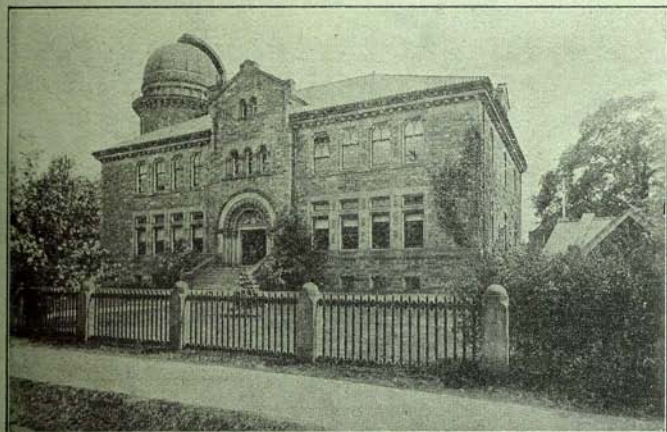


EXCHANGE  
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DOMINION OF CANADA.

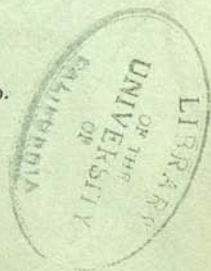
**TORONTO OBSERVATORY**



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Published under the direction of  
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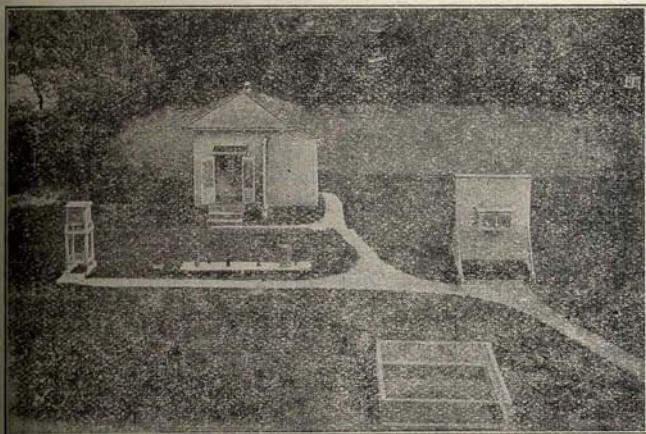
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## TORONTO OBSERVATORY.

Lat. 43° 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.

**BAROMETER**—Readings given are taken from the photographic barograph, and are the means of the 24-hour readings of each day. A correction has been employed to reduce the 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.

**TEMPERATURE**—Adopted means are taken from the maximum of the thermometers in the Stevenson Screen. 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.

On January 1st, 1890, the thermometers were removed from the old shed and placed in a shelter entirely clear of the building. This shed had a double back and roof with louvre sides. The height of the thermometers varied little from the old position. Observations were taken at the same hours but at 75th meridian time. The thermometers in January 1907 were placed in the Stevenson shed, and subsequent observations are from this shed.

**HUMIDITY**.—Means are taken from a Julien Friez Hygrometer and are from the 24 hour readings.

**WIND**—Direction and velocity are from the anemometer in the Eastern Gap on the Island, where the cups revolve at a height of 50 feet above the lake level.

**GALE**—A velocity of 30 miles and over.

**CLEAR DAY**—When the mean from six observations is below 0.2.

**CLOUDY DAY**—When the mean from six observations is above 0.8.

**AURORA**—Observations have been rendered doubtful by the large number of electric lights in the city.

Mean daily range from 24 hourly observations for September and October should read "Difference between warmest and coldest day."

## Weather Synopsis for 1921.

The warmest year on record, with mean 5.7° above normal. Except November, every month was much above normal, and particularly the first six. The combined mean temperatures of December, January and February, 29.3°, show it as the third warmest winter during the past 82 years; that of 1918-19 with mean of 29.6°, and that of 1889-90, with mean of 30.6°, being warmer, whilst the winter of 1881-82 equalled this year's record.

**JANUARY.** Mild, and bright sunshine 34 hours above normal. With the exception of the 12th and 13th, the first half of the month was quite mild; temperatures were frequently over 40°, and 45° was recorded on the 1st and 3rd, 48° on the 2nd and 46° on the 4th. The weather turned quite cold on the 17th, temperature falling below zero next morning. A marked rise set in on the morning of the 17th, continuing quite mild to the 24th, maximum readings of 51° and 48° being recorded on the 20th and 21st. Winter conditions prevailed from the 24th to the morning of the 27th, the minimum on the 25th being -1°. Temperatures were again above the freezing point on the 28th, 29th and 30th, but the 31st was much colder. Rainfall was one inch and snowfall 13 inches below normal. The ground was clear of snow at the end of the month. Gales were recorded on five days, but the monthly mileage was below normal.

**FEBRUARY.** Quite mild and generally cloudy, with an absence of any severe weather. A very mild period extended to the 16th, when a maximum of 53° was recorded, the second highest reading in any February. Temperature fell rapidly during this night. Milder again on the night of the 21st, followed by fairly cold weather 24th to 26th. During the last two days temperatures were generally above the freezing point. Gales were recorded on five days. Precipitation was considerably below normal. The ground was bare of snow on the 21st, but after a heavy inch fall on the 26th, about four inches remained at the end of the month.



**MARCH.** The second warmest on record. Temperature fell from 49° on the 2nd to 7° on the 4th. From the 5th to the 27th the weather was unusually mild; 61° and over was recorded on the 8th, 20th, 21st, 26th and 27th. Temperature fell rapidly on the 28th to a minimum of 20° during the night, and 21° the following day. The last two days were much warmer. An absence of gales was particularly noticeable, total wind mileage being below normal. There were many rainy days, total fall being half an inch above normal. Snowfall was 10.5 inches below. Bright sunshine was in defect 35 hours, due to much cloudiness. Frost was out of the ground by the 19th. Soft maple in bloom on the 18th. Robins, Bluebirds, Meadow Larks were noticed on the 9th.

**APRIL.** Mean temperature considerably above normal. The minimum fell to 26° on the 1st, after which warm weather extended to the 9th—75° was recorded on the 5th and 72° on the 6th. Strong north and northeast winds, which set in during the night of the 9th, gave much cooler weather, but it became warmer again on the 11th, continuing to the 15th when 64° was recorded. A decided change occurred on the morning of the 16th, with strong north and northeast winds, and rain turning to sleet. Buds on trees and shrubs became encased in ice. Temperature fell to 27° on the 17th. The next day was much warmer, and the mean from the 19th to the end of the month ranged from 1° to 15° above normal: 73° was recorded on the 27th. During the last three days there was a tendency to cooler weather. Rainfall was considerably above normal and snowfall slightly so. On the 17th the ground was covered with about two inches of snow, but quickly disappeared. After the 6th we had rain every few days, 1.16 inches was recorded on the 29th. Prevailing wind was east, with gales on two days.

**MAY.** Warm, and although sunshine was 26 hours greater than normal there were many dull, cloudy days. Temperatures over 70 were recorded on 11 days and 80° on six days. The warmest portions of the month were from the 20th to the 22nd, and during the last four days. Unusually high readings of 87° on the 20th and 21st, and 84° on the 29th and 31st were noted. The range of temperature on the 20th and 21st was 40° and 31° respectively. The coolest days were the 1st, 2nd and 12th, and ground frosts were noted on the 16th and 17th. Rainfall

although frequent after the 11th, was one inch below normal. A particularly severe and prolonged thunderstorm occurred on the morning of the 28th. Aurora was observed on the 13th, 15th and 16th, the display on the 13th being brilliant Class I. arch and streamers, waves moving east to south. Apple trees were in bloom on the 8th, lilac on the 10th and other trees in full leaf on the 31st.

**JUNE.** Very warm with bright sunshine 59 hours above normal. Mean temperature fluctuated considerably during the first week, but from the 7th to the end of the month it was above normal; over 80° was recorded on 18 days and 88° on five days. The last eleven days were decidedly warm. The minimum readings were however fairly low, except on the 23rd and the last three days, when the readings were about 68°. Vapour tension during the hot spell averaged about 0.75 inch, which made the heat less bearable; 0.84 inch of rain fell on the 3rd and then none fell until the 11th. A dry interval from the 17th to the 22nd was followed by rain almost every day to the end of the month. Thunderstorms contributed chiefly to the total, which was half an inch below normal. During the thunderstorm of the 29th temperature fell from 85° to 71° in a short time, and then rose a similar amount. Aurora Class IV. was observed on the 3rd.

**JULY.** The warmest on record with bright sunshine 15 hours above the normal and unusually high vapour tension readings, which at times exceeded 0.85 inch and made the tropical heat very trying. Every day, except the 31st, showed a mean temperature considerably above normal. The first half of the month was the warmest, particularly the first week. On 21 days readings of 85° and over were recorded, and 90° and over on 11 days. The principal maximums were 98.4° on the 5th and 97° on the 4th and 6th. During a severe thunderstorm on the 8th temperature fell from 92° to 71° in about an hour. This afforded only temporary relief for the next day it rose to 88° with vapour tension readings of 0.85 inch. On 11 days the minimum temperatures never fell below 70° nor below 75° on the 7th. It may be noted that the mean minimum for the month was about up to the normal temperature for July. Thunderstorms were numerous. The one on the 8th was accompanied by a fierce southwest squall. Hail fell during the one on the 26th. Rainfall



was below normal, and none fell during the parching weather the first week. After this there were thunder showers at intervals with dry periods from two to five days.

**AUGUST.** The mean temperature during the first 20 days varied but little from normal. Temperature fell to 59°, 47° and 49° on the 21st, 22nd and 23rd. Day temperatures during the week ranged from 80° to a maximum of 91° on the 30th, vapour tension readings as high as 0.88 inch on the latter. Minimum temperatures during the month were fairly low. Frequent rain from the 6th to the 17th was followed by a period to the end of the month, with the exception of an inch on the 29th. The total monthly fall was 0.8 inches below normal, the largest quantities falling during thunderstorms on four days.

**SEPTEMBER.** Another very warm month. Every day except one showed a mean temperature averaging 9° above normal. On 14 days readings of 80° and over were recorded, six days 85° was exceeded; 92° was recorded on the 2nd and on the 10th. Night temperatures were however about normal except from the 2nd to the 5th and 11th, 12th, when readings were never below 64°. The weather became much cooler on the night of the 18th, the temperature falling to 45° next morning. On the 26th and 27th it fell to 44° and 43° and heavy dew was noted. Rainfall was 1.9 inch below normal, and the falls were fairly well distributed. A 40 mile west wind was recorded on the 30th, following a fairly low barometer reading. Bright sunshine was slightly above normal. Aurora Class III. was observed on the 28th, a well defined arch and streamers being visible from 8.30 to 9.30 p.m., and a band from east to west almost to the zenith. These gradually faded until at midnight the arch was visible.

**OCTOBER.** Mean temperature 4° above normal. Maximums of 72° and 69° were recorded on the 1st and 6th, cooler 7th to 13th, when temperature fell to 32.8° on the 14th. From the 14th to the end of the month the mean temperature was generally well above normal. Maximums of 67° were recorded on the 18th and 22nd, and 56° and over during the four days of the month. Minimums fell to 36° on the 23rd and 37° on the 25th, 26th and 27th. It rained almost daily to the 12th, followed by dry periods lasting five to six

Total fall was 1.5 inches above normal. Bright sunshine was somewhat below normal. Trees and shrubs lost their leaves very early, and some migratory birds remained quite late.

**NOVEMBER.** Cold weather prevailed from the 2nd to the 13th, and again on the 23rd and 24th, with minimums of 23° on the 8th, 22° on the 13th, 21° on the 23rd and 23° on the 24th. Mild from the 14th to the 22nd with maximum readings of 59° and 62° on the 15th and 19th. Marked temperature fluctuations were noted from the 23rd to the 28th, after which mild weather set in, continuing to the end of the month. There were many cloudy days and bright sunshine was 42 hours in defect. During the last five days we had practically no sunshine. Rainfall was considerably below normal, whilst the snowfall was three inches above. With the exception of 5.6 inches on the 9th, the falls were generally light. Heaviest gale 40 miles east on the 23rd.

**DECEMBER.** Cloudy and mild. Temperature exceeded 40° on seven days, and readings of 46° and 52° were recorded on the 1st, 2nd, and 47° and 49° on the 17th and 18th. It was fairly cold from the 13th to the 15th. Temperature fell rapidly on the morning of the 18th, with a heavy southwest gale attended by rain and light snow, the fall became more marked on the morning of the 21st, zero readings being noted on the morning of the 22nd. Alternate warm and cold weather followed to the night of the 30th, when there was a general rise of temperature above freezing point. The gale on the 18th attained a maximum velocity of 55 miles between 6 and 7 hours, and some gusts showed a velocity of 72 miles per hour. Light snowfalls were frequent throughout the month. The total was six inches below normal, and the rainfall slightly above. An all day rain on the 17th gave 0.90 inches. Sleighing was possible for two or three days, but the depth of snow on the ground on the 31st was only half an inch.

J. Y.



## Meteorological Report.

### January

Results of Observations.		1921	Mean for 70 years
BAROMETER	— Mean reading, 32 F. inches	29.729	29.64
"	Highest on 18th at 10.52h	30.606	30.27
"	Lowest on 16th at 17.45h	29.053	28.01
"	Range	1.553	1.33
TEMPERATURE	— Highest (20th)	53.0	44
"	Lowest (18th)	-5.0	-6
"	Range for the month	58.0	51
"	Mean of the highest readings	35.4	20
"	Mean of the lowest readings	20.2	15
"	Mean daily range	15.2	13
"	Mean from max. and min.	27.8	*21
"	Mean from 24 hourly observations	27.1	22
"	Warmest day (mean of 24 hrs) (21st)	40.4	
"	Coldest day (mean of 24 hrs) (18th)	1.2	
"	Range between warmest and coldest	39.2	
"	Highest solar (black bulb in vacuum (8th)	90.4	
"	Lowest radiation (18th)	-9.2	
"	Monthly range	99.6	
HUMIDITY	— Mean	76	
RAINFALL	— Total fall (inches)	0.27	1
"	Heaviest fall (21st)	0.09	
"	No. of days on which rain fell	6	
SNOWFALL	— Total fall (inches)	4.0	11
"	Heaviest fall (16th)	3.0	
"	No. of days on which snow fell	6	14
CLOUD	— Mean amount of (0-10)	.60	
	*1840—1898	†1881—1908	

## Results of Observations—January (Continued)

WINDS	Mean velocity	12.5 miles
"	Highest velocity, 16th, at 22hrs. from west	41 "
"	Highest daily average velocity (16th)	22.6 "
"	Lowest " " (22nd)	4.3 "
"	Days on which gales occurred	2

No. of hours in the month in which the wind was	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	C.	Totals.
	169	6	70	11	138	70	245	30	5	744

No. of miles registered from each direction.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	C.	Totals.
	1776	75	806	98	1519	1095	3438	510	—	9317

Rain on 1st, 5th, 14th, 19th, 20th and 21st. Snow on the 8th, 15th, 16th, 17th, 19th and 23rd. Fog on the 1st, 5th, 11th, 21st and 22nd. Clear days 4. Cloudy days 11.

### Extreme Readings

DURING 82 YEARS.

Barometer	— Highest reading, 1866 (8th)	30.940	inch
"	Lowest reading, 1870 (2nd)	28.166	"
Temperature	— Highest, 1874 (4th); 1876 (1st)	57.5°	
"	Lowest, 1859 (10th)	-26.5°	
"	Highest daily mean (during 41 yrs) 1906 (22nd)	49.6°	
"	Lowest daily mean, (during 41 yrs) 1914 (13th),	-15.2°	
"	Highest monthly mean, 1880	32.7°	
"	Lowest monthly mean, 1857	12.8°	
Rainfall	— Greatest fall, 1843	4.30	in.
"	Least fall, 1852-56-1918-1920	0	"
"	Greatest fall for 24 hours, 1843 (31st)	2.50	"
"	Greatest number of days rain fell, 1890	14	
Snowfall	— Greatest fall, 1871	43.6	in.
"	Least fall, 1916	3.1	"
"	Greatest for 24 hours, 1873 (5th)	15.3	"
"	Greatest No. days snow fell 1861-71-93	23	
"	Least No. days snow fell, 1847	5	



February

Results of Observations.		1921	Mean for 70 years.	
BAROMETER	— Mean reading, 32 F. inches	29.660	29.638	
	“ Highest on 18th at 10.00h	30.153	30.226	
	“ Lowest on 23rd at 7.19h	29.092	28.945	
	“ Range	1.061	1.281	
TEMPERATURE	— Highest (16th)	53.4	44.3	
	“ Lowest (24th)	7.2	-7.1	
	“ Range for the month	46.2	51.4	
	“ Mean of the highest readings	35.4	29.2	
	“ Mean of the lowest readings	21.7	14.1	
	“ Mean daily range	13.7	15.1	
	“ Mean from max. and min.	28.5	*22.5	
	“ Mean from 24 hourly observations	28.0	†21.0	
	“ Warmest day (mean of 24 hrs) (16th)	41.4		
	“ Coldest day (mean of 24 hrs) (24th)	13.5		
HUMIDITY	— Mean	79	81	
	RAINFALL	— Total fall (inches)	0.18	0.93
		“ Heaviest fall (4th) “	0.10	
		“ No. of days on which rain fell	3	4.7
SNOWFALL	— Total fall inches	11.6	16.5	
	“ Heaviest fall (26th) “	5.2		
	“ No. of days on which snow fell	7	12.4	
CLOUD	— Mean amount of (0-10)	.66	.70	
	†1840—1898	†1881—1908		

Results of Observations—February (Continued)

WINDS	— Mean velocity	13.5 miles
“	Highest velocity, 17th, at 5hrs. from west	39 “
“	Highest daily average velocity (26th)	25.0 “
“	Lowest “ “ “ (23th)	5.5 “
“	Days on which gales occurred	5

No. of hours in the month in which the wind was	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	C.	Totals.
	165	36	108	1	90	43	204	23	2	672

No. of miles registered from each direction.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	C.	Totals.
	1753	686	1758	16	1070	593	2881	302	—	9059

Rain on 4th, 9th and 23rd. Snow on the 2nd, 3rd, 4th, 7th, 9th, 11th, 23rd and 26th. Fog on the 4th, 5th, 9th, 10th, 22nd and 28th. Lunar halo on the 19th and 21st. Solar halo on the 21st. Clear days 3. Cloudy days 10.

Extreme Readings

DURING 82 YEARS.

Barometer	— Highest reading, 1887 (4th)	30.522	inch
	“ Lowest reading, 1918 (25th)	28.346	“
Temperature	— Highest, 1890 (4th)	53.8°	
	“ Lowest, 1855 (5th)	-25.4°	
“	— Highest daily mean (during 41 yrs) 1906 (24th)	44.1°	
	“ Lowest daily mean, (during 41 yrs) 1895 (6th),	-11.9°	
“	— Highest monthly mean, 1882	30.3°	
	“ Lowest monthly mean, 1875	10.2°	
Rainfall	— Greatest fall, 1842	3.63	in.
	“ Least fall, 1841-46-56-73-77-1901-16	0	“
	“ Greatest fall for 24 hours, 1855 (13th)	1.71	“
“	Greatest number of days rain fell, 1857	11	
Snowfall	— Greatest fall, 1846	46.1	in.
	“ Least fall, 1851	2.4	“
	“ Greatest for 24 hours, 1863 (5th)	16.0	“
	“ Greatest No. days snow fell 1843	21	
“	Least No. days snow fell, 1851	4	



March

Results of Observations.		1921	Mean for 70 years
<b>BAROMETER</b>	— Mean reading, 32 F. inches	29.684	29.600
	— Highest on 22nd at 12.02h	30.330	30.129
	— Lowest on 24th at 23.57h	29.056	28.910
	— Range	1.274	1.210
<b>TEMPERATURE</b>	— Highest (26th)	70.0	52.1
	— Lowest (4th)	7.0	-2.0
	— Range for the month	63.0	54.1
	— Mean of the highest readings	47.0	36.3
	— Mean of the lowest readings	30.1	21.9
	— Mean daily range	16.9	14.4
	— Mean from max. and min.	38.5	*23.7
	— Mean from 24 hourly observations	37.5	*28.1
	— Warmest day (mean of 24 hrs) (26th)	53.8	
	— Coldest day (mean of 24 hrs) (4th)	15.9	
	— Range between warmest and coldest	37.9	
	— Highest solar (black bulb in vacuum (25th)	110.2	
	— Lowest radiation (4th)	5.0	
	— Monthly range	105.2	
<b>HUMIDITY</b>	— Mean	77	
<b>RAINFALL</b>	— Total fall (inches)	2.00	1.3
	— Heaviest fall (9th)	0.30	
	— No. of days on which rain fell	17	6.1
<b>SNOWFALL</b>	— Total fall (inches)	1.0	11.4
	— Heaviest fall (28th)	0.6	
	— No. of days on which snow fell	3	10.1
<b>CLOUD</b>	— Mean amount of (0-10)	.72	
	*1840—1898	‡1881—1908	

Results of Observations—March (Continued)

<b>WINDS</b>	— Mean velocity	12.5 miles
	— Highest velocity, 6th, 21st, 28th at 5, 13 and 17 hrs. from southwest and west	29 "
	— Highest daily average velocity (21st)	23.0 "
	— Lowest " " " (11th)	5.1 "
	— Days on which gales occurred	0

No. of hours in the month in which the wind was	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	C.	Totals
	90	19	251	7	154	28	153	41	1	744
No. of miles registered from each direction.	943	252	2858	30	1659	361	2476	708	—	9287

Rain on 2nd, 5th, 6th, 8th, 9th, 12th, 14th, 15th, 17th, 19th, 20th, 21st, 24th, 26th, 27th, 28th and 31st. Snow on 7th, 9th and 28th. Fog on the 1st, 2nd, 5th, 6th, 8th, 11th, 12th and 20th. Thunderstorms on the 15th, 19th and 26th. Lunar halo on the 16th and 23rd. Hail on the 19th. Clear days 2. Cloudy days 15.

Extreme Readings

DURING 82 YEARS.

<b>Barometer</b>	— Highest reading, 1906 (24th)	30.508	inch
	— Lowest reading, 1859 (19th)	28.286	"
<b>Temperature</b>	— Highest, 1910 (28th)	75.2°	
	— Lowest, 1868 (3rd)	-15.6°	
	— Highest daily mean (during 41 yrs) 1910 (30th)	58.1°	
	— Lowest daily mean, (during 41 yrs) 1885 (17th),	-0.4°	
	— Highest monthly mean, 1903	38.9°	
	— Lowest monthly mean, 1885	18.5°	
<b>Rainfall</b>	— Greatest fall, 1859	4.05	in.
	— Least fall, 1856, 1889	0	"
	— Greatest fall for 24 hours, 1881 (19th)	1.72	"
	— Greatest number of days rain fell, 1878, 1921	17	
	— Least number days rain fell, 1856-89	0	
<b>Snowfall</b>	— Greatest fall, 1870	62.4	in.
	— Least fall, 1858, 1903	0.2	"
	— Greatest for 24 hours, 1876 (28th)	16.2	"
	— Greatest No. days snow fell 1877	21	
	— Least No. days snow fell, 1895-1898	1	



April

Results of Observations.		1921	Mean for 70 years
BAROMETER	— Mean reading, 32 F. inches	29.632	29.600
	“ Highest on 11th at 9.00h	29.978	30.073
	“ Lowest on 23rd at 5.17h	29.038	29.040
	“ Range	0.940	1.033
TEMPERATURE	— Highest (5th)	75.2	68.3
	“ Lowest (1st and 10th)	25.8	18.6
	“ Range for the month	49.4	48.7
	“ Mean of the highest readings	58.3	49.6
	“ Mean of the lowest readings	40.3	33.3
	“ Mean daily range	18.0	18.3
	“ Mean from max. and min.	49.3	41.1
	“ Mean from 24 hourly observations	48.4	42.1
	“ Warmest day (mean of 24 hrs) (27th)	59.8	
	“ Coldest day (mean of 24 hrs) (10th)	29.8	
	“ Range between warmest and coldest	30.0	
“ Highest solar (black bulb in vacuum) (27th)	125.3		
“ Lowest radiation (1st)	22.8		
“ Monthly range	102.5		
HUMIDITY	— Mean	75	
RAINFALL	— Total fall (inches)	4.53	
	“ Heaviest fall (29th) “	1.16	
	“ No. of days on which rain fell	12	
SNOWFALL	— Total fall inches	3.6	
	“ Heaviest fall (17th) “	3.6	
	“ No. of days on which snow fell	1	
CLOUD	— Mean amount of (0-10)	.53	
	*1840—1898 †1881—1908		

Results of Observations—April (Continued)

WINDS	— Mean velocity	12.0 miles
“	Highest velocity, 22nd at midnight from east.	36 “
“	Highest daily average velocity (22nd)	23.2 “
“	Lowest “ “ “ (5th)	4.4 “
“	Days on which gales occurred	2

No. of hours in the month in which the wind was	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	C.	Totals.
	133	40	224	5	129	18	124	42	5	720

No. of miles registered from each direction.	1517	583	2983	32	1299	216	1293	719	—	8647
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Rain on 7th, 8th, 14th, 15th, 16th, 20th, 21st, 22nd, 23rd, 28th, 29th and 30th. Snow on 17th. Thunderstorms on the 8th, 20th and 21st. Fog on the 8th, 21st and 23rd. Dew on the 13th and 28th. Clear days 6. Cloudy days 10.

Extreme Readings

DURING 82 YEARS.

Barometer	— Highest reading, 1897 (20th)	30.308	inch
“	Lowest reading, 1863 (2nd), 1887 (28th)	28.704	“
Temperature	— Highest, 1842 (22nd)	89.8°	
“	Lowest, 1857 (2nd)	5.9°	
“	Highest daily mean (during 41 yrs) 1915 (25th)	70.4°	
“	Lowest daily mean, (during 41 yrs) 1919 (1st),	19.6°	
“	Highest monthly mean, 1921	49.3°	
“	Lowest monthly mean, 1874	34.2°	
Rainfall	— Greatest fall, 1910	4.90	in.
“	Least fall, 1881	0.08	“
“	Greatest fall for 24 hours, 1850 (3rd)	2.35	“
“	Greatest number of days rain fell, 1871	17	
“	Least number days rain fell, 1841-81	3	
Snowfall	— Greatest fall, 1857	12.9	in.
“	Least fall, 1843-56-58; 70-87-88-90-91	0.1	“
“	Greatest for 24 hours, 1901 (20th)	8.3	“
“	Greatest No. days snow fell 1857	11	
“	Least No. days snow fell, 1878-95-1900	0	



May

Results of Observations.		1921	Mean for 70 years.
BAROMETER	— Mean reading, 32 F. inches	29.639	29.577
"	Highest on 19th at 11.18h	29.935	29.907
"	Lowest on 13th at 17.27h	29.379	29.153
"	Range	0.556	0.814
TEMPERATURE	— Highest (21st)	87.0	77.9
"	Lowest (17th)	33.4	30.9
"	Range for the month	53.6	47.0
"	Mean of the highest readings	68.0	62.0
"	Mean of the lowest readings	48.1	43.3
"	Mean daily range	19.9	18.7
"	Mean from max. and min.	58.1	*52.4
"	Mean from 24 hourly observations	57.7	±53.4
"	Warmest day (mean of 24 hrs) (21st)	71.4	
"	Coldest day (mean of 24 hrs) (1st)	44.1	
"	Range between warmest and coldest	27.3	
"	Mean of dew point	47	
"	Highest solar (black bulb in vacuum) (31st)	141.2	
"	Lowest radiation (17th)	28.0	
"	Monthly range	113.2	
HUMIDITY	— Mean	71	70
FORCE OF VAPOUR	— Mean	0.309	0.280
RAINFALL	— Total fall (inches)	1.88	2.07
"	Heaviest fall (22nd)	0.60	
"	No. of days on which rain fell	11	12.4
SNOWFALL	— Total fall (inches)	0	0.1
"	No. of days on which snow fell	0	0.3
CLOUD	— Mean amount of (0-10)	.47	.57
	*1840—1898	‡1881—1908	

Results of Observations—May (Continued)

WINDS — Mean velocity												10.4 miles	
"	Highest velocity, 11th at 13 hrs from east.											32 "	
"	Highest daily average velocity (11th)											22.5 "	
"	Lowest " " (20th)											3.4 "	
"	Days on which gales occurred											1	
No. of hours in the month in which the wind was	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	C.	Totals.			
	167	28	260	4	100	25	122	29	9	744			
No. of miles registered from each direction.	1754	327	3188	17	826	194	947	478	—	7731			
	Rain on 1st, 6th, 12th, 13th, 17th, 22nd, 23rd, 25th, 28th, 29th and 31st. Thunderstorms on the 6th, 13th, 22nd, 28th, 29th and 31st. Aurora Class I. on the 13th; Class III. on the 16th; Class IV, on 15th. Hoar frost on 16th and 17th. Heavy dew on 19th and 31st. Clear days 5. Cloudy days 6.												
<b>Extreme Readings</b>													
DURING 82 YEARS.													
Barometer	— Highest reading, 1849 (2nd)											30.241	inch
"	Lowest reading, 1861 (6th)											28.644	"
Temperature	— Highest, 1895 (30th)											93.4°	
"	Lowest, 1867 (3rd)											24.6°	
"	Highest daily mean (during 41 yrs) 1895 (30th)											80.9°	
"	Lowest daily mean, (during 41 yrs) 1911 (2nd),											34.1°	
"	Highest monthly mean, 1911											61.3°	
"	Lowest monthly mean, 1867											46.6°	
Rainfall	— Greatest fall, 1894											9.37	in.
"	Least fall, 1920											0.39	"
"	Greatest fall for 24 hours, 1894 21st)											2.70	"
"	Greatest number of days rain fell, 1890											23	
"	Least number days rain fell, 1920											4	
Snowfall	— Greatest fall, 1875											3.1	in.
"	Least fall, 1910 and 1913 to 1921											0	"
"	Greatest for 24 hours, 1875 (1st)											3.0	"
"	Greatest No. days snow fell 1905											5	



June

Results of Observations.		1921	Mean for 70 years.
BAROMETER	— Mean reading, 32 F. inches	29.609	29.572
"	— Highest on 5th at 9.25h	30.011	29.909
"	— Lowest on 13th at 5.17h	29.314	29.165
"	— Range	0.697	0.744
TEMPERATURE	— Highest (23rd)	90.5	86.4
"	— Lowest (6th)	45.0	40.1
"	— Range for the month	45.5	46.3
"	— Mean of the highest readings	79.9	72.4
"	— Mean of the lowest readings	57.1	52.9
"	— Mean daily range	22.8	19.5
"	— Mean from max. and min.	68.5	*62.4
"	— Mean from 24 hourly observations	67.9	±64.0
"	— Warmest day (mean of 24 hrs) (23rd)	78.8	
"	— Coldest day (mean of 24 hrs) (4th)	55.4	
"	— Range between warmest and coldest	23.4	
"	— Mean of dew point	53	
"	— Highest solar (black bulb in vacuum) (23rd)	146.2	
"	— Lowest radiation (6th)	41.0	
"	— Monthly range	105.2	
HUMIDITY	— Mean	66	73
FORCE OF VAPOUR	— Mean	0.456	0.418
RAINFALL	— Total fall (inches)	2.15	2.76
"	— Heaviest fall (3rd)	0.84	
"	— No. of days on which rain fell	7	11.7
CLOUD	— Mean amount of (0-10)	.33	.53
	*1840—1898	±1881—1908	

Results of Observations—June (Continued)

WINDS	Mean velocity	8.0 miles
"	Highest velocity, noon on 13th from west.	31 "
"	Highest daily average velocity (13th)	19.4 "
"	Lowest " " (6th)	3.6 "
"	Days on which gales occurred	0

No. of hours in the month in which the wind was	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	C.	Totals.
	168	31	164	9	142	30	136	25	15	720

No. of miles registered from each direction.	1338	340	1148	40	1018	230	1312	367	—	5793
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Rain on 3rd, 11th, 13th, 17th, 23rd, 28th, 29th. Thunderstorms on 3rd, 10th, 13th, 23rd, 26th and 29th. Fog on the 3rd. Aurora Class IV. on the 3rd, Heavy dew on 8th, Clear days 10. Cloudy days 2.

Extreme Readings

DURING 82 YEARS.

Barometer	— Highest reading, 1913 (10th)	30.160	inch
"	— Lowest reading, 1902 (25th)	28.875	"
Temperature	— Highest, 1901 (27th)	97.1°	
"	— Lowest, 1842 (10th)	28.1°	
"	— Highest daily mean (during 41 yrs) 1901 (27th)	82.0°	
"	— Lowest daily mean, (during 41 yrs) 1910 (5th),	44.8°	
"	— Highest monthly mean, 1919	72.4°	
"	— Lowest monthly mean, 1842	56.5°	
Rainfall	— Greatest fall, 1870	8.09	in.
"	— Least fall, 1864	0.57	"
"	— Greatest fall for 24 hours, 1892 (19th)	2.42	"
"	— Greatest number of days rain fell, 1869	22	
"	— Least number days rain fell, 1864	5	
Snowfall	— Flurries on two days (1859)		



July

Results of Observations.		1921	Mean for 70 years.
<b>BAROMETER</b> —	Mean reading, 32 F. inches	29.597	29.585
“	Highest on 22nd at 8.00h	29.809	29.889
“	Lowest on 31st at 1.00h	29.283	29.420
“	Range	0.526	0.469
<b>TEMPERATURE</b> —	Highest (5th)	98.4	89.8
“	Lowest (22nd)	58.8	47.5
“	Range for the month	39.6	42.3
“	Mean of the highest readings	88.1	77.9
“	Mean of the lowest readings	67.6	58.2
“	Mean daily range	20.5	10.7
“	Mean from max. and min.	77.9	*67.8
“	Mean from 24 hourly observations	76.7	†68.9
“	Warmest day (mean of 24hrs) (6th)	85.4	
“	Coldest day (mean of 24hrs) (31st)	65.1	
“	Range between warmest and coldest	20.3	
“	Mean of dew point	66	
“	Highest solar (black bulb in vacuum) (8th)	143.5	
“	Lowest radiation (22nd)	55.0	
“	Monthly range	88.5	
<b>HUMIDITY</b> —	Mean	75	72
<b>FORCE OF VAPOUR</b> —	Mean	0.611	0.488
<b>RAINFALL</b> —	Total fall (inches)	2.65	3.04
“	Heaviest fall (18th)	0.82	
“	No. of days on which rain fell	10	11.2
<b>CLOUD</b> —	Mean amount of (0-10)	.41	.49
	*1840—1898		†1881—1908

Results of Observations—July (Continued)

WINDS	Mean velocity	7.5 miles								
“	Highest velocity at noon on 31st from northwest.	28	“							
“	Highest daily average velocity (31st)	15.7	“							
“	Lowest “ “ (3rd)	3.5	“							
“	Days on which gales occurred	0								
No. of hours in the month in which the wind was	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	C.	Totals.
	155	13	83	7	271	22	151	29	13	744
No. of miles registered from each direction.	1140	137	595	44	2062	160	1072	397	—	5607

Rain on 8th, 9th, 14th, 16th, 18th, 19th, 25th, 26th, 27th, and 30th. Thunderstorm on 8th, 9th, 14th, 16th, 18th, 19th, 25th, 26th, 27th, and 30th. Hail on 26th. Heavy dew on 11th, 23rd, 25th, and 26th. Clear days 9. Cloudy days 2.

### Extreme Readings

DURING 82 YEARS.

Barometer —	Highest reading, 1892 (7th)	30.192	inch
“	Lowest reading, 1911 (24th)	29.006	“
Temperature —	Highest, 1911 (3rd)	103.2°	
“	Lowest, 1843 (12th)	38.7°	
“	Highest daily mean (during 41 yrs) 1911 (3rd)	91.3°	
“	Lowest daily mean, (during 41 yrs) 1891 (7th),	56.4°	
“	Highest monthly mean, 1921	77.9°	
“	Lowest monthly mean, 1884	64.0°	
Rainfall —	Greatest fall, 1841	8.15	in.
“	Least fall, 1916	0.36	“
“	Greatest fall for 24 hours, 1897 (27th)	3.88	“
“	Greatest number of days rain fell, 1861, 1866-70-80, 1902, 1917	16	
“	Least number days rain fell, 1849	4	



## August

Results of Observations.		1921	Mean for 70 years
BAROMETER	— Mean reading, 32 F. inches	29.670	29.617
	“ Highest on 21st at 11.00h	29.950	29.909
	“ Lowest on 18th at 1.14h	29.203	29.257
	“ Range	0.747	0.652
TEMPERATURE	— Highest (30th)	90.6	87.0
	“ Lowest (22nd)	47.4	45.7
	“ Range for the month	43.2	41.3
	“ Mean of the highest readings	78.4	76.1
	“ Mean of the lowest readings	57.6	57.1
	“ Mean daily range	20.8	19.0
	“ Mean from max. and min.	68.0	*66.3
	“ Mean from 24 hourly observations	67.0	†66.9
	“ Highest daily mean (30th)	77.3	
	“ Lowest daily mean (21st)	58.5	
	“ Mean daily range from 24 hourly observations	18.8	
	“ Mean of dew point	58	
	“ Highest solar (black bulb in vacuum (30th)	141.0	
“ Lowest radiation (22nd)	43.0		
“ Monthly range	98.0		
HUMIDITY	— Mean	75	74
FORCE OF VAPOUR	— Mean	0.490	0.488
RAINFALL	— Total fall (inches)	2.07	2.77
	“ Heaviest fall (14th)	0.64	
	“ No. of days on which rain fell	7	10.9
CLOUD	— Mean amount of (0-10)	.41	.49
	*1840—1898	†1881—1908	

## Results of Observations—August (Continued)

WINDS	Mean velocity	8.8 miles
“	Highest velocity at 19hrs of 20th	
	from northwest.	28 “
“	Highest daily average velocity (25th)	14.5 “
“	Lowest “ “ (22nd)	5.2 “
“	Days on which gales occurred	0

No. of hours in the month in which the wind was	N.	N.E.	E.	S.E.	S.	S. W.	W.	N. W.	C.	Totals.
	102	28	164	5	207	26	177	32	3	744
No. of miles registered from each direction.	64	333	1513	33	1755	230	1546	518	—	6576

Rain on the 1st, 6th, 7th, 11th, 14th, 17th and 29th. Thunderstorms on the 6th, 11th, 14th and 29th. Fog on 11th. Heavy dew on 4th, 5th, 9th, 10th, 13th, 15th, 19th, 21st, 22nd, 23rd, 24th, 26th, 28th and 30th. Clear days 8. Cloudy days 5.

## Extreme Readings

DURING 82 YEARS.

Barometer	— Highest reading, 1918 (19th)	30.104	inch
	“ Lowest reading, 1912 (22nd)	29.028	“
Temperature	— Highest, 1918 (13th)	102.2°	
	“ Lowest, 1855 (18th), 1870 (27th)	40.0°	
	“ Highest daily mean (during 41 yrs) 1900 (8th) 1916 (21st)	84.8	
	“ Lowest daily mean, (during 41 yrs) 1912 (30th),	52.4°	
	“ Highest monthly mean, 1900	72.5°	
“ Lowest monthly mean, 1866	60.8°		
Rainfall	— Greatest fall, 1915	8.14	in.
	“ Least fall, 1876	0	“
	“ Greatest number of days rain fell, 1872	19	
	“ Least number days rain fell, 1876	0	



September

Results of Observations.		1921	Mean for 70 years.
BAROMETER	— Mean reading, 32 F. inches	29.594	29.667
	“ Highest on 19th at 9.33h	29.947	30.037
	“ Lowest on 30th at 9.28h	28.958	29.187
	“ Range	0.989	0.850
TEMPERATURE	— Highest (2nd)	92.0	82.7
	“ Lowest (27th)	43.0	35.7
	“ Range for the month	49.0	47.0
	“ Mean of the highest readings	78.7	68.2
	“ Mean of the lowest readings	56.7	50.2
	“ Mean daily range	22.0	18.0
	“ Mean from max. and min.	67.7	*58.8
	“ Mean from 24 hourly observations	65.9	‡60.5
	“ Mean daily range from 24 hourly observations	23.4	
	“ Highest daily mean (2nd)	78.5	
	“ Lowest daily mean (26th)	55.1	
	“ Mean of dew point	57	
	“ Highest solar (black bulb in vacuum (2nd)	141.8	
“ Lowest radiation (26th)	38.2		
“ Monthly range	103.6		
HUMIDITY	— Mean	77	78
FORCE OF VAPOUR	— Mean	0.471	0.393
RAINFALL	— Total fall (inches)	1.27	3.18
	“ Heaviest fall (30th)	0.29	
	“ No. of days on which rain fell	8	11.4
CLOUD	— Mean amount of (0-10)	.41	.50
	*1840—1898	‡1881—1908	

Results of Observations—September (Continued)

WINDS	Mean velocity	10.2 miles
“	Highest velocity (30th) at 14h from W	40 “
“	Highest daily average velocity (4th)	19.3 “
“	Lowest “ “ (1st)	3.8 “
“	Days on which gales occurred	1

No. of hours in the month in which the wind was	N.	N.E.	E.	S.E.	S.	S. W.	W.	N. W.	C.	Totals.
	125	8	181	3	146	37	202	16	2	720

No. of miles registered from each direction.	N.	N.E.	E.	S.E.	S.	S. W.	W.	N. W.	C.	Totals.
	712	50	1977	10	1512	515	2368	197	—	7311

Rain on 3rd, 5th, 11th, 17th, 18th, 21st, 25th, 28th and 30th. Thunderstorms on 3rd and 21st. Aurora Class III. on 28th. Fog on 29th. Heavy dew on 1st, 2nd, 8th, 9th, 23rd, 24th, 26th and 27th. Clear days 9. Cloudy 3.

Extreme Readings

DURING 82 YEARS.

Barometer	— Highest reading, 1904 (22nd)	30.243	inch
	“ Lowest reading, 1848 (29th)	28.863	“
Temperature	— Highest, 1898 (2nd)	97.1°	
	“ Lowest, 1896 (23rd)	27.6°	
	“ Highest daily mean (during 40 yrs) 1881 (6th)	81.3°	
	“ Lowest daily mean, (during 40 yrs) 1883 (30th), 1888 (30th)	41.4°	
	“ Highest monthly mean, 1921	67.7°	
“ Lowest monthly mean, 1848	53.4°		
Rainfall	— Greatest fall, 1843	9.76	in.
	“ Least fall, 1897	0.40	“
	“ Greatest number of days rain fell, 1907	19	
	“ Least number days rain fell, 1840, 1844	4	



October

Results of Observations.		1921	Mean for 70 years.	
BAROMETER	— Mean reading, 32 F. inches	29.555	29.651	
	“ Highest on 14th at 9.00h	30.013	30.112	
	“ Lowest on 20th at 9.00h	29.130	29.066	
	“ Range	0.883	1.046	
TEMPERATURE	— Highest (1st)	71.7	70.3	
	“ Lowest (13th)	32.8	25.5	
	“ Range for the month	38.9	44.8	
	“ Mean of the highest readings	58.9	54.9	
	“ Mean of the lowest readings	41.8	39.1	
	“ Mean daily range	17.1	15.8	
	“ Mean from max. and min.	50.3	*46.6	
	“ Mean from 24 hourly observations	49.2	‡48.1	
	“ Highest daily mean (18th)	56.7		
	“ Lowest daily mean (25th)	41.6		
	“ Mean daily range from 24 hourly observations	15.1		
	“ Mean of dew point	43		
HUMIDITY	— Mean	80	79	
	FORCE OF VAPOUR—Mean	0.291	0.258	
	RAINFALL	— Total fall (inches)	4.46	2.40
		“ Heaviest fall (7th)	1.52	
“ No. of days on which rain fell		15	12.4	
SNOWFALL	— Total fall inches	0	0.6	
	“ No. of days on which snow fell	0	1.6	
CLOUD	— Mean amount of (0-10)	.56	.61	
	*1840—1898	‡1881—1908		

Results of Observations—October (Continued)

WINDS	Mean velocity	11.2 miles
“	Highest velocity at 16 and 17hrs of 22nd from west.	34 “
“	Highest daily average velocity (22nd)	22.5 “
“	Lowest “ “ (16th)	4.0 “
“	Days on which gales occurred	1

No. of hours in the month in which the wind was	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	C.	Totals.
	91	42	185	5	124	54	203	39	1	744

No of miles registered from each direction.	828	537	1979	23	1174	758	2412	638	—	8349
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Rain on 2nd, 3rd, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 18th, 19th, 20th, 21st, 28th and 31st. Thunderstorm on 19th. Fog on 7th, 17th and 31st. Heavy dew on 2nd, 4th, 6th, 14th, 16th, 18th, 19th, 22nd, 23rd, 25th and 29th. Hoar frost on 5th, 15th, 20th and 27th. Clear days 3. Cloudy 8.

### Extreme Readings

DURING 82 YEARS.

Barometer	— Highest reading, 1847 (28th)	30.396 inch
“	Lowest reading, 1893 (14th)	28.227 “
Temperature	— Highest, 1897 (15th)	85.7°
“	Lowest, 1844 (31st)	15.9°
“	Highest daily mean (during 41 yrs) 1897 (15th)	71.0°
“	Lowest daily mean, (during 41 yrs) 1887 (30th),	27.8°
“	Highest monthly mean, 1900	55.7°
“	Lowest monthly mean, 1841	41.8°
Rainfall	— Greatest fall, 1849	5.97 in.
“	Least fall, 1901	0.56 “
“	Greatest fall for 24 hours, 1849 (6th)	3.16 “
“	Greatest number of days rain fell, 1864	22
“	Least number days rain fell, 1841	6
Snowfall	— Greatest fall, 1844	12.0 in.
“	Least fall, 1916-18-19-21	0 “
“	Greatest for 24 hours, 1875 (17th)	3.3 “
“	Greatest No. days snow fell 1869	7



November

Results of Observations.		1921	Mean for 70 years.
BAROMETER	— Mean reading, 32 F. inches	29.658	29.627
"	— Highest on 20th at 10.33h	30.142	30.169
"	— Lowest on 4th at 6.08h	29.146	28.975
"	— Range	0.996	1.194
TEMPERATURE	— Highest (19th)	61.6	57.9
"	— Lowest (23rd)	21.1	13.5
"	— Range for the month	40.5	44.4
"	— Mean of the highest readings	42.0	42.5
"	— Mean of the lowest readings	30.7	30.1
"	— Mean daily range	11.3	12.4
"	— Mean from max. and min.	36.3	*36.0
"	— Mean from 24 hourly observations	35.9	±37.1
"	— Warmest day (mean of 24hrs) (18th)	53.9	
"	— Coldest day (mean of 24hrs) (23rd)	26.4	
"	— Range between warmest and coldest	27.5	
"	— Highest solar (black bulb in vacuum) (10th)	114.2	
"	— Lowest radiation (23rd)	19.3	
"	— Monthly range	94.9	
HUMIDITY	— Mean	81	80
RAINFALL	— Total fall (inches)	0.70	2.49
"	— Heaviest fall (6th)	0.26	
"	— No. of days on which rain fell	12	10.3
SNOWFALL	— Total fall (inches)	7.5	4.6
"	— Heaviest fall (9th)	5.6	
"	— No. of days on which snow fell	8	7.3
CLOUD	— Mean amount of (0-10)	.79	.74
	*1840—1898	±1881—1908	

Results of Observations—November (Continued)

WINDS	— Mean velocity											13.8 miles	
"	— Highest velocity, midnight on 23rd from east.											40 "	
"	— Highest daily average velocity (26th)											26.9 "	
"	— Lowest " " " (6th)											7.8 "	
"	— Days on which gales occurred											5	
No. of hours in the month in which the wind was	N.	N.E.	E.	S.E.	S.	S. W.	W.	N. W.	C.	Totals.			
	191	28	117	7	93	35	221	26	2	720			
No. of miles registered from each direction.	2046	647	2251	99	1014	530	2971	378	—	9936			
Rain on 3rd, 4th, 6th, 7th, 14th, 17th, 18th, 19th, 24th, 26th, 27th, 30th. Snow on 5th, 6th, 8th, 9th, 10th, 13th, 24th and 26th. Fog on 14th, 16th, 17th, 18th, 27th. Clear days 2. Cloudy days 19.													
<b>Extreme Readings</b> DURING 82 YEARS.													
Barometer	— Highest reading, 1887 (30th)											30.592	inch
"	— Lowest reading, 1913 (9th)											28.327	"
Temperature	— Highest, 1903 (3rd)											70.2°	
"	— Lowest, 1875 (30th)											-5.0°	
"	— Highest daily mean (during 41 yrs) 1882 (11th)											58.0°	
"	— Lowest daily mean, (during 41 yrs) 1891 (29th),											11.4°	
"	— Highest monthly mean, 1902											42.9°	
"	— Lowest monthly mean, 1873											27.6°	
Rainfall	— Greatest fall, 1846											5.80	in.
"	— Least fall, 1904											0.08	"
"	— Greatest fall for 24 hours, 1861 (2nd)											3.13	"
"	— Greatest number of days rain fell, 1877											16	
"	— Least number days rain fell, 1904											4	
Snowfall	— Greatest fall, 1873											19.6	in.
"	— Least fall, 1847 and 1850											not measurable	"
"	— Greatest for 24 hours, 1873 (27th)											9.5	"
"	— Greatest No. days snow fell 1869, 1873, 1892											18	
"	— Least No. days snow fell, 1850 and 1899											1	



December

Results of Observations.		1921	Mean for 70 years.
BAROMETER	— Mean reading, 32 F. inches	29.594	29.644
"	Highest on 16th at 1.58h	30.171	30.226
"	Lowest on 31st at 12.04h	28.814	28.936
"	Range	1.357	1.291
TEMPERATURE	— Highest (2nd)	51.8	47.5
"	Lowest (22nd)	0.0	-2.3
"	Range for the month	51.8	49.8
"	Mean of the highest readings	35.4	32.5
"	Mean of the lowest readings	21.3	20.0
"	Mean daily range	14.1	12.5
"	Mean from max. and min.	28.3	*26.2
"	Mean from 24 hourly observations	27.9	†27.6
"	Warmest day (mean of 24 hrs) (2nd)	46.3	
"	Coldest day (mean of 24 hrs) (22nd)	11.7	
"	Range between warmest and coldest	34.6	
"	Highest solar (black bulb in vacuum (27th)	91.0	
"	Lowest radiation (30th)	-0.3	
"	Monthly range	91.3	
HUMIDITY	— Mean	77	82
RAINFALL	— Total fall (inches)	1.73	1.53
"	Heaviest fall (17th)	0.90	
"	No. of days on which rain fell	7	6.3
SNOWFALL	— Total fall inches	6.8	13.0
"	Heaviest fall (22nd)	2.0	
"	No. of days on which snow fell	12	13.1
CLOUD	— Mean amount of (0-10)	.75	.77
	*1840—1898	†1881—1908	

Erratum—Normals for December in 1920 report should read for November.

Results of Observations—December (Continued)

WINDS	— Mean velocity	12.4 miles
"	Highest velocity, 7 hrs. of 18th from southwest.	55 "
"	Highest daily average velocity (18th)	36.0 "
"	Lowest " " " (15th)	5.0 "
"	Days on which gales occurred	3

No. of hours in the month in which the wind was	N.	N.E.	E.	S.E.	S.	S. W.	W.	N. W.	C.	Totals.
	95	63	37	51	40	134	185	138	1	744

No. of miles registered from each direction.	763	507	396	606	345	2489	2496	1629	—	9231
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Rain on 2nd, 10th, 11th, 12th, 16th, 17th, 18th, Snow on 6th, 7th, 8th, 16th, 18th, 22nd, 23rd, 24th, 26th, 28th, 29th and 31st. Fog on the 1st and 17th. Lunar halo on the 12th. Blizzard on 18th. Clear days 2. Cloudy days 16.

Extreme Readings

DURING 82 YEARS.

Barometer	— Highest reading, 1887 (1st)	30.594	inch
"	Lowest reading, 1855 (9th), 1856 (14th)	28.459	"
Temperature	— Highest, 1875 (31st)	61.0°	
"	Lowest, 1871 (21st)	-21.0°	
"	Highest daily mean (during 41 yrs) 1911 (11th)	51.9°	
"	Lowest daily mean, (during 41 yrs) 1917 (29th),	-9.7°	
"	Highest monthly mean, 1889	34.3°	
"	Lowest monthly mean, 1876	17.2°	
Rainfall	— Greatest fall, 1841	6.60	in.
"	Least fall, 1840, 1845, 1876	0	"
"	Greatest fall for 24 hours, 1870 (6th)	1.95	"
"	Greatest number of days rain fell, 1889 and 1911	14	
"	Least number days rain fell, 1876	0	
Snowfall	— Greatest fall, 1872	38.0	in.
"	Least fall, 1877	0.3	"
"	Greatest for 24 hours, 1898 (4-5)	16.0	"
"	Greatest No. days snow fell 1872	24	
"	Least No. days snow fell, 1895	3	



### Summary of Observations.

READINGS OF BAROMETER IN INCHES.	1921	Mean for 70 years
Mean of the year	29.635	29.619
Highest monthly mean, January	29.729	
Lowest " " October	29.555	
Highest reading, January 18th	30.606	30.371
Lowest " " December 31st	28.814	28.707
Range	1.792	1.664
THERMOMETER, FAHRENHEIT.		
Highest monthly mean temperature, July	77.9	
Lowest " " " " January	27.8	
Highest daily mean temperature, July 6th	85.4	
Lowest " " " " January 18th	1.2	
Highest temperature, July 5th	98.4	91.2
Lowest " " " " January 18th	-5.0	-12.0
Range for the year	103.4	103.2
Mean from max. and min.	49.9	*44.2
Mean from 24 hourly observations	49.1	†45.0
Mean humidity	76	77
Highest solar (black bulb in vacuum) June 23rd	146.2	
Lowest (radiation) on January 18th	-9.2	
Yearly range	155.4	
Total fall of rain	inches 23.89	26.86
Greatest monthly rainfall, April	" 4.53	
Least " " February	" 0.18	
Greatest rainfall in 24 hrs, October 7th	" 1.52	
Number of days rain fell	109	112.9
Total fall of snow	inches 34.5	66.1
Greatest monthly snowfall, February	" 11.6	
Greatest snowfall in 24 hrs. November 9th	" 5.6	
Number of days on which snow fell	37	62.9
Mean amount of cloud (0-10)	.55	.62
*1840-1898		†1881-1908

### Wind Summary.

Total mileage for year	96,874
Greatest monthly mileage, November.	9,936
Greatest mileage in 24 hours (December 18th)	869
Greatest mileage in 1 hour (December 18th at 7hrs.)	55
Number of gales	20
Average velocity for year	11.1
Prevailing direction, west. Mileage, 25,212. Total hours, 2,123.	

### Harbor Notes.

The following table gives the dates on which the ice formed and left Toronto harbor for the past 25 years.  
(This table has been kindly furnished by the Toronto Harbor Master.)

Winter	Frozen over	Clear of ice	No. of days
1896-97	December 22nd	March 11th	79
1897-98	" 24th	" 16th	82
1898-99	" 13th	April 8th	116
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	83
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	March 20th	70
1913-14	" 14th	April 2nd	78
1914-15	December 15th	" 2nd	108
1915-16	" 27th	" 3rd	98
1916-17	" 11th	March 28th	107
1917-18	" 11th	April 5th	115
1918-19	January 5th	January 9th	4
1919-20	December 17th	March 28th	103
1920-21	" 31st	February 3rd	17*
Longest time frozen, 1831-32	Nov. 10th to Apr. 15th,		162 days
Shortest " " 1918-19	January 5th to 9th.		4 "

\*Clear at intervals.



**Absolute Extremes**

DURING 82 YEARS.

Readings of the barometer, in inches.

Highest yearly mean, 1849,	29.668
Lowest " " 1864,	29.560
Highest monthly mean, February, 1906,	29.819
Lowest " " April, 1920,	29.411
Greatest monthly range 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 reading on July 3rd, 1911	103.2
Lowest reading on January 10th, 1859,	-26.5
Highest daily mean temperature, (during 41 years) July 3rd, 1911	91.3
Lowest daily mean temperature (during 41 years) Jan. 13th, 1914	-15.2
Highest monthly mean, July, 1921,	77.0
Lowest " " February, 1875,	10.2
Highest yearly " 1921,	49.9
Lowest " " 1875,	40.6

Rainfall, in inches.

Greatest fall in 24 hours, July 27th, 1897,	3.88
Greatest rainfall in a month, September, 1843,	9.76
Greatest rainfall in a year, 1843,	43.50
Least " " " " 1874,	17.57
Greatest number of rainy days in a month, May, 1890,	28
Greatest number of rainy days in a year, 1890,	145
Least " " " " " " 1841,	8

**Absolute Extremes—(Continued.)**

DURING 82 YEARS.

Snowfall in Inches.

Greatest fall in 24 hours, March 28th. 1876,	16.2
Greatest fall in a month, March, 1870,	62.4
Greatest fall of snow in a year in 1870,	122.9
Least " " " " " " 1919,	28.7
Greatest fall in any winter, 1869-70,	123.5
Least fall in any winter, 1877-78 and 1905-06,	30.2
Greatest No. of days of snow in a month, Dec. 1870 and December 1872	24
Greatest number of days of snow in a year, 1859,	87
Least " " " " " " " 1848,	33

**Dates of Certain Periodic Events.**

	EXTREME	1921
Latest snow.....	June 4, 1859 .....	April 17th
Earliest snow.....	Sept. 25, 1860 .....	Nov 5th
Latest hoar frost.....	June 20, 1862 .. .....	May 17th
Earliest hoar frost.....	Aug. 26, 1863 .....	Oct. 5th
Earliest thunder & lightning	Jan. 12, 1898 .....	March 15th
Latest thunder and lightning	Dec. 23, 1871 .....	Oct. 19th



TOTAL AMOUNT OF SUNSHINE RECORDED ON EACH DAY—1921.

Month.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
January.	0	0	5.9	2.7	T	8.1	0	8.0	8.2	7.6	0.8	3.2	3.5	0	1.8	0	7.0
February.	0	0	2.2	0	0	4.5	0	4.9	0.5	0	0	6.7	6.2	5.5	6.6	4.3	3.8
March.	4.1	3.1	2.7	6.0	0	1.5	0	0	4.3	9.8	7.5	0	1.0	0	0	9.5	0.3
April.	11.4	9.0	9.8	8.7	9.9	9.5	9.5	0	7.1	2.3	12.1	8.1	6.9	0.7	2.5	0	0
May.	0.5	0	12.5	6.7	12.3	10.3	11.0	13.4	13.1	12.3	12.8	0.2	0.6	6.4	9.0	6.4	7.9
June.	14.2	13.2	4.9	14.3	14.5	1.6	8.8	14.0	9.5	9.4	3.9	13.7	13.8	14.7	14.3	8.1	3.0
July.	12.8	13.2	12.9	9.5	9.6	10.8	8.2	3.8	2.4	5.6	13.0	0.7	11.7	8.6	13.3	11.5	13.0
August.	3.2	3.5	11.8	13.2	11.3	4.2	4.4	9.5	10.2	7.8	1.0	3.7	10.2	12.0	11.8	10.0	0
September.	10.6	10.2	5.9	4.0	0.8	10.6	11.5	11.1	9.7	9.0	6.0	11.4	10.5	0.7	4.2	7.3	1.1
October.	10.0	1.7	2.7	4.5	7.1	10.0	0	5.6	1.1	0.3	0.8	2.7	9.2	9.7	9.0	5.9	3.4
November.	0	9.2	T	0	6.1	0	1.6	0.5	0	4.6	0.7	1.8	0	0	3.4	3.7	0
December.	0	0	3.1	4.1	1.0	4.9	0.1	0	0	0.2	3.8	0.8	1.5	0.9	8.0	0	0

TOTAL AMOUNT OF SUNSHINE RECORDED ON EACH DAY—1921. (Continued).

Month.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Monthly Total	Monthly Percentage.
January.	7.8	0.6	6.1	0.2	0	3.4	6.5	8.5	8.1	6.8	4.1	0.4	0	2.8	112.1	39
February.	8.5	5.6	7.8	7.9	3.3	0.1	10.1	5.2	0	0	0				93.7	32
March.	8.5	0	0.5	0.8	10.5	10.4	3.0	3.3	9.2	1.6	1.7	5.5	10.5		115.3	31
April.	10.9	12.7	7.3	0	0	0.1	12.5	11.1	11.8	6.0	9.0	0	0		188.9	47
May.	8.5	12.9	12.7	12.3	1.9	6.4	5.4	0	6.4	10.6	9.0	4.9	9.8	9.2	245.4	54
June.	12.1	14.2	13.4	14.1	12.1	12.4	8.8	9.9	13.0	6.0	7.6	8.7	10.6		318.8	68
July.	1.8	6.4	11.2	10.8	11.0	11.9	11.6	8.1	9.0	10.4	12.5	7.1	11.5	13.0	296.9	64
August.	4.8	8.3	11.8	12.7	12.0	12.2	11.4	11.4	11.8	3.4	6.7	7.9	7.8	10.6	260.6	61
September.	4.6	9.9	0.1	0.5	10.4	11.0	9.8	5.4	9.9	7.6	9.6	8.0	2.6		214.0	57
October.	3.9	0	1.0	5.4	8.3	8.6	0.8	8.8	9.3	6.7	0.7	4.2	3.3	T	144.7	41
November.	0	0.3	3.2	1.6	0.4	0	0	6.4	0	0	0	0	0		43.5	15
December.	0	0	4.5	6.1	0.4	0	0.2	8.3	0.4	2.7	0.1	7.7	0.3	0	59.1	21



## MONTHLY TABLES FOR EACH HOUR OF RECORDED SUNSHINE—1921

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	2.4	4.0	4.7	5.5	5.3	4.9	4.4	3.9	1.1	0	0	0
February.	0	0	0	0	0.8	2.9	3.3	3.6	4.2	4.1	4.2	4.0	5.4	2.4	0.6	0	0
March.	0	0	0	0.1	1.9	3.1	3.3	3.7	4.1	4.6	4.4	3.9	3.6	3.2	1.3	0	0
April.	0	0	0.1	2.7	4.3	5.8	5.5	6.0	6.0	6.6	5.9	5.2	4.6	5.1	3.8	1.5	0
May.	0	0	1.6	5.1	6.2	6.2	6.1	6.5	6.5	6.6	6.5	6.4	6.0	5.9	5.0	3.9	0.6
June.	0	T	4.8	7.5	7.6	7.8	7.7	8.0	8.1	8.5	8.3	7.7	7.3	7.4	6.9	6.2	2.4
July.	0	T	0.8	5.1	7.0	8.4	6.9	8.4	8.9	9.0	8.5	7.0	7.1	6.8	5.5	3.6	0.9
August.	0	0	0.6	4.7	6.5	6.7	7.6	7.4	7.0	6.9	7.1	6.2	6.8	6.8	6.0	3.7	0.1
September.	0	0	0	1.8	5.3	6.6	6.8	7.2	6.6	7.7	7.5	6.7	6.8	5.7	3.2	0.2	0
October.	0	0	0	0	2.3	4.0	4.5	5.8	5.4	5.2	5.2	5.5	5.0	3.4	0.1	0	0
November.	0	0	0	0	0.6	1.7	1.6	2.1	2.7	2.8	1.6	1.2	0.9	0.3	0	0	0
December.	0	0	0	0	T	1.0	1.9	2.2	2.6	3.1	3.1	2.4	2.5	0.2	0	0	0
Total hours.	0	T	7.9	27.0	42.5	56.6	59.2	65.6	67.6	70.4	67.2	60.6	59.9	48.3	32.4	19.1	4.0



**SUMMARY OF SUNSHINE.**
**BRIGHT SUNSHINE RECORDED.**

	1921			Mean from 1882 to 1910.		
	Number of days.	Number of hours	Percentage of sunshine.	Number of days.	Number of hours.	Percentage of sunshine.
January	24	112.1	39	20	77.9	27
February	18	93.7	32	22	108.1	37
March	23	115.3	31	25	150.0	40
April	23	188.9	47	25	190.7	47
May	29	245.4	54	29	218.9	48
June	30	318.8	68	29	260.0	56
July	31	296.9	64	30	282.2	60
August	30	260.6	60	30	252.7	60
September	30	214.0	57	28	207.8	55
October	29	144.7	41	28	149.3	44
November	15	43.5	15	22	85.3	29
December	21	59.1	21	20	65.2	24
<b>Year</b>	<b>303</b>	<b>2093.0</b>	<b>47</b>	<b>308</b>	<b>2048.1</b>	<b>46</b>

Possible hours, 4,452.4.



### 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 1921.	P.T.		S		L.W.		Max.		End.		Max Amplitude. MM.	REMARKS.
		Commence H.	M.	Commence H.	M.	Commence H.	M.	H.	M.	H.	M.		
2225	Jan. 2	e 7	31.7			7	55.3	8	4.3	8	06.9	0.2	Near Mendoza.
2226	" 3					21	44.4	21	45.1	21	47.2	0.2	
2227	" 6					13	6.5	13	17.2	14	15.6	0.3	
2228	" 7					13	9.7					0.3	Small micros going on.
2229	" 7					1	59.4	2	9.3	2	26.3	0.1	Slow isolated waves.
2230	" 7					3	37.5					0.3	
2231	" 9			13	13.2	4	11.5	4	17.1	5	3.9	0.4	Micros before S. Micros 14 21.9 and 14 35.0 Small micros going on.
2232	" 9					4	42.2					0.5	
2233	" 15					13	25.3	13	30.0	13	58.1?	0.1	Micros 14 21.9 and 14 35.0 Small micros going on.
2234	" 19					14	55.1	14	58.4			0.2	
2235	" 20					13	19.3	15	30.6	15	32.1	0.8	ke. 3,610 km. Well defined. Mexico.
2236	" 30	21 6.2	21 13.0	21 13.0	21 19.7	21 19.7	21 24.1	21 24.1	21 52.9	21 52.9	21 52.9	0.4	
2237	Feb. 4	8 29.4	8 34.8	8 34.8	8 39.8	8 39.8	8 42.1	8 42.1	10 47.3?	10 47.3?	10 47.3?	0.2	Micros mask early phases.
2238	" 6				5 8.0	5 8.0	5 17.7	5 17.7	Micros	Micros	Micros	0.8	
2239	" 10					15	39.0					0.3	May be a dual quake.
2240	" 11	e 0	19.2?		0	49.2		2.7				0.3	
2241	" 14	e 0	24.6			17	50.5	17	51.0			0.3	
2242	" 19					1	54.0?					0.3	
2243	" 19					2	0.5					0.3	
2244	" 19					15	50.9	16	4.5			1.3	May be a dual quake.
2245	" 19					13	52.9	19	35.4			0.2	
2245	Feb 21	e 16	8.0?			15	56.2			15	59.2	0.1	
2246	" 21					16	15.7	16	16.4			0.7	
2247	" 21					16	25.2			16	41.6	0.3	
2248	" 21			19	40.9?	19	45.3	19	45.6	19	52.6?	0.5	
2249	" 27			18	41.8?	19	11.2	19	24.7			4.0	
2250	Mar 1			18	42.8	19	17.7					0.2	Alaska.
2251	" 3					7	38.1?	7	49.5	8	3.7	0.3	
2252	" 3					8	48.4					0.2	Possibly N. Ecuador.
2253	" 5					9	43.1	9	47.9	10	13.8	0.2	
2254	" 6	7 31.6	7 36.5	7 36.5	7 29.3	7 29.3	7 42.3	7 42.3	8 11.0	8 11.0	8 11.0	1.5	
2255	" 10					7	41.6			8	43.6	0.1	
2256	" 12			0	44.2	10	47.7	10	52.5	11	55.1	1.8	Possibly N. Ecuador.
2257	" 16					12	45.9	12	49.1	13	5.0	0.3	
2258	" 21							to 12 51.1				0.3	
2259	" 21					4	21.4	4	36.4	4	58.5	0.3	
2260	" 22					6	59.2			7	8.7	0.05	May not be seismic.
2261	" 24					13	8.0	13	19.7			0.3	
2262	" 24					to 13 17.2						0.3	Phases interfered with locally.
2263	" 25					10	17.8	10	24.8	11	11.2?	0.3	
2264	" 28			15	2.7?	10	22.5					2.0	3,700 km. Nicaragua.
2265	" 29			15	4.8?	15	17.6	15	26.9	16	23.7	0.2	
2266	" 29	7 55.7	8 1.3	8 1.3	0 46.1	0 46.1	0 52.3	1 40.2	1 40.2	1 40.2	1 40.2	5.0	May not be seismic.
2267	" 30					8	5.8	8	8.1	10	19.2	0.3	
2268	" 30					22	56.5	23	3.2	23	18.7?	0.1	e 15 18.4.
2269	Apr. 1					23	22.0?			23	41.2	0.2	
						23	33.0					0.3	
				15	23.6?	15	34.9	15	36.4	17	7.4	0.3	
						16	19.3	16	24.6			0.5	
						5	19.5	5	36.4	6	19.5	0.5	
						5	23.6						

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No.	Date 1921	P. T. Commence.	S. Commence.	L. W. Commence.	Max.	End	Max. Amplitude.	REMARKS
2270	April 1			13 3.1	13 10.7	13 46.2	0.4	
				13 7.5				
2271	" 2			10 39.1	10 48.2	11 17.1	0.2	
2272	" 3			3 2.8	3 3.8	3 17.7	0.2	
2273	" 10			13 59.9	14 0.6	14 28.8	2.8	
2274	" 12			7 48.6	7 49.0	8 18.6	0.3	
2275	" 20			19 0.7	19 6.0	19 25.1	0.3	
				19 4.0				
2276	" 22			7 25.9	7 27.7	8 18.8	0.3	
2277	" 25			18 33.6	18 37.8	19 16.1	0.6	
				18 36.3				
2278	May 1	5 47.2?	5 51.8	5 59.8	6 6.8	7 2.2	2.0	Cff Trejupan Pt., Mexico.
				6 2.8				
2279	" 12	e 4 40.0?		4 44.0	4 55.2	5 24.4	0.3	
				4 53.4				
2280	" 12			5 55.2			0.05	
				to 6 5.0				
2281	" 14			13 29.4	13 33.5		0.2	Three strong eqs. Salvador.
2282	" 14	e20 45.2		20 48.4	20 50.0		0.2	il 20 54.2. Merged into 2283.
2283	" 14			21 16.4	21 25.3		0.8	el 21 27.3.
				21 21.0				
2284	" 14	e22 22.2			22 40.9	23 3.4	0.2	
2285	" 16	e15 55.7		16 15.9	16 23.9	17 5.9	0.3	
				16 21.1				
2286	" 20			1 28.2	1 28.3		0.3	Times unreliable. No cut off.
				1 27.4				
2287	" 21			9 21.9	10 5.2	Micros	0.3	" " " " "
				9 49.6				
2288	" 21	e22 48.8		23 5.6	23 12.8	Micros	0.6	" " " " "
2289	" 28			20 14.9?		20 16.9	0.1	
2290	" 28			21 11.5	21 12.1	21 36.5	0.4	
2291	June 4			1 22.6	1 22.8	Micros	0.1	
2292	" 14				9 24.9	9 28.4	0.2	
2293	" 17			10 30.9	10 31.1	10 55.9	0.1	
2294	" 25	e 2 17.9		2 24.0	2 51.3		0.2	Micros previous to E.
				2 26.4				
2295	" 28	e14 37.0		14 54.0				Reading affected by micros or spider.
		14 40.0		15 4.8				3,070 km
2296	" 30	2 15.9	2 20.7	2 28.5	2 28.9		0.4	
2297	July 3			6 2.7?	6 3.4?	6 11.8?	0.1	
2298	" 4			9 47.0			0.05	
2299	" 7			11 33.7?				Heavy micros going on.
				11 38.1				
2300	" 13	e11 11.7		11 22.6			0.1	Micros going on.
				11 38.1				
2301	" 13			13 36.4			0.3?	Micros going on.
				13 45.8				
2302	" 25			19 9.4			0.2	Micros going on.
				19 16.9				
2303	" 25			19 59.2	19 59.5			
2304	" 29	e 1 4.3?		1 26.7	1 30.8	1 51.0	0.4	
		e 1 18.0						
2305	" 31	e10 22.5		10 52.6	11 3.0	12 12.6	0.5	Faint trace.
		10 32.9		10 56.6				
2306	Aug 14	e14 14.3		14 17.8			0.2	
				14 27.2				
2307	" 19			8 41.3	8 42.0	9 2.0	0.5	
2308	" 23	20 24.3?	20 29.7	20 34.1	20 41.1	21 56.3	2.0	3,610 km. Possibly West Indies.
				20 39.2				
2309	Sept 5	e20 27.4		20 34.6	20 50.9	21 24.6?	0.9	
				20 40.2				
2310	" 8	Clock stopped.	quake missed.	5 2.7	5 55.2	7 18.8	3.2	
	" 11	4 21.9	4 35.4					

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No.	Date 1921	P.T. Commence.	S. Commence.	L.W. Commence.	Max.	End.	Max. Amplitude.	REMARKS.
2311	Sept. 13	Clock	stopped,	quake	missed.	5 13.4	0.6	
2312	" 19		23 41.6?	4 39.7 23 51.0?	4 43.8	1 10.7 1 51.0	1.8 0.1	May be repeat.
2313	" 20			0 15.4 1 39.0	0 20.8	20 2.2	0.2	
2314	" 20			19 50.9			0.2	
2315	" 21			12 13.3 12 18.8	12 19.2		0.2	
2316	" 23			2 52.9		3 0.9	0.05	Doubtful as to being seismic.
2317	Oct. 1			17 18.0 17 19.8	17 23.0	17 29.4?	0.5	Utah earthquake.
2318	" 1			21 22.7 21 25.5			0.1	A continuous minute vibration.
2319	" 9			1 45.2		1 53.6	0.2	
2320	" 9			7 33.5		Micros	0.05	
2321	" 10			2 38.4 3 8.0			0.2	
2322	" 14			17 47.4	17 55.6	18 21.3	0.2	
2323	" 15	i5 19.5	5 28.2	5 48.3 6 1.8	6 12.0	7 46.2	2.0	7,260 km.?
2324	" 20		6 22.7	6 32.5 6 36.0	6 39.2	7 16.7	1.0	P. not recorded. S. came in abruptly. 0.8mm.
2325	" 20			11 50.7	11 52.7	12 10.5	0.1	
2326	" 25			16 4.8	16 7.0	16 27.6	0.4	Continuous vibration to 16 14.3.
2327	Nov. 2			4 1.1	4 4.3	4 15.9	0.3	
2328	" 2	e 8 15.3	lost attending	8 26.0	8 28.6	9 17.2	0.3	Looks like a dual quake.
2329	" 6	Quake	lost attending	17 4.3	17 32.5	18 46.9	0.3	
2330	" 7	e16 26.8	lost attending	15 4.5	15 35.4	15 35.4	0.2	
2331	Nov. 11	18 50.3?	18 59.6	19 25.4	20 7.8	21 32.9	1.2	
2332	" 13			8 56.3 9 0.3	20 10.2 9 1.3	9 20.8	0.4	
2333	" 14			7 54.9	8 2.5	8 9.3	0.5	Distant.
2334	" 15		21 0.0	21 19.7	21 22.9	22 32.3	1.0	Distant. SR. 21 2.5.
2335	" 24			11 32.3?	11 33.1?	Micros	0.2	
2336	" 29			23 43.4	23 47.8	0 8.1	0.2	
2337	Dec. 8			13 24.8	13 31.0	Micros	0.3	eL 13 28.6.
2338	" 18			10 58.3	11 2.4	11 7.6	0.3	
2339	" 18	15 37.8?	15 44.5	15 50.5	15 48.5		2.5	5,000 km, SR. 15 47.5. S. & sR came in abruptly.

Period of boom 18 seconds. Pillar inclination 1mm. = 0'45".



Number of Seismic disturbances recorded at Toronto from 1899 to 1921 inclusive, and for the complete period of 23 years.

YEAR	Jan	Feb	Mar	Apr	M'y	J'ne	Jul	A'g	Sep	Oct	N'v	Dec	Year.
1899	6	4	6	6	2	9	23	13	31	13	18	9	140
1900	21	5	10	3	3	11	7	9	5	12	8	8	102
1901	8	8	7	8	7	2	3	6	4	6	10	16	85
1902	13	7	9	5	0	2	3	6	5	5	4	4	63
1903	7	9	3	6	2	5	5	5	4	4	4	4	58
1904	3	3	7	4	6	8	3	5	8	2	4	3	56
1905	4	5	8	8	4	5	8	0	4	5	7	10	68
1906	15	17	11	12	1	12	5	8	6	4	3	9	103
1907	5	2	4	9	9	6	2	7	2	4	5	3	58
1908	2	7	4	3	3	1	3	6	4	4	8	3	48
1909	5	4	2	8	9	3	5	5	1	7	4	3	56
1910	6	10	4	5	8	14	4	3	13	8	12	9	96
1911	5	9	3	6	7	8	7	5	7	13	10	10	90
1912	8	2	2	5	8	67	10	7	7	6	11	14	147
1913	8	4	10	9	6	6	13	9	5	14	5	4	93
1914	5	9	15	7	9	6	9	11	6	16	12	7	112
1915	15	4	6	9	19	16	4	8	13	8	7	9	118
1916	13	11	11	14	7	12	3	15	11	13	12	8	130
1917	6	9	6	6	18	20	20	8	3	9	12	13	130
1918	9	15	11	8	10	15	13	9	11	17	12	16	146
1919	8	5	10	12	21	8	16	10	12	8	10	12	132
1920	16	17	13	10	14	10	9	10	11	13	7	10	140
1921	11	14	19	9	13	6	9	3	8	10	10	3	115
Total	199	180	181	172	186	252	184	168	181	201	195	187	2288

Of the total in June 1912, there were recorded: 6 on the 4th, 6 on the 6th, 17 on the 7th, 14 on the 8th, 9 on the 9th, 6 on the 10th. Total 58. These may not all be different quakes, some may be aftershocks. They were centred in Alaska.

Number of Seismic disturbances with amplitude of 5mm. and over, recorded at Toronto in each year from 1899 to 1921 inclusive.

Year.	5 mm. to 10 mm.	10 mm. to 15 mm.	15 mm. to 25 mm.	25 mm. and over.	Total.
1899	4	2	--	3	9
1900	3	--	2	1	6
1901	4	--	--	--	4
1902	4	--	1	1	6
1903	1	--	1	--	2
1904	2	1	1	--	4
1905	1	1	1	--	3
1906	--	--	4	1	5
1907	2	1	2	--	5
1908	2	--	--	--	2
1909	1	--	--	--	1
1910	1	--	2	--	3
1911	3	1	1	--	5
1912	7	--	1	--	8
1913	1	--	--	--	1
1914	1	--	--	--	1
1915	2	2	--	2	6
1916	4	2	--	1	7
1917	3	2	1	3	9
1918	3	3	--	1	7
1919	4	--	--	1	5
1920	1	--	1	1	3
1921	2	--	--	--	2
Total.	56	15	18	15	104

Number of Seismic disturbances with amplitude of 5mm. and over recorded at Toronto from 1899 to 1921 inclusive, showing the months in which they occurred.

Month.	5 mm. to 10 mm.	10 mm. to 15 mm.	15 mm. to 25 mm.	25 mm. and over.
January.	9	--	5	2
February.	4	--	--	1
March.	3	--	1	--
April.	2	3	2	3
May.	8	1	--	1
June.	5	4	2	1
July.	5	1	2	--
August.	3	1	2	--
September.	1	1	2	3
October.	3	--	2	3
November.	6	1	--	--
December.	7	3	--	1



**MAGNETIC SUMMARY FOR 1921**

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. I is obtained by formula  $H \tan I = Z$ .

1921	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 48.2	6.6	.15854	.00026	.58106	.00005	74 44.3	7 09.4	6 31.3	.15892	.15802	.58120	.58080
February	48.2	6.7	.15857	25	.58104		4 44.2	6 59.0	6 24.6	.15894	.15793	.58128	.58075
March	49.1	10.4	.15852	36	.58095	10	44.3	7 04.6	6 17.3	.15903	.15704	.58131	.58006
April	49.4	10.7	.15851	36	.58087	17	44.2	7 32.7	6 27.8	.15931	.15455	.58123	.57855
May	50.2	12.6	.15831	108	.58083	57	45.2	8 41.1	4 21.1	.16378	.15212	.58583	.57435
June	49.7	12.3	.15846	33	.58073	10	44.3	7 11.0	6 13.6	.15950	.15779	.58140	.58017
July	50.1	15.0	.15843	39	.58064	12	44.3	7 08.7	6 23.8	.15911	.15774	.58099	.57991
August	51.0	14.6	.15837	44	.58047	14	44.4	7 09.6	6 31.5	.15905	.15734	.58081	.57932
September	51.8	12.4	.15826	41	.58046	15	45.0	8 11.0	6 22.5	.15868	.15312	.58118	.57680
October	52.5	9.4	.15822	34	.58031	24	44.9	8 05.2	6 10.2	.15892	.15386	.58248	.57543
November	53.2	7.5	.15825	23	.58022	14	44.6	7 20.5	5 56.5	.15896	.15706	.58096	.57946
December	53.6	6.3	.15825	20	.58020	8	44.6	7 19.4	6 20.0	.15868	.15696	.58069	.57957
Year	6 50.6	10.4	.15839	.00039	.58065	.00016	74 44.5						



## Phenological Observations, 1921

### DATE WHEN FIRST SEEN.

Alder, shedding pollen.	March 24	Wild raspberry, in bloom	May 20
Dandelion in bloom	April 12	Cultivated currant	May 4
Trailing Arbutus	April 9	Thimble berry	May 30
Violet, Blue	April 26	Apple trees,	May 8
Violet, White	April 26	Song Sparrows.....	March 4
Columbine	May 28	Robins .....	March 9
Trees appear green	May 1	Meadow Larks .....	March 9
White Clover, in bloom	May 28	Blue Birds.....	March 9
Red Clover	May 31	Bronzed Grackles ...	March 17
Wild Rose	June 5	Red wing blackbird ..	March 19
Trillium	April 26	Phoebe .....	March 26
Anemone	May 6	Kildeer plover.....	March 25
Maple	March 18	White throated sparrow	April 30
Crocus	April 1	Towhee.....	April 4
Lilac	May 10	Flickers .....	April 4
Buttercup	May 26	Swallows.....	April 22
Hepatica	April 3	House wren.....	May 2
Yellow pond lilly	June 2	Orioles .....	May 16
Blue-eyed grass	June 6	King Birds.....	May 21
Elm	April 1	Humming birds.....	May 24
Dutchman's pipe	May 6	White butterfly.....	April 3
Marsh marigold	April 26	Frogs Piping.....	March 25
American thorn	May 16	Frost out of ground.	March 19
Horse chestnut	May 19	Rivers open.....	March 10
Plum, cultivated	May 3	Ploughing.....	April 5
Cherry, wild	April 29	Sowing.....	April 15
Cherry, cultivated	April 30	Hay Cutting.....	June 25
Strawberry, wild,	April 24	Potato Planting .....	April 15
Strawberry, wild, ripe	June 1		

