.
1872	22.4	20.7	19.9	40.5	51.9	63.7	70.2	69.5	59.1	45.5	32.9	18.7	42.92	-1.94
1873	17.7	21.5	26.6	38.6	51.9	63.7	68.4	66.6	57.3	45.7	27.5	29.8	42.94	-1.92
1874	24.8	22.8	28.7	34.2	52.5	62.5	67.9	67.1	63.3	47.5	34.6	25.7	44.30	-0.56
1875	16.1	10.2	24.1	36.3	52.3	60.9	66.6	65.2	55.5	43.2	31.7	27.2	40.77	-3.09
1876	29.0	23.8	26.0	38.2	51.5	65.5	68.8	70.2	57.5	42.8	37.3	17.2	43.98	-0.88
1877	17.5	28.8	25.6	43.3	53.9	62.4	69.9	69.2	61.2	49.8	37.5	34.2	46.10	+1.24
1878	24.4	26.9	37.1	48.7	53.0	62.7	72.0	68.4	61.1	49.4	36.6	24.5	47.09	+2.23
1879	20.3	17.9	29.1	39.9	54.4	61.8	68.7	65.4	56.1	54.8	35.4	26.2	44.16	-0.70
1880	32.7	27.4	28.9	41.3	58.0	65.4	67.6	66.9	60.2	45.0	30.3	21.4	45.43	+0.57
1881	16.7	19.9	30.1	39.8	58.1	59.6	70.7	69.9	67.8	49.9	37.5	34.3	46.20	+1.34
1882	23.2	30.3	31.7	40.0	48.9	61.6	66.8	67.4	61.2	51.8	35.9	26.1	45.42	+0.56
1883	17.5	20.1	21.9	38.3	49.3	62.1	65.7	63.7	55.0	45.4	37.9	26.6	41.95	-2.91
1884	16.0	23.2	28.0	40.9	51.2	65.0	64.3	65.5	62.2	49.0	34.1	25.9	43.79	-1.07
1885	18.0	11.1	18.4	37.7	51.7	60.6	68.3	63.5	57.0	45.8	38.6	28.2	41.57	-3.29
1886	19.2	19.0	30.2	44.9	53.2	60.9	66.8	65.7	58.9	48.5	35.6	21.5	43.71	-1.15
1887	18.1	21.7	24.8	39.3	58.5	63.8	73.1	66.2	56.4	44.2	35.1	28.4	44.14	-0.72
1888	15.0	21.9	22.4	38.9	50.6	64.4	66.2	66.0	56.5	43.4	37.4	29.7	42.70	-2.16
1889	28.0	17.7	32.9	43.5	54.0	59.7	68.8	65.0	60.0	42.7	38.6	34.3	45.44	+0.58
1890	29.7	27.8	27.6	42.3	50.0	65.3	67.3	64.5	57.5	48.3	37.0	23.0	45.02	+0.16
1891	24.1	28.0	28.8	43.2	51.5	64.3	63.7	65.6	62.5	47.9	37.0	33.6	45.87	+1.01
1892	20.5	25.2	27.6	41.0	51.3	65.0	68.1	67.4	60.1	47.7	35.3	26.0	44.61	-0.25
1893	14.7	19.2	29.2	39.2	51.9	66.4	68.2	65.7	57.0	48.9	37.3	24.4	43.53	-1.33
1894	28.5	20.7	36.0	44.4	52.6	66.4	69.1	65.3	62.2	50.1	34.4	31.2	46.75	+1.89
1895	21.6	16.8	24.5	43.3	55.4	67.9	66.2	65.1	60.6	43.3	36.7	29.8	44.28	-0.58
1896	22.2	22.6	23.6	45.8	59.8	64.7	68.7	67.5	57.4	44.8	39.4	27.8	45.36	+0.50
1897	23.1	25.0	31.6	42.8	52.5	61.3	72.1	64.7	60.8	50.9	37.9	28.3	45.93	+1.07
1898	25.4	24.6	36.3	43.4	55.0	65.4	70.5	69.7	62.8	50.3	36.0	26.2	47.15	+2.29
1899	22.5	19.3	28.0	44.7	55.1	65.3	68.8	69.4	56.8	50.4	40.6	28.9	45.80	+0.94
1900	26.2	20.6	23.6	45.2	54.9	65.2	68.5	71.6*	63.7	55.7	38.3	29.3	46.89	+2.03
1901	23.9	16.9	29.9	45.8	53.9	65.1	72.5	68.2	60.7	48.2	34.6	26.8	45.55	+0.69
1902	23.6	21.6	26.8	43.6	52.8	59.4	68.2	64.7	59.4	48.3	43.0	24.8	45.57	+0.71
1903	23.2	25.9	38.9	43.1	55.4	61.1	61.1	63.3	60.4	50.4	34.4	22.5	45.58	+0.72
1904	16.0	13.2	28.8	38.4	55.0	63.0	67.1	64.1	58.1	45.4	35.3	22.2	42.20	-2.66
1905	17.2	16.7	30.3	41.2	52.2	63.1	69.2	67.1	61.7	48.5	36.0	31.2	44.53	-0.33
1906	30.9	21.8	26.8	44.1	53.2	65.1	69.6	71.0	64.3	48.3	37.1	22.9	46.26	+1.40
1907	22.1	18.5	33.8	38.4	48.1	63.8	69.3	65.3	61.7	45.0	36.9	29.5	44.37	-0.49
1908	24.3	19.3	31.4	41.8	56.2	66.2	70.7	66.9	63.7	51.4	39.6	29.1	46.73	+1.87
1909	26.4	26.7	29.9	40.9	53.7	65.5	67.7	69.1	60.3	46.2	40.6	25.9	46.08	+1.22
1910	25.5	21.0	38.8	46.8	52.5	64.7	71.1	67.6	59.9	51.2	36.0	21.1	46.37	+1.51
1911	25.9	25.5	30.1	43.3	61.2	65.6	71.6	69.2	60.5	49.5	35.9	33.9	47.69	+2.83
1912	13.9	19.0	25.7	41.8	53.3	62.2	69.6	63.9	62.7	50.6	40.4	32.6	44.81	-0.05
1913	31.3	20.4	33.3	46.3	54.3	64.8	70.2	68.7	58.4	51.6	42.2	33.4	47.90	+3.04
1914	25.6	15.5	30.7	41.5	58.6	64.4	70.4	68.1	61.0	52.8	38.1	25.7	46.03	+1.17
1915	23.6	26.0	29.9	49.8	52.1	62.2	68.4	66.3	63.3	51.9	40.7	27.6	46.83	+1.97
1916	30.1	18.9	25.4	44.4	54.3	60.2	76.0	72.0	61.2	49.6	37.6	26.9	46.37	+1.51
MEANS														
1872-81	22.16	21.99	27.61	40.08	53.75	62.82	69.08	67.84	59.91	47.36	34.13	25.92	44.39	
1882-91	20.88	22.08	26.67	40.90	51.89	62.77	67.18	65.31	58.72	46.70	36.72	27.73	43.96	
1892-01	22.86	21.09	29.03	43.56	54.24	65.27	69.27	67.46	60.21	49.03	37.05	27.87	45.48	
1902-12	22.63	20.83	31.02	42.12	54.14	63.60	68.65	66.56	61.16	48.61	37.74	26.88	45.56	
1872-12	22.14	21.48	28.64	41.68	53.52	63.61	68.53	66.78	60.02	47.94	36.44	27.09	44.86	

*Mean from max. and min. 72.5.

MAGNETIC SUMMARY FOR 1916

Toronto (Agincourt) Observatory. Latitude 43° 47' N. Longitude 79° 16' W.

Mean values are from hourly measures of the photographic D, H and Z curves. H and Z are given in C. G. S. units.

1916	MEANS.						EXTREMES.							
	D. West		H.		Z		I		D West		H		Z	
	Mean	Daily range	Mean	Daily range	Mean	Daily range	Mean		Max.	Min.	Max.	Min.	Max.	Min.
January	6 31.9	7.8	.16004	.00029	.58574	.00008	74	43.1	6 54.2	5 56.3	.16098	.15865	.58724	.58519
February	32.2	8.1	.16009	34	.58575		6	42.8	6 44.7	6 19.6	.16049	.15961	.58593	.58526
March	33.0	10.4	.15989	46	.58572		25	43.9	7 36.2	5 54.8	.16175	.15567	.58770	.58374
April	32.9	13.2	.15999	51	.58559		23	43.1	7 13.6	5 57.6	.16332	.15554	.58785	.58335
May	32.9	12.7	.15998	52	.58537		25	42.9	7 03.5	5 52.5	.16109	.15814	.58670	.58356
June	32.3	13.8	.16002	51	.58532		18	42.6	6 47.1	5 53.2	.16159	.15913	.58622	.58435
July	33.1	13.1	.15989	54	.58520		24	43.1	7 00.4	6 06.3	.16282	.15785	.58709	.58306
August	33.7	14.8	.15978	61	.58510		27	43.6	8 24.3	5 05.8	.16330	.15442	.58749	.58085
September	34.1	12.2	.15971	50	.58523		30	44.1	7 08.9	5 54.7	.16068	.15859	.58647	.58381
October	34.4	9.1	.15967	47	.58523		28	44.4	7 28.2	5 39.2	.16186	.15664	.58750	.58336
November	34.8	8.4	.15967	36	.58513		17	44.2	6 55.3	6 06.1	.16081	.15884	.58647	.58445
December	34.9	5.9	.15972	29	.58518		9	44.0	6 57.2	6 10.4	.16015	.15886	.58553	.58451
Year	6 33.4	10.8	.15987	.00045	.58538	.00020	74	43.5						

The following table gives the dates on which the ice formed and left Toronto harbor for the past thirty years.
(This table has been kindly furnished by the Toronto Harbor Master.)

Winter	Frozen over	Clear of ice	No. of days
1886-87	December 4th	April 12th	128
1887-88	" 24th	" 11th	109
1888-89	" 20th	March 15th	85
1889-90	March 1st	" 15th	14
1890-91	January 4th	" 20th	75
1891-92	" 5th	" 31st	85
1892-93	December 22nd	April 7th	106
1893-94	" 30th	March 11th	70
1894-95	" 23rd	April 7th	105
1895-96	" 9th	March 28th	110
1896-97	" 22nd	" 11th	85
1897-98	" 24th	" 16th	82
1898-99	" 13th	April 8th	106
1899-00	" 28th	" 8th	101
1900-01	" 14th	" 6th	113
1901-02	" 6th	March 20th	104
1902-03	" 15th	" 15th	90
1903-04	" 14th	April 22nd	130
1904-05	" 11th	" 5th	115
1905-06	January 8th	" 1st	82
1906-07	December 8th	March 28th	110
1907-08	January 28th	" 29th	61
1908-09	" 7th	" 31st	83
1909-10	December 29th	" 20th	81
1910-11	" 10th	" 31st	111
1911-12	January 6th	April 16th	101
1912-13	" 9th	" 20th	71
1913-14	" 14th	" 2nd	79
1914-15	December 15th	" 2nd	108
1915-16	" 27th	" 3rd	98
Longest time frozen, 1881-82		Nov. 10th to Apr. 15th,	162 days.
Shortest " " 1889-90		March 1st to 15th.	14 "