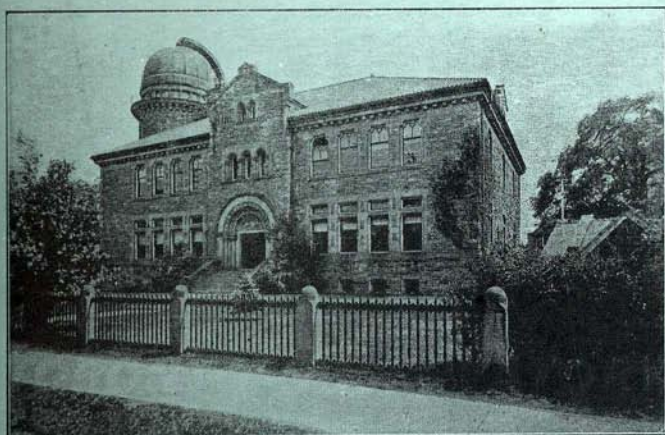


STEWART
AUG 27 1926

DEPARTMENT OF MARINE AND FISHERIES

DOMINION OF CANADA.

TORONTO OBSERVATORY



**Results of Meteorological, Magnetical
and Seismological Observations,
1924.**

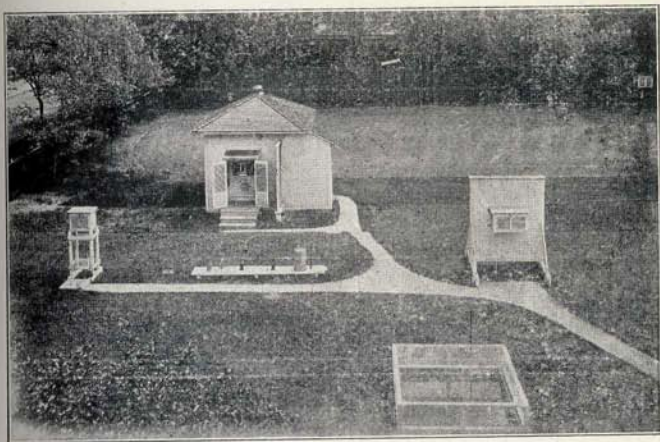
Published under the direction of
Sir Frederic Stupart, F.R.S.C.,
Director of the Meteorological Service, Toronto.

PRINTED BY THE OBSERVATORY PRESS,
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Thermometer Exposures, Toronto Observatory

Results of Meteorological, Magnetical and Seismological Observations, 1924.

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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 and minimum 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 August 31st, 1922, after 8 p.m., the thermometers were moved from the old Stevenson shed and placed in a similar situation on the lower lawn some 70 feet further from the stone building and subsequent readings 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 at the Eastern Gap on the Island, where the cups revolve at a height of 50 feet above the lake level.

GALE—A velocity of 32 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 owing to the large number of electric lights in the city.

Weather Synopsis for 1924

JANUARY. Fairly cold for the first week followed by a very mild period which extended to the 19th, temperatures exceeding 42° on the 9th, 10th and 11th. It became cold again on the 20th, temperature falling to -3° on the 21st with zero on the 22nd. The 23rd, 24th and 25th were slightly above the normal. Another cold wave then set in, bringing minimum temperatures of -5° and -6° on the 26th and 27th followed by a sharp recovery on the 28th. During the last three days very mild weather prevailed, 31° being recorded on the 30th. Sunshine showed 6% above normal. Four days of rain gave a fall well above normal, with 0.68 inch and 1 inch being recorded on the 10th and 16th respectively. The normal snowfall was exceeded by 8 inches, falling every day except two, with 6 inches on the 3rd as the heaviest daily fall. Winds were generally heavy and 12 gales were reported. The blizzard of the 6th and 7th caused heavy drifts and the wind velocity exceeded 50 miles an hour from the SW.

FEBRUARY. Temperature fluctuated considerably during the first 11 days, being generally above normal with minimums of 8° and 5° on the 8th and 9th. From the 12th to the morning of the 27th it was cold, with minimums of zero and -2° on the 23rd and 24th although the afternoon readings on the 26th were fairly high. It was much milder on the morning of the 27th, continuing so. The monthly mean was 2.2° below normal. Bright sunshine recorded A3% above normal and rain fell on only one day, but the snowfall exceeded the normal by 16 inches; 5 inches fell on the 4th and 11.6 inches during the easterly blizzard of the 19th-20th, the drifts crippling city traffic. A blizzard also occurred about 5 p.m. on the 5th lasting 30 minutes. There were 6 gales, the maximum velocity of 52 miles East occurring on the night of the 19th.

MARCH. Generally mild during the first 12 days with maximum readings of 42° and 41° on the 3rd and 5th; then, much colder on the 13th, temperature falling to 10° on the morning of the 14th. A slow recovery followed until temperature became normal on the 17th. Mild weather prevailed from the 20th to the 28th with much cloud and a maximum temperature on the 23rd of 51°. It became colder again on the 29th with rain, snow, a thunderstorm and low barometric readings. The last day of the month was decidedly cold, the minimum falling to 13°. The monthly mean was 2.9° above normal. Bright sunshine varied little from the usual and rainfall and snowfall were light, the deficiency in the latter amounting to 9 inches. Wind velocity on the 29th was 48 miles East. This was the only gale registered although there were many days with very strong winds, chiefly from the Northwest.

APRIL. Temperature gradually rose to a maximum of 60° on the 4th, but after the 6th cooler weather prevailed, the mean daily temperature on the 11th being 4° below the daily normal. It remained cool with the exception of the 13th, 14th and 19th, until the 23rd, when spring conditions set in, and daily temperatures then continued above normal to the end of the month. Maximum readings of 65°, 66° and 64° were noted on the 27th, 28th and 29th, and the monthly mean was 1.6° above normal. Gales from NE and NW were recorded on four days, and there were a number of heavy, cold NE and NW winds. The easterly gale of the 21st was severe, attended by rain and snow. Wind shifted to the West dropped about 11 p.m. Bright sunshine exceeded the average by 4% and rainfall varied little from normal being fairly well distributed. The heaviest fall was 0.83 inch on the 18th. On the 1st and 20th, an inch; and on the 21st, two inches of snow fell.

MAY. Cool and cloudy with many strong NE and NW winds and bright sunshine 4% below normal. Mean temperature went slightly beyond normal on only eight days, the 17th with the low maximum of 68° being the warmest day. From the 18th to the end of the month, except the 28th, it was decidedly cold, daily means to the 27th ranging from 1° to 12° below normals. A heavy frost occurred on the mornings of the 21st and 22nd with minimums of 30° and 32°. A large rainfall included heavy falls on the

3rd and 12th and an inch on the 9th. It became quite dark at 10:25 on the 25th and a smart shower of large hail, and snow turning to rain, accompanied by a squally North wind occurred. Gales were recorded on four days. General wind direction was SW.

JUNE. The first 9 days except the 6th were cool, particularly the 7th, 8th and 9th; a minimum of 39° being recorded on the latter morning. From the 10th to the 19th temperatures were generally normal, but were much higher from the 20th to the 27th showing maximum readings of over 80° on four days. It was much colder on the night of the 29th with blustery NW winds, and the last day of the month showed a mean temperature 8° below normal. No gales, but a number of strong NE and NW winds were recorded, the general wind direction being East. Bright sunshine was about normal, and rainfall an inch below. This was fairly well distributed, seven thunderstorms contributing considerably to the total.

JULY. Began with cool weather on the 1st and temperature gradually rose to maximums of 85° and 84° on the 11th and 12th. Cool nights and mornings prevailed from the 14th to the 20th with daily means much below normals. Maximum on the 15th touched 80° but the minimum fell to 48°. From the 21st, warm and cool waves followed one another. Maximums of 88° were noted on the 23rd and 29th and the daily mean on the 31st was 5° below normal. The monthly mean was 67°, just a little below normal. Numerous thunderstorms contributed largely to the total rainfall which was 1.1 inches above normal. On the 13th, 0.54 inch fell and 1.31 inches on the 24th. The thunderstorm on the 24th was particularly severe. It began at 1.15 p.m. with a sudden 50 mile SW squall and large hail fell, lasting to 1.45 p.m. This was followed by other storms, one during the afternoon and again at 9.30 p.m. Bright sunshine was 8% above normal. A very beautiful, well-defined, double rainbow was observed on the 1st at 5.45 p.m.

AUGUST. Mean temperature was slightly above normal, cool weather prevailing for the first three days, and again from the 10th to the 19th, excepting the 11th, which was 3° above normal. Maximums of 85° and 83° were noted on the 6th and 8th and vapour tension readings were very high on the 4th, 5th

and 6th. On this latter day at 8 p.m. a reading of 0.82 inch was noted. It was warm from the 22nd on, with maximum readings on the 27th, 30th and 31st of 88°, 85° and 90° and with very high vapour tension readings on the afternoon of the latter day. There were many thunderstorms. Rain was recorded on almost every day from the 4th to the 12th, with falls of over half an inch on the 4th, 6th, 9th, 10th and 22nd. Thick fogs were noted on the nights of the 3rd, 4th and 22nd. There were many bright days, sunshine showing an excess of 4%. Prevailing wind direction was South-west.

SEPTEMBER. Remarkable for the heavy rainfall. Twelve days gave a total 1.1 inches above normal, and the 28th, 29th and 30th recorded 2.32 inches of which the 28th contributed 1.4 inches commencing at 12h.40m. No rain fell from the 13th to the 19th or from the 23rd to the 27th. The mean temperature was well below normal. Becoming quite cool on the 1st, it continued up to the 11th, minimums on the 10th and 11th being 41° and 40°, the daily mean on the former being 14° below normal of that day. From the 12th to the 28th temperature was generally above normal, but the 29th and 30th were very cool, midnight of the 30th showing only 39°. The highest maximum for the month was only 78° on the 1st. Much cloudy weather prevailed, and strong NW and W winds were recorded on the 5th, 6th and 30th and E winds on the 25th. An aurora, Class II to IV was observed on the 23rd at 8.30 p.m. increasing in brilliancy with arch and streamers. There were rapid pulsations at midnight, the brightness diminishing somewhat.

OCTOBER. A warm, pleasant month with a mean temperature 4° above normal. The first week, except the 1st day, was warm with a maximum on the 5th of 72°. The 8th, 9th and 10th were much cooler, a minimum of 36° being recorded on the 9th. Warm, pleasant weather prevailed from the 11th to the end of the month, excepting the 20th, 21st and 22nd, and there was a marked absence of cloud. The minimum on the 21st fell to 31° and heavy white frost was noted. Maximums of 65° or over were recorded on the 6th, 11th, 12th, 25th, 26th, 27th and 28th. Bright sunshine exceeded the normal by 18%, and rainfall was unusually light with only five days' fall. The heaviest was on the 5th when the gauge showed 0.42 inch. From the 8th to the end of the

month there was only one day of rain. Winds were very light with general direction West.

NOVEMBER. Mean temperature was 3° above normal. Mild weather prevailed for the first half of the month with maximum temperatures of 66° on the 1st and 6th and 68° on the 7th, but, heavy white frost was noted on the mornings of the 5th and 10th, the minimum on the latter morning falling to 26°. It became quite wintry on the afternoon of the 16th with strong NW winds and minimums of 15° and 13° were noted on the 17th and 18th. Mild weather again prevailed from the 19th to the 27th with a maximum on the 20th of 53°. The last three days of the month were much colder. Bright sunshine was 10% above normal. Snowfall and rainfall were unusually light. A miniature blizzard on the 16th at 5.30 p.m. lasting a short time, caused some snow drift. Wind velocity on the 7th and 16th exceeded 32 miles from the NW and the general direction for the month was SW.

DECEMBER. Cool. During the first nine days mild weather generally prevailed with maximum readings on the 7th, 8th and 9th of 45°, 52° and 53°. From the 10th to the 17th, cold and warm waves followed one another, minimums of 12° and 15° being recorded on the 14th and 15th. Regular winter weather set in on the 18th and it continued cold with the exception of two days to the end of the month. The coldest days were the 21st, 25th and 28th, the minimum on the 21st falling to -2°. Monthly sunshine was about normal, but there was a large percentage of cloudy weather for the first 19 days. Of four days rain, 0.82 inch fell on the 8th, and the heaviest snowfall was 4 inches on the 12th. Otherwise light falls were noted every few days but precipitation was not up to normal. General wind direction was W with only two gales recorded, but there were a number of heavy E and NW winds and during the latter part of the month, winds were persistently strong making the cold very penetrating. During the storm of the 13th, the barometer fell to 28.687 inches. At the end of the month 2½ inches of snow remained on the ground.

January, 1924.

<i>Results of Observations Taken During the Month</i>		Mean for 70 years.
BAROMETER — Mean reading, 32 F. inches	29.687	29.647
“ Highest on 2nd at 6.02h.	30.273	30.271
“ Lowest on 11th at 6.04h.	28.763	28.913
“ Range	1.510	1.358
TEMPERATURE — Highest (S) (9th, 16th)	43.2	44.9
“ Lowest (S) (27th)	-6.2	-6.8
“ Range for the month (S),	49.4	51.7
“ Mean from max. and min. (S)	23.4	*21.9
“ Mean from 24 hourly observations (P)	23.2	+21.8
“ Mean of highest readings (P)	30.0	
“ Mean of lowest readings (P)	15.7	
“ Mean daily range (P)	14.3	
“ Warmest day (P) (10th)	37.7	
“ Coldest day (P) (21st)	0.0	
“ Range between warmest and coldest (P)	37.7	
“ Highest solar (black bulb in vacuum (23rd)	96.7	
“ Lowest (radiation) (27th)	-7.6	
“ Monthly range	104.3	
HUMIDITY — Mean	73	83
RAINFALL — Total (inches)	2.35	1.14
“ Heaviest fall (16th) “	1.00	
“ No. of days on which rain fell	4	4.9
SNOWFALL — Total fall inches	25.4	17.3
“ Heaviest fall (3rd) “	6.2	
“ No. of days on which snow fell	16	14.2
CLOUD — Mean amount of (0-10)	.73	.74

*1840—1898 +1881—1908 (S) Stevenson (P) Photographic

Results of Observations—January, (Continued)

WINDS — Mean velocity	17.6 mile
“ Highest velocity on the 6th at 17 hrs. from southwest	46.0 “
“ Highest daily average velocity (22nd)	30.5 “
“ Lowest “ “ “ (13th)	8.9 “
“ Days on which gales occurred	12

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
	22	20	24	42	33	207	301	88	7	744
No. of miles registered from each direction.	190	249	299	675	536	3839	5975	1316	—	13079

Rain on 10th, 11th, 16th, 30th. Snow on 1st, 2nd, 3rd, 4th, 5th, 6th, 13th, 16th, 19th, 21st, 22nd, 24th, 25th, 26th, 30th, 31st. Fog on 10th, 11th. Lunar halo on 15th, 17th, 21st. Clear days 1. Cloudy days 14.

Extreme Readings

DURING 85 YEARS.

Barometer — Highest reading, 1866 (8th)	30.940 inch.
“ Lowest reading, 1870 (2nd)	28.166 “
Temperature — Highest, 1874 (4th), 1878 (1st)	57.5°
“ Lowest 1859 (10th)	-26.5°
“ Highest daily mean (during 44 yrs) 1906 (22nd),	49.6°
“ Lowest daily mean, (during 44 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, 1918-20	0 “
“ Greatest fall for one day 1843 (31st)	2.50 “
“ Greatest No. of days rain fell, 1890,	14
Snowfall — Greatest fall, 1871	43.6 in.
“ Least fall, 1916,	3.1
“ Greatest for one day, 1873 (5th)	15.3
“ Greatest No. days snow fell, 1861-71-93	23
“ Least No. days snow fell, 1847	5

February, 1924.

Results of Observations Taken During the Month			Mean for 70 years.
BAROMETER	— Mean reading, 32 F. inches	29.704	29.638
"	Highest on 19th. at 3h.	30.321	30.226
"	Lowest on 5th at 18.04h.	29.090	28.945
"	Range	1.231	1.281
TEMPERATURE	— Highest (S) (27th)	38.8	44.3
"	Lowest (S) (24th)	-2.0	-7.1
"	Range for the month (S),	40.8	51.4
"	Mean from max. and min. (S)	20.2	*22.5
"	Mean from 24 hourly observations (P)	20.5	†21.0
"	Mean of highest readings (P)	27.0	
"	Mean of lowest readings (P)	12.9	
"	Mean daily range (P)	14.1	
"	Warmest day (P) (1st)	32.0	
"	Coldest day (P) (23rd)	7.0	
"	Range between warmest and coldest (P)	24.4	
"	Highest solar (black bulb in vacuum (18th)	115.0	
"	Lowest (radiation) (24th)	-7.8	
"	Monthly range	122.8	
HUMIDITY	— Mean	74	81
RAINFALL	— Total (inches)	0.03	0.93
"	Heaviest fall (2nd)	0.03	
"	No. of days on which rain fell	1	4.7
SNOWFALL	— Total fall (inches)	32.4	16.5
"	Heaviest fall (20th)	9.6	
"	No. of days on which snow fell	17	12.4
CLOUD	— Mean amount of (0-10)	.63	.76

*1840—1898 †1881—1908 (S) Stevenson (P) Photographic

Results of Observations—February, (Continued)

WINDS	— Mean velocity	14.0 miles
"	Highest velocity on the 19th at 23 hrs. from east	52.0 "
"	Highest daily average velocity (19th)	38.7 "
"	Lowest " " (26th)	8 "
"	Days on which gales occurred	6

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
	110	126	61	6	7	79	153	118	36	696
No. of miles registered from each direction.	998	2168	2013	64	60	897	2050	1498	—	9748

Rain on 2nd. Snow on 2nd, 3rd, 4th, 5th, 6th, 7th, 9th, 10th, 11th, 12th, 14th, 15th, 17th, 19th, 20th, 21st, 22nd. Solar halo on 13th. Lunar halo on 18th. Clear days 4. Cloudy days 14.

Extreme Readings

DURING 85 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 44 yrs) 1906 (24th),	44.1°
"	Lowest daily mean, (during 44 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 one day 1855 (13th)	1.71 "
"	Greatest No. of days rain fell, 1857,	11
Snowfall	— Greatest fall, 1846	46.1 in.
"	Least fall, 1851,	2.4
"	Greatest for one day, 1863 (5th)	16.0
"	Greatest No. days snow fell, 1843	21
"	Least No. days snow fell, 1851	4

March, 1924.

Results of Observations Taken During the Month		Mean for 70 years.	
BAROMETER	— Mean reading, 32 F. inches	29.478	29.609
	“ Highest on 31st, at 21.49h.	29.877	30.120
	“ Lowest on 29th at 18.08h.	28.783	28.919
	“ Range	1.094	1.210
TEMPERATURE	— Highest (S) (23rd)	50.8	52.1
	“ Lowest (S) (14th)	10.4	-2.6
	“ Range for the month (S)	40.4	54.7
	“ Mean from max. and min. (S)	31.6	*28.7
	“ Mean from 24 hourly observations (P)	31.4	†29.1
	“ Mean of highest readings (P)	37.0	
	“ Mean of lowest readings (P)	25.9	
	“ Mean daily range (P)	11.1	
	“ Warmest day (P) (23rd)	41.2	
	“ Coldest day (P) (14th)	18.8	
“	Range between warmest and coldest (P)	22.4	
	Highest solar (black bulb in vacuum (24th)	109.5	
	Lowest (radiation) (14th)	8.4	
	Monthly range	101.1	
	HUMIDITY — Mean	69	78
RAINFALL	— Total (inches)	0.51	1.50
	“ Heaviest fall (29th)	0.27	
	“ No. of days on which rain fell	5	6.7
SNOWFALL	— Total fall inches	2.7	11.5
	“ Heaviest fall (7th)	0.8	
	“ No. of days on which snow fell	5	10.4
CLOUD	— Mean amount of (0-10)	.63	.67

*1840—1808 †1881—1908 (S) Stevenson (P) Photographic

Results of Observations—March, (Continued)

WINDS	— Mean velocity	14.0 miles
“	Highest velocity on the 29th at 11 hrs. from east	48.0 “
“	Highest daily average velocity (29th)	32.1 “
“	Lowest “ “ “ (1st)	5.7 “
“	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
	107	79	110	7	12	76	87	254	12	744
No. of miles registered from each direction.	1059	1160	2128	79	84	992	984	3929	—	10415

Rain on 4th, 10th, 26th, 27th, 29th. Snow on 2nd, 7th, 10th, 26th, 30th. Fog on 4th. Thunderstorm on 29th. Hail on 29th. Solar halo on 20th. Lunar halo on 20th. Clear days 4. Cloudy days 12.

Extreme Readings

DURING 85 YEARS.

Barometer	— Highest reading, 1906 (24th)	30.508 inch.
“	Lowest reading, 1859 (19th)	28.286 “
Temperature	— Highest, 1910 (28th)	75.2°
“	Lowest 1868 (3rd)	-15.6°
“	Highest daily mean (during 44 yrs) 1910 (30th),	58.1°
	Lowest daily mean, (during 44 yrs) 1885 (17th)	-0.4°
“	Highest monthly mean, 1903	38.9°
	Lowest monthly mean, 1885	18.5°
	Rainfall — Greatest fall, 1859	4.05 in.
“	Least fall, 1856-1889	0 “
“	Greatest fall for one day 1881 (19th)	1.72 “
“	Greatest No. of days rain fell, 1878, 1921	17
“	Least number days rain fell, 1856-89	0
Snowfall	— Greatest fall, 1870	62.4 in.
	“ Least fall, 1858, 1903	0.2
	“ Greatest for one day, 1876 (28th)	16.2
	“ Greatest No. days snow fell, 1877	21
“	Least No. days snow fell, 1895-1898	1

April, 1924.

Results of Observations Taken During the Month		Mean for 70 years.	
BAROMETER	— Mean reading, 32 F. inches	29.583	29.600
"	Highest on 26th, at 11h.	30.099	30.073
"	Lowest on 22nd at 3.38h.	28.934	29.040
"	Range	1.165	1.033
TEMPERATURE	— Highest (S) (28th)	66.2	68.3
"	Lowest (S) (1st)	19.2	19.6
"	Range for the month (S),	47.0	48.7
"	Mean from max. and min. (S)	42.8	*41.2
"	Mean from 24 hourly observations (P)	42.5	†42.1
"	Mean of highest readings (P)	51.0	
"	Mean of lowest readings (P)	34.6	
"	Mean daily range (P)	16.4	
"	Warmest day (P) (29th)	53.2	
"	Coldest day (P) (1st)	28.0	
"	Range between warmest and coldest (P)	25.2	
"	Highest solar (black bulb in vacuum (28th)	127.8	
"	Lowest (radiation) (1st)	17.0	
"	Monthly range	110.8	
HUMIDITY	— Mean	65	70
RAINFALL	— Total (inches)	2.20	2.15
"	Heaviest fall (18th)	0.83	
"	No. of days on which rain fell	9	9.9
SNOWFALL	— Total fall (inches)	3.5	2.5
"	Heaviest fall (21st)	1.5	
"	No. of days on which snow fell	3	3.5
CLOUD	— Mean amount of (0-10)	.54	.58

*1840—1898 †1881—1908 (S) Stevenson (P) Photographic

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Results of Observations—April, (Continued)

WINDS	— Mean velocity	12.6 miles
"	Highest velocity on the 20th at 22 hrs. from east	36.0 "
"	Highest daily average velocity (17th)	32.0 "
"	Lowest " " " (12th)	6.0 "
"	Days on which gales occurred	4

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
	53	66	163	35	19	146	105	132	1	720
No. of miles registered from each direction.	497	719	2618	194	170	1560	1108	2203	—	9069

Rain on 5th, 6th, 9th, 10th, 13th, 17th, 18th, 21st, 30th. Snow on 1st, 20th, 21st. Lunar halo on 12th. Thunderstorm on 17th. Clear days 5. Cloudy days 4.

Extreme Readings

DURING 85 YEARS.

Barometer	— Highest reading, 1897 (20th)	30.308 inch
"	Lowest reading, 1863 (2nd), 1887 (28th)	28.704 "
Temperature	— Highest, 1842 (22nd)	89.8°
"	Lowest 1923 (1st)	5.2°
"	Highest daily mean (during 44 yrs) 1915 (25th),	70.4°
"	Lowest daily mean, (during 44 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 one day 1850 (3rd)	2.35 "
"	Greatest No. 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 one day, 1901 (20th)	8.3
"	Greatest No. days snow fell, 1857	11
"	Least No. days snow fell, 1878-95-1900	0

May, 1924.

<i>Results of Observations Taken During the Month</i>		Mean for 70 years.
BAROMETER — Mean reading, 32 F. inches	29.434	29.577
“ Highest on 10th. at 10.23h.	29.737	29.967
“ Lowest on 24th at 8.18h.	28.906	29.153
“ Range	0.831	0.814
TEMPERATURE—Highest (S) (28th)	69.5	77.9
“ Lowest (S) (21st)	30.3	30.9
“ Range for the month (S),	39.2	47.9
“ Mean from max. and min. (S)	50.1	*52.4
“ Mean from 24 hourly observations (P)	49.7	†53.4
“ Mean of highest readings (P)	58.9	
“ Mean of lowest readings (P)	41.4	
“ Mean daily range (P)	17.5	
“ Warmest day (P) (28th)	58.7	
“ Coldest day (P) (19th)	40.9	
“ Range between warmest and coldest (P)	17.8	
“ Mean of the dew point	39	
“ Highest solar (black bulb in vacuum (28th)	131.0	
“ Lowest (radiation) (21st)	25.5	
“ Monthly range	105.5	
FORCE OF VAPOUR — Mean	0.244	0.280
HUMIDITY — Mean	68	70
RAINFALL — Total (inches)	4.41	2.97
“ Heaviest fall (9th)	1.02	
“ No. of days on which rain fell	18	12.4
SNOWFALL — Total fall inches	T	0.1
“ No. of days on which snow fell	1	0.4
CLOUD — Mean amount of (0-10)	.65	.57
*1840—1898 †1881—1908 (S) Stevenson (P) Photographic		

Results of Observations—May, (Continued)

WINDS — Mean velocity									13.6 miles	
“ Highest velocity on the 9th at 2 hrs. from northeast									36.0 “	
“ Highest daily average velocity (8h)									20.2 “	
“ Lowest “ “ “ (10th)									5.7 “	
“ Days on which gales occurred									4	
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
	13	115	113	17	26	167	140	147	6	744
No. of miles registered from each direction.	98	1981	1309	129	228	1851	1912	2594	—	10102

Rain on 2nd, 3rd, 4th, 5th, 6th, 8th, 9th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 23rd, 24th, 25th, 27th. Thunderstorms on 3rd, 5th, 6th, 18th, 25th. Fog on 9th, 10th, 14th, 27th, 28th. Heavy dew on 16th. Hail on 18th, 25th. Hoar frost on 21st, 22nd. Clear days 1. Cloudy days 10.

Extreme Readings

DURING 85 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 44 yrs) 1895 (30th),	80.9°
“ Lowest daily mean, (during 44 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 one day 1894 (21st)	2.70 “
“ Greatest No. of days rain fell, 1890	23
“ Least number days rain fell, 1920	4
Snowfall — Greatest fall, 1875	3.1 in.
“ Least fall, 1910, 1913 to 1922, 1924	0
“ Greatest for one day, 1875 (1st)	3.0
“ Greatest No. days snow fell, 1905	5

June, 1924.

<i>Results of Observations Taken During the Month</i>		Mean for 70 years.	
BAROMETER — Mean reading, 32 F. inches	29.531	29.572	
“ Highest on 10th. at 7.18h.	29.759	29.909	
“ Lowest on 29th at 8.56h.	29.095	29.165	
“ Range	0.664	0.744	
TEMPERATURE —Highest (S) (22nd)	82.4	86.4	
“ Lowest (S) (9th)	39.4	40.1	
“ Range for the month (S),	43.0	46.3	
“ Mean from max. and min. (S)	62.9	*62.4	
“ Mean from 24 hourly observations (P)	62.9	†64.0	
“ Mean of highest readings (P)	73.8		
“ Mean of lowest readings (P)	52.7		
“ Mean daily range (P)	21.1		
“ Warmest day (P) (21st)	71.7		
“ Coldest day (P) (8th)	51.2		
“ Range between warmest and coldest (P)	20.5		
“ Mean of the dew point	52		
“ Highest solar (black bulb in vacuum) (22nd)	140.3		
“ Lowest (radiation) (9th)	35.0		
“ Monthly range	105.3		
FORCE OF VAPOUR — Mean	0.395	0.418	
HUMIDITY — Mean	70	73	
RAINFALL — Total (inches)	1.74	2.76	
“ Heaviest fall (23rd) “	0.39		
“ No. of days on which rain fell	15	11.7	
CLOUD — Mean amount of (0-10)	.49	.53	

*1840—1808 †1881—1908 (S) Stevenson (P) Photographic

Results of Observations—June, (Continued)

WINDS — Mean velocity	8.3 miles
“ Highest velocity on the 6th at 17 hrs. from W. and 29th at 15 hrs. from NW.	27.0 “
“ Highest daily average velocity (29th)	15.7 “
“ Lowest “ “ “ (1st)	9.0 “
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
	53	103	141	44	50	135	113	72	9	720
No. of miles registered from each direction.	388	969	1218	245	327	1089	852	881	—	5969

Rain on 2nd, 3rd, 4th, 11th, 13th, 16th, 18th, 20th, 21st, 23rd, 24th, 25th, 27th, 28th, 30th. Thunderstorms on 2nd, 18th, 20th, 23rd, 27th, 28th, 30th. Fog on 29th. Heavy dew on 5th, 9th, 14th. Clear days 5. Cloudy days 5.

Extreme Readings

DURING 85 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 44 yrs) 1901 (27th),	82.0°
“ Lowest daily mean, (during 44 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 one day 1892 (19th)	2.42 “
“ Greatest No. of days rain fell, 1869	22
“ Least number days rain fell, 1864	5
Snowfall — Flurries on two days, 1859.	

July, 1924.

<i>Results of Observations Taken During the Month</i>		Mean for 70 years.	
BAROMETER	— Mean reading, 32 F. inches	29.598	29.585
"	Highest on 4th. at 9h.	29.865	29.889
"	Lowest on 25th at 1.56h.	29.200	29.420
"	Range	0.665	0.469
TEMPERATURE	— Highest (S) (23rd)	88.2	89.8
"	Lowest (S) (15th)	48.1	47.5
"	Range for the month (S),	40.1	42.3
"	Mean from max. and min. (S)	67.3	*67.8
"	Mean from 24 hourly observations (P)	67.0	+68.9
"	Mean of highest readings (P)	78.2	
"	Mean of lowest readings (P)	56.6	
"	Mean daily range (P)	21.6	
"	Warmest day (P) (23rd)	74.5	
"	Coldest day (P) (1st)	57.0	
"	Range between warmest and coldest (P)	17.5	
"	Mean of the dew point	56	
"	Highest solar (black bulb in vacuum) (23rd)	143.8	
"	Lowest (radiation) (2nd)	43.5	
"	Monthly range	100.3	
FORCE OF VAPOUR	— Mean	0.462	0.488
HUMIDITY	— Mean	71	72
RAINFALL	— Total (inches)	4.17	3.04
"	Heaviest fall (24th)	1.31	
"	No. of days on which rain fell	12	11.2
CLOUD	— Mean amount of (0-10)	.33	.49

*1840—1898 +1881—1908 (S) Stevenson (P) Photographic

Results of Observations—July, (Continued)

WINDS	— Mean velocity	8.2 miles
"	Highest velocity on the 17th at noon from northwest	26.0 "
"	Highest daily average velocity (10th)	15.5 "
"	Lowest " " " (3rd)	5.3 "
"	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.	E.	Total*
	82	82	89	25	55	179	111	117	4	744
No. of miles registered from each direction.	558	717	629	120	378	1374	723	1622	—	6121

Rain on 1st, 7th 8th, 10th, 13th, 16th, 22nd, 24th, 25th, 26th, 29th, 31st. Thunderstorms on 1st, 10th, 13th, 16th, 22nd, 24th, 28th, 29th. Fog on 7th, 8th. Hail on 24th. Clear days 12. Cloudy days 2.

Extreme Readings

DURING 85 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 44 yrs) 1911 (3rd),	91.3°
"	Lowest daily mean, (during 44 yrs) 1891 (7th)	56.4°
"	Highest monthly mean, 1921	77.9°
"	Lowest monthly mean, 1884	61.0°
Rainfall	— Greatest fall, 1841	8.15 in.
"	Least fall, 1916	0.36 "
"	Greatest fall for one day 1897 (27th)	3.88 "
"	Greatest No. of days rain fell, 1861-66-70-80, 1902-17.	16
"	Least number days rain fell, 1849	4

August, 1924.

Results of Observations Taken During the Month		Mean for 70 years.	
BAROMETER	— Mean reading, 32 F. inches	29.594	29.617
	“ Highest on 3rd. at 1.05h.	29.858	29.909
	“ Lowest on 7th at 0.45h.	29.260	29.257
	“ Range	0.598	0.652
TEMPERATURE	— Highest (S) (31st)	89.6	87.0
	“ Lowest (S) (19th)	47.7	45.7
	“ Range for the month (S),	41.9	41.3
	“ Mean from max. and min. (S)	66.9	*66.3
	“ Mean from 24 hourly observations (P)	66.4	+66.9
	“ Mean of highest readings (P)	76.7	
	“ Mean of lowest readings (P)	56.6	
	“ Mean daily range (P)	20.1	
	“ Warmest day (P) (31st)	76.0	
	“ Coldest day (P) (17th)	58.4	
	“ Range between warmest and coldest (P)	17.6	
	“ Mean of the dew point	58	
“ Highest solar (black bulb in vacuum (23rd)	142.0		
“ Lowest (radiation) (19th)	44.4		
“ Monthly range	97.6		
FORCE OF VAPOUR	— Mean	0.492	0.483
HUMIDITY	— Mean	75	74
RAINFALL	— Total (inches)	3.92	2.77
	“ Heaviest fall (6th)	0.85	
	“ No. of days on which rain fell	10	10.9
CLOUD	— Mean amount of (0-10)	.39	.49

*1840—1898 +1881—1908 (S) Stevenson (P) Photographic

Results of Observations—August, (Continued)

WINDS	— Mean velocity	7.3 miles
“	Highest velocity on the 27th at 15hrs from northwest	25.0 “
“	Highest daily average velocity (27th)	13.9 “
“	Lowest “ “ “ (13th)	4.4 “
“	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
		103	41	90	58	59	161	79	144	6
No. of miles registered from each direction.	680	300	712	340	313	1297	416	1372	—	5430

Rain on 4th 6th, 7th, 8th, 9th, 10th, 13th, 16th, 19th, 22nd. Thunderstorms on 4th, 6th, 8th, 10th, 13th, 22nd, 31st. Fogs on 4th, 6th, 22nd. Heavy dew on 2nd, 3rd, 8th, 11th, 12th, 14th, 15th, 16th, 19th, 22nd, 23rd, 26th, 29th, 31st. Aurora IV. on 31st. Clear days 9. Cloudy days 4.

Extreme Readings

DURING 85 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 44 yrs)	
“	1900 (8th), 1916 (21st)	84.8°
“	Lowest daily mean, (during 44 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 fall for one day 1905 (15th)	3.68 “
“	Greatest number of days rain fell, 1872	19
“	Least number days rainfall, 1876	0

September, 1924.

Results of Observations Taken During the Month		Mean for 70 years.	
BAROMETER	— Mean reading, 32 F. inches	29.677	29.667
"	Highest on 26th. at 9h.	30.073	30.037
"	Lowest on 8th at 9.40h.	29.237	29.187
"	Range	0.836	0.850
TEMPERATURE	— Highest (S) (1st)	81.4	82.7
"	Lowest (S) (30th)	38.4	35.7
"	Range for the month (S),	43.0	47.0
"	Mean from max. and min. (S)	57.0	*53.8
"	Mean from 24 hourly observations (P)	56.3	60.5
"	Mean of highest readings (P)	64.9	
"	Mean of lowest readings (P)	48.2	
"	Mean daily range (P)	16.7	
"	Warmest day (P) (1st)	68.5	
"	Coldest day (P) (30th)	43.0	
"	Range between warmest and coldest (P)	25.5	
"	Mean of the dew point	48	
"	Highest solar (black bulb in vacuum) (1st)	140.0	
"	Lowest (radiation) (24th)	36.4	
"	Monthly range	103.6	
FORCE OF VAPOUR	— Mean	0.345	0.393
HUMIDITY	— Mean	77	78
RAINFALL	— Total (inches)	4.23	3.18
"	Heaviest fall (28th)	1.38	
"	No. of days on which rain fell	12	11.4
CLOUD	— Mean amount of (0-10)	.55	.50

*1840—1898 †1881—1908 (S) Stevenson (P) Photographic

Results of Observations—September, (Continued)

WINDS	— Mean velocity	9.9 miles
"	Highest velocity on the 22nd at 11 hrs from west	28.0 "
"	Highest daily average velocity (5th)	16.8 "
"	Lowest " " " (18th)	4.9 "
"	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.	O.	Totals
	115	88	152	49	34	71	75	136	—	720
No. of miles registered from each direction.	888	730	1616	350	271	702	772	1781	—	7112

Rain on 2nd, 4th 5th, 8th, 9th, 12th, 20th, 21st, 22nd, 28th, 29th, 30th. Thunderstorm on 8th. Heavy Dew on 3rd, 4th, 7th, 11th, 17th, 19th, 26th, 27th, 28th. Aurora Class II on 23rd. Clear days 7. Cloudy days 10.

Extreme Readings

DURING 85 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 44 yrs) 1881, (6th)	81.3°
"	Lowest daily mean, (during 44 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 fall for one day 1843 (14th)	3.46 "
"	Greatest number of days rain fell, 1907	19
"	Least number days rain fell, 1840, 1844	4

October, 1924.

Results of Observations Taken During the Month

		Mean for 79 years
BAROMETER	— Mean reading, 32 F. inches	29.824
"	Highest on 9th, at 8.38h.	30.105
"	Lowest on 1st at 0.02h	29.426
"	Range	0.679
TEMPERATURE	— Highest (S) (5th)	72.4
"	Lowest (S) (21st)	31.0
"	Range for the month (S)	41.4
"	Mean from max. and min. (S)	50.6
"	Mean from 24 hourly observations (P)	49.8
"	Mean of highest readings (P)	59.9
"	Mean of lowest readings (P)	40.8
"	Mean daily range (P)	19.1
"	Warmest day (P) (5th)	62.3
"	Coldest day (P) (21st)	38.0
"	Range between warmest and coldest (P)	24.3
"	Mean of the dew point	41
"	Highest solar (black bulb in vacuum) (6th)	127.0
"	Lowest radiation (21st)	27.0
"	Monthly range	100.0
FORCE OF VAPOUR	— Mean	0.269
HUMIDITY	— Mean	76
RAINFALL	— Total (inches)	0.62
"	Heaviest fall (5th)	0.42
"	No. of days on which rain fell	5
SNOWFALL	— Total fall inches	0
"	No. of days on which snow fell	0
CLOUD	— Mean amount of (0-10)	.26

*1840—1898 †1881—1908 (S) Stevenson (P) Photographic

Results of Observations—October, (Continued)

WINDS	— Mean velocity	7.4 miles
"	Highest velocity on the 1st. at 12 and 13 hrs from west	30.0 "
"	Highest daily average velocity (1st)	21.9 "
"	Lowest " " " (11th)	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.	E.	Totals
	147	86	89	34	35	114	155	81	3	744
No. of miles registered from each direction.	910	681	629	187	180	779	1382	773	—	5521

Rain on 1st, 4th, 5th, 7th, 18th. Thunderstorms on 5th. Fog on 25th. Heavy Dew on 2nd, 3rd, 4th, 11th, 12th, 14th, 15th, 16th, 19th, 28th, 29th, 31st. Hoar Frost on 9th, 10th, 13th, 18th, 21st, 23rd, 25th, 26th, 30th. Clear days 12. Cloudy days 0.

Extreme Readings

DURING 85 YEARS.

Barometer	— Highest reading, 1817 (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 44 yrs) 1897, (15th)	71.0°
"	Lowest daily mean, (during 44 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 one day 1849 (6th)	3.16 "
"	Greatest number of days rain fell, 1864	22
"	Least number days rain fell, 1924	5
Snowfall	— Greatest fall, 1844	12.0 in.
"	Least fall, 1916-18-19-21-22-24	0 "
"	Greatest for one day, 1875 (17th)	3.3
"	Greatest No. days snow fell, 1869	7

November, 1924.

Results of Observations Taken During the Month		Mean for 70 years.	
BAROMETER	Mean reading, 32 F. inches	29.607	29.627
"	Highest on 8th, at 18.02h.	30.163	30.169
"	Lowest on 22nd at 12.18h	28.993	28.975
"	Range	1.170	1.194
TEMPERATURE	Highest (S) (7th)	68.3	57.9
"	Lowest (S) (18th)	12.8	31.5
"	Range for the month (S),	55.5	44.4
"	Mean from max. and min. (S)	39.0	*36.0
"	Mean from 24 hourly observations (P)	38.5	37.1
"	Mean of highest readings (P)	45.1	
"	Mean of lowest readings (P)	31.1	
"	Mean daily range (P)	14.0	
"	Warmest day (P) (6th)	57.8	
"	Coldest day (P) (17th)	20.4	
"	Range between warmest and coldest (P)	37.4	
"	Highest solar (black bulb in vacuum (1st)	113.8	
"	Lowest (radiation) (18th)	8.0	
"	Monthly range	105.8	
HUMIDITY	Mean	72	80
RAINFALL	Total (inches)	0.84	2.49
"	Heaviest fall (16th)	0.39	
"	No. of days on which rain fell	8	10.3
SNOWFALL	Total fall inches	1.1	4.6
"	Heaviest fall (11th)	0.6	
"	No. of days on which snow fell	3	7.3
CLOUD	Mean amount of (0-10)	.59	.74

*1840-1898 †1881-1908 (S) Stevenson (P) Photographic

Results of Observations - November, (Continued)

WINDS	Mean velocity		12 miles							
	"	Highest velocity on the 7th at 20hrs from northwest	39.0	"						
"	Highest daily average velocity (16th)	21.2	"							
"	Lowest " " " (10th)	5.4	"							
"	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
	64	18	37	30	33	247	188	102	1	720
No. of miles registered from each direction.	484	146	430	358	229	3430	2563	1665	—	9305

Rain on 11th 12th, 13th, 14th, 16th, 21st, 22nd, 23rd. Thunderstorm on 11th. Snow 16th, 17th, 28th. Hail on 16th. Fog on 21st. Clear days 3. Cloudy days 7.

Extreme Readings

DURING 85 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 44 yrs) 1882, (11th)	58.0°
"	Lowest daily mean, (during 44 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 one day 1861 (2nd)	3.13 "
"	Greatest number of days rain fell, 1877	16
"	Least number days rainfall, 1904	4
Snowfall	Greatest fall, 1873	19.6 in.
"	Least fall, 1847, 1850	Not measurable
"	Greatest for one day, 1873 (27th)	9.5
"	Greatest No. days snow fell, 1869-73-92	18
"	Least No. days snow fell, 1850, 1899	1

December, 1924.

Results of Observations Taken During the Month		Mean for 70 years.	
BAROMETER	— Mean reading, 32 F. inches	29.710	29.644
"	— Highest on 21st. at 6h.	30.320	30.226
"	— Lowest on 13th at 12.21h.	28.687	28.936
"	— Range	1.633	1.290
TEMPERATURE	— Highest (S) (9th)	53.4	47.5
"	— Lowest (S) (21st)	-2.0	-2.3
"	— Range for the month (S),	55.4	49.8
"	— Mean from max. and min. (S)	23.9	*26.2
"	— Mean from 24 hourly observations (P)	23.8	†26.6
"	— Mean of highest readings (P)	30.0	
"	— Mean of lowest readings (P)	17.0	
"	— Mean daily range (P)	13.0	
"	— Warmest day (P) (8th)	44.5	
"	— Coldest day (P) (28th)	6.1	
"	— Range between warmest and coldest (P)	38.4	
"	— Highest solar (black bulb in vacuum (22nd) & (26th)	88.0	
"	— Lowest (radiation) (21st)	-3.0	
"	— Monthly range	91.0	
HUMIDITY	— Mean	75	82
RAINFALL	— Total (inches)	1.19	1.53
"	— Heaviest fall (8th)	0.82	
"	— No. of days on which rain fell	4	6.3
SNOWFALL	— Total fall (inches)	11.5	13.0
"	— Heaviest fall (12th)	4.0	
"	— No. of days on which snow fell	12	13.1
CLOUD	— Mean amount of (0-10)	.73	.77

*1840—1898 †1881—1908 (S) Stevenson (P) Photographic

Results of Observations -December, (Continued)

WINDS	— Mean velocity	14.2 miles
"	— Highest velocity on the 20th at 17hrs from west	35.0 "
"	— Highest daily average velocity (26th)	24.7 "
"	— Lowest " " " (7th)	5.4 "
"	— 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.	Total
	80	83	57	32	16	102	305	67	2	744
No. of miles registered from each direction.	647	578	907	480	163	1522	5453	830	—	10580

Rain on 5th 8th, 12th, 17th. Snow on 9th, 11th, 12th, 14th, 19th, 20th, 21st, 23rd, 24th, 27th, 29th, 31st. Fog on 8th, Clear days 3. Cloudy days 18.

Extreme Readings

DURING 85 YEARS.

Barometer	— Highest reading, 1887 (1st)	30.594 inch.
"	— Lowest reading, 1856 (14th), 1859 (9th)	28.459 "
Temperature	— Highest, 1875 (31st).	61.0°
"	— Lowest 1871 (21st)	-21.0°
"	— Highest daily mean (during 44 yrs) 1911 (11th),	51.9°
"	— Lowest daily mean, (during 44 yrs) 1917 (29th)	-9.7°
"	— Highest monthly mean, 1923	36.1°
"	— Lowest monthly mean, 1876	17.2°
Rainfall	— Greatest fall, 1841	6.60 in.
"	— Least fall, 1840-45-76	0 "
"	— Greatest fall for one day 1870 (6th)	1.95 "
"	— Greatest No. of days rain fell, 1889, 1911	14
"	— Least number days rainfall, 1876	0
Snowfall	— Greatest fall, 1872	38.0 in.
"	— Least fall, 1877	0.3 "
"	— Greatest for one day, 1898 (4-5)	16.0
"	— Greatest No. days snow fell, 1872	24
"	— Least No. days snow fell, 1895	3

Summary of Observations, 1924.

<i>Results of Observations Taken During the Year</i>		Mean for 70 years
READINGS OF BAROMETER IN INCHES.		
Mean of the year	29.619	29.619
Highest monthly mean, October	29.824	
Lowest " May	29.434	
Highest reading, February 19th	30.321	30.371
Lowest " December 13th	28.087	28.707
Range	1.634	1.664
THERMOMETER, FAHRENHEIT.		
Highest monthly mean temperature, July	67.3	
Lowest " " " February	20.2	
Highest daily mean temperature, August 31st	76.0	
Lowest " " " January 21st	0.0	
Highest temperature, August 31st	89.6	91.2
Lowest " January 27th	-6.2	-12.0
Range for the year	95.8	103.2
Mean from max. and min.	44.6	*44.2
Mean from 24 hourly observations	44.3	†45.0
Mean humidity	72	77
Highest solar (black bulb in vacuum) July 23rd	143.8	
Lowest (radiation) on February 24th	-7.8	
Yearly range	151.6	
Total fall of rain inches	26.21	26.86
Greatest monthly rainfall, May "	4.41	
Least " " February "	0.03	
Greatest rainfall in one day, Sept. 28th "	1.38	
Number of days rain fell	103	112.9
Total fall of snow inches	76.6	66.1
Greatest monthly snowfall, February "	32.4	
Greatest snowfall in 24 hrs. Feb. 20th "	9.6	
Number of days on which snow fell	57	62.9
Mean amount of cloud (0-10)	.54	.62
*1840-1898		†1881-1903

Wind Summary, 1924.

Total mileage for year	102,451
Greatest monthly mileage, January	13,079
Greatest mileage in 24 hours, February 19th	38.7
Greatest mileage in 1 hour (February 19th at 23hrs.) from E.	52
Number of gales	31
Average velocity for year	11.7
Prevailing direction, west. Mileage, 24,190. Total hours, 1,812	

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
1899-00	December 28th	April 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*
1921-22	" 22nd	March 10th	52*
1922-23	" 29th	April 9th	87*
1923-24	January 26th	March 28th	60
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 85 Years.

Readings of the barometer, in inches.

Highest yearly mean, 1849,	29.668
Lowest " " 1864,	29.560
Highest monthly mean, October 1924.	29.824
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 44 years) July 3rd, 1911	91.3
Lowest daily mean temperature (during 44 years) Jan. 13th, 1914	- 15.2
Highest monthly mean, July, 1921,	77.9
Lowest " " February, 1875,	10.2
Highest yearly " 1921,	49.9
Lowest " " 1875,	40.8

Rainfall, in inches.

Greatest fall in one day, July 27th, 1897,	3.88
Greatest rainfall in a month, September, 1843,	9.76
Greatest rainfall in a year, 1843,	43.56
Least " " " " 1874,	17.57
Greatest number of rainy days in a month, May, 1890,	23
Greatest number of rainy days in a year, 1890,	145
Least " " " " " " 1841,	80

Absolute Extremes—(Continued.)

DURING 85 YEARS.

Snowfall in Inches.

Greatest fall in one day, 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	1924
Latest snow.....	June 4, 1859	April 21st
Earliest snow.....	Sept. 25, 1860	Nov. 16th
Latest hoar frost.....	June 20, 1862	May 21st
Earliest hoar frost.....	Aug. 26, 1863	Oct. 9th
Earliest thunder & lightning	Jan. 12, 1898	March 29th
Latest thunder and lightning	Dec. 23, 1871	Nov. 11th

TOTAL AMOUNT OF SUNSHINE RECORDED ON EACH DAY—1924.

Month.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
January.	3.0	0.0	0.9	0.7	5.2	0.4	0.3	0.0	4.8	0.0	1.6	0.2	0.0	7.9	2.9	0.0	3.6
February.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2	4.7	4.2	4.2	3.2	9.0	3.2	4.5	8.9	T
March.	6.6	4.8	9.2	0.0	0.0	0.0	7.5	0.8	0.0	0.0	0.0	2.3	10.5	10.4	7.6	2.6	9.3
April.	0.0	6.0	10.7	7.9	8.3	5.8	11.5	11.7	0.0	7.7	8.1	1.8	4.9	11.1	6.7	8.6	0.0
May.	12.3	10.0	1.7	8.3	4.1	2.0	9.1	0.0	0.0	9.3	9.7	0.0	3.5	0.0	7.3	9.0	8.4
June.	10.1	4.6	5.7	3.2	13.0	8.8	13.1	0.0	14.1	10.5	1.3	8.2	8.9	14.5	2.3	14.0	9.3
July.	9.8	13.9	13.1	12.6	11.3	10.0	T	6.1	6.9	11.6	14.3	10.6	11.9	12.2	13.9	2.0	12.6
August.	8.6	13.3	9.2	0.7	12.3	5.3	10.9	11.6	6.0	11.6	9.9	12.5	1.5	13.2	11.2	0.1	5.5
September.	9.7	5.1	12.0	11.4	10.2	9.5	9.7	6.9	0.0	1.1	9.6	6.6	8.4	3.8	7.0	6.9	7.2
October.	3.3	9.8	9.2	3.3	6.4	8.4	0.6	10.0	9.0	8.8	8.8	9.5	7.6	8.2	8.5	5.6	6.9
November.	8.3	0.7	0.4	1.4	2.3	4.2	T	3.9	5.5	6.6	6.5	7.9	1.9	4.1	6.9	2.9	8.4
December.	6.8	1.1	0.0	7.0	0.0	0.0	T	0.0	0.0	2.4	0.0	0.0	1.6	5.5	0.0	0.5	0.0

TOTAL AMOUNT OF SUNSHINE RECORDED ON EACH DAY—1924. (Continued).

Month.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Monthly Total	Monthly Percentage.
January.	1.5	0.0	6.8	1.6	0.0	6.1	1.0	0.0	6.4	5.5	0.0	0.0	1.0	0.0	61.4	21.3
February.	9.6	0.0	0.0	0.0	5.8	9.9	8.5	8.3	9.7	9.4	4.2	5.9			121.4	40
March.	9.6	4.0	8.0	0.0	0.0	10.4	7.5	5.5	0.0	5.2	10.0	0.0	0.0	10.3	204.1	50.8
April.	T	12.8	4.0	0.4	S	11.7	10.4	10.1	13.2	13.3	11.0	6.4	0.0		200.3	44
May.	11.0	4.4	11.5	9.2	9.0	6.8	3.5	4.7	8.6	4.4	9.2	9.2	11.8	12.2	259.9	55.7
June.	10.7	11.9	6.8	11.1	13.9	8.5	5.5	7.6	12.7	12.0	2.3	7.6	7.7		311.9	67.1
July.	14.5	14.2	12.2	12.9	7.2	13.5	1.1	11.7	6.9	13.3	7.3	10.7	6.8	6.8	277.5	64.4
August.	12.4	0.9	4.2	11.2	3.2	10.4	8.9	12.0	12.1	12.7	12.5	12.2	12.0	10.4	189.2	50.6
September.	9.0	9.6	0.7	0.3	1.4	8.7	10.7	9.7	9.0	10.6	0.4	0.0	0.0		215.5	61.7
October.	4.8	9.6	9.3	6.4	4.2	8.3	6.6	8.5	8.7	6.8	4.4	7.9	2.6	2.5	112.6	38.8
November.	7.6	3.0	7.0	0.6	1.0	0.2	2.2	0.0	6.7	0.0	5.9	4.8	2.2		65.0	23.8
December.	0.0	0.0	7.3	0.7	3.9	0.0	1.5	7.3	7.2	2.8	7.9	0.0	0.2	1.5		

MONTHLY TABLES FOR EACH HOUR OF RECORDED SUNSHINE—1924

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	0.1	1.4	1.9	2.5	2.9	2.9	3.0	3.1	2.0	0.1	0	0	0
February.	0	0	0	0	1.6	3.6	3.9	4.0	4.5	5.0	5.3	5.6	4.9	3.0	0.2	0	0
March.	0	0	0	0.1	2.6	4.1	4.5	4.7	5.2	5.2	5.2	5.0	4.4	3.6	1.3	0	0
April.	0	0	0.7	3.6	5.2	5.8	6.1	6.5	6.4	6.9	6.3	6.5	5.6	4.5	3.5	1.1	0
May.	0	0	1.4	3.3	4.2	4.7	5.2	5.7	6.6	6.4	5.4	4.7	4.5	4.6	4.0	3.3	0.7
June.	0	0.1	3.3	4.8	5.0	5.9	6.6	6.5	6.8	7.7	7.5	7.3	6.5	6.1	5.9	5.0	1.6
July.	0	T	3.8	6.4	7.3	7.6	7.6	8.2	8.0	7.5	7.8	7.3	7.5	7.0	6.4	6.1	2.0
August.	0	0	0.9	5.8	7.2	7.2	7.4	7.4	7.6	7.7	8.2	7.0	6.7	6.5	5.7	3.6	0
September.	0	0	0	1.7	4.6	5.8	6.8	6.6	6.0	6.5	6.4	6.2	5.8	4.3	2.0	0.3	0
October.	0	0	0	0	3.7	7.0	7.4	7.5	7.6	8.3	8.5	8.6	7.3	3.4	0	0	0
November.	0	0	0	0	1.0	3.1	5.1	5.7	5.4	5.2	5.2	4.3	2.3	0.4	0	0	0
December.	0	0	0	0	T	1.6	2.3	2.8	2.8	3.0	2.8	3.1	2.5	0.1	0	0	0
Total hours.	0	0.1	10.2	25.7	42.5	57.8	64.8	68.1	69.8	72.3	73.6	68.7	60.0	43.6	29.0	19.4	4.3

SUMMARY OF SUNSHINE.

BRIGHT SUNSHINE RECORDED.

	1924			Mean from 1882 to 1910.		
	Number of days.	Number of hours	Percentage ^c of sunshine.	Number of days.	Number of hours.	Percentage of sunshine.
January	20	61.4	21	20	77.9	27
February	18	121.4	40	22	108.1	37
March	20	142.1	39	25	150.0	40
April	24	204.1	51	25	190.7	47
May	27	200.3	44	29	218.9	48
June	29	259.9	56	29	260.0	56
July	30	311.9	68	30	282.2	60
August	31	277.5	64	30	252.7	60
September	27	189.2	51	28	207.8	55
October	31	215.5	62	28	149.3	44
November	26	112.6	39	22	85.3	29
December	17	65.0	24	20	65.2	24
Year	300	2260.9	51	308	2048.1	46

Possible hours, 4,461.6.

EARTHQUAKE RECORDS BY MILNE-SHAW SEISMOGRAPHS

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.

E & W Component.—Period, 12 seconds.—Magnification, 150.—Damping, 20 to 1.

No.	Date. 1924	P.T. Commence		S Commence		L.W. Commence		Max.		End.		Max Amplitude. μ	REMARKS.
		H.	M.	H.	M.	H.	M.	H.	M.	H.	M.		
2675	Jan. 2	e 9	56.8								10 26.0		N. & S. comp.
2676	" 4	i22	0.4			22 02.4		22 5.4		22 22.0		24	Micros going on.
2677	" 6					22 04.1							N. & S. comp.
2678	" 7	i10	12.2	e10	16.5	18 16.5							Micros
2679	" 11	e 0	7.2			18 18.0						12	Micros
2680	" 12					10 26.2							Micros
2681	" 14	21	3.7	21	14.0	0 24.0?							Micros
2682	" 15					0 27.0							Micros
2683	" 16					14 33.4							Micros
2684	" 20	i22	50.7?			14 41.9							Micros
2685	" 21	2	4.8	2	12.3	21 34.6		21 48.3		20 48.0		23	Tokio O 20h. 51.4m 9,150km.
2686	" 25	6	13.3	6	19.0	3 57.7							Micros
2687	" 26	i 2	14.7?	2	25.4?	22 14.2							Micros
2688	" 29	2	06.3	2	15.6	22 41.5							Micros
						2 31.2		2 39.0					Micros
2689	" 30	e 5	35.1			6 0.9				6 4.0			Small amp.
2690	" 30	e14	46.1	i14	48.9	14 51.6				15 16.0?		38	Small amp.
2691	" 30	20	59.3	21	04.3	21 8.2		21 9.0		22 5.0		4	O 20h53.0. 3,240km. P. ill defined
2692	" 31			1	17.6?	1 27.1				2 10.0?			Small amp.
2693	Feb 11	6	29.5	6	43.6	7 19.4				8 12.0			Small amp.
2694	" 13					7 21.0				1 17.0			Micros going on,
2695	" 14	8	3.0			23 49.0							Micros
2696	" 15	5	4.1			0 14.5				5 6.0			May not be seismic.
2697	" 16	i 0	44.2	e 0	45.9	1 3.6				2 0.0			May not be seismic.
2698	" 17	e 0	22.4			1 24.5				0 25.0			Small amp. micros and wind effect.
2699	" 17									1 25.0			May not be seismic.
2700	" 18	i17	26.4			21 22.0				21 50.0?			Wind and micros effect boom.
2701	" 19	i 7	22.9	e 7	32.6	21 26.2				18 28.0		4	Constant small. Micros going on.
2702	" 21	i 7	23.3			17 52.7							Micros
2703	" 22					17 55.5							Micros
2704	" 24	5	48.3	5	57.7	7 33.2							Micros
2705	" 26	i12	28.9			7 55.2							Micros
2706	" 29	e 9	0.8	9	11.8?	13 38.2?							Micros
2707	Mar 2					13 40.0							Micros
2708	" 4	e 2	24.1			11 14.1							Micros
2709	" 4	10	14.3			12 31.1				12 58.0			8,050 Km. Other phases lost, power off. PR. 5h.52.2m.
						12 48.6							Small amp.
						9 53.4				10 12.0?			Small amp.
						10 1.2				11 6.0			May not be seismic.
						10 34.5							Small amp.
						2 25.6				2 36.0			Small amp.
						10 19.8		11 25.5				667	O. 10h07.4m. 3,710km. F. merged into next quake
						10 20.0							

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No.	Date 1924	P.T.		S.		L.W.		Max.		End.	Max. Amplitude.	REMARKS.
		Commence.		Commence.		Commence.		Commence.				
		H.	M.	H.	M.	H.	M.	H.	M.		μ	
2710	Mar 4			11	55.9	11	58.3	12	3.3		179	F. merged into next quake.
2711	" 4	12	59.9			12	0.8				13	F. merged into next quake.
2712	" 4	13	0.4			13	2.5				6	Irregular waves.
2713	" 4	e17	29.8			17	32.5			Micros	5	
2714	" 5	e 4	46.2?	4	53.3	5	4.2			Micros	3	4.980km,
2715	" 5	e12	19.5?	12	21.7	12	24.3			Micros	9	Micros and wind.
2716	" 5					12	27.6				5	
2717	" 6					13	5.6			Micros	10	Slow waves.
2718	" 6	e12	38.4			10	28.3?			10	58.0	
2719	" 7					10	38.5?					
2720	" 7					8	17.5			12	54.0	Small amp.
2721	" 8					18	27.3			8	52.0	Slow waves.
2722	" 9					18	29.3					Wind affected boom.
2723	" 10	i18	15.8			9	38.2					May not be seismic.
2724	" 11	i10	49.3	e10	52.6	10	14.0			10	14.0	May not be seismic.
2725	" 11			10	53.1	11	1.5					
2726	" 11					18	27.6			Micros	106	N. & S. comp.
2727	" 11	e20	48.6	i20	49.0	10	58.9	11	0.7	Micros	4	P. masked by micros. 4,280km.
						16	42.1					Uniform waves, small amp.
						16	44.0					
						20	0.4			Micros	4	
						20	1.3					
						20	50.6	20	53.0	Micros	29	

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2728	Mar. 11					23	4.2			Micros	4	Marked micros going on.
2729	" 12					3	5.0			Micros	12	N. & S. component.
2730	" 12	e14	18.8			14	18.1			14	30.0	Heavy wind masked phases.
2731	" 13	i14	8.2							Micros	6	Small amp.
2732	" 14					11	14.4					
2733	" 15	10	43.3?	10	53.6	11	17.1			Micros	3	Small.
2734	" 16			1	37.6	3	0.1			Micros	3	
2735	" 16					3	2.2					
2736	" 20					11	0.2	11	17.5	Micros	44	O. 10h30.7m. 9,110km. Kurile.
2737	" 22					1	42.2			Micros	4	P. masked by micros. 4,340km.
2738	" 22					10	51.0?			Micros	10	Wind.
2739	" 24					10	14.3					
2740	" 24					10	17.2					
2741	" 24	e 20	37.3	20	42.2	13	9.1					
2742	" 25					13	24.9	13	26.4	13	46.0?	F. merged into next quake.
2743	" 25			14	19.8	11	55.5			12	20.0	P. possibly in micros.
2744	" 25					20	10.9			20	18.0	
2745	" 26					20	47.1	20	48.8	22	30.0?	
2746	" 26	20	30.8	20	36.8	12	42.4			13	2.0	
2747	" 27	8	38.5?	8	45.4	14	24.1	14	26.6	paper off	43	Small amp.
2748	" 28					15	38.0			16	48.0?	Paper changed in early phases.
2749	" 30					1	17.6			1	30.0	Small amp.
2750	" 30	12	28.8			20	43.8			22	30.0.	P. & S. poorly defined,
2751	April 3	e23	57.6?	0	5.0	8	47.3			9	14.0	Small micros.
		23	59.1			5	12.0					
						0	21.4	0	27.8	Micros	6	Marked micros going on.
						0	24.4				66	P. & F. lost by wind effect.
						12	30.8			Micros	2	
						12	31.9					
						0	10.2					
												4,660 km. Small amp.

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No	Date 1924	P. T. Commence.	S. Commence.	L. W. Commence.	Max.	End	Max. Amplitude.	REMARKS
2752	Apr. 4			0 57.0		1 2.0		May not be seismic.
2753	" 6	e21 49.5		21 56.9 22 6.0		? 6		
2754	" 8	e 9 56.2?		9 59.4		10 10.0	4	Micros mask early phases. Boom disturbed by high wind. P. & S. masked by micros.
2755	" 11			14 12.6		Wind 11 27.0	13	
2756	" 12			10 41.3		Micros	5	
2757	" 13	e14 27.5	i15 10.6	15 16.5 15 16.8				
2758	" 14			10 1.1		10 46.0	2	
2759	" 14	16 39.5?	16 51.2	16 59.2	17 26.5	Micros	538?	11,110km, possibly a dual quake.
2760	" 15			12 14.3 12 22.6		Light off		Slow waves, small amp.
2761	" 15			22 20.4 22 28.4		22 30.0		Slow waves, small amp.
2762	" 18			12 9.6		12 24.0		Very small.
2763	" 20			15 12.4 15 34.9		Micros		
2764	" 21	20 7.2	20 12.1	20 16.4	20 24.4	21 48.0	22	O-20h1.0m. 3,180km. Mexico Cty. May not be seismic.
2765	" 24			5 4.8		5 35.0		
2766	" 25			18 46.8		19 54.0		Irregular, small amp. N. & S. comp.
2767	" 28			17 52.3 17 54.9		18 2.0	8	
2768	" 28	e21 22.4 21 23.3	e21 26.4	21 54.5 22 11.5		23 16.0?	5	
2769	" 29			9 34.4		9 48.0	3	May be dual quake. O. 21h2.3m. 6,500km.
2770	" 29	e21 12.2	21 20.3	21 27.1 21 41.6		22 38.0	11	
2771	" 30	e 4 25.3 4 29.5	e 4 36.2	5 3.3		7 40.0	4	May be 2 or 3 quakes.

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2772	April 30	e10 16.3		10 24.4 10 24.8		10 47.0	2	
2773	May 1			4 40.5 4 51.2		Micros.	2	
2774	" 1	20 00.9	20 06.0	20 10.7	20 17.0	Wind.	56	0 19h54.3m P. preceded by micros. Small N. & S. Component.
2775	" 2			2 34.4		3 9.0	1	
2776	" 3	e12 14.9?		12 33.5		?12 50.0		Small sinusoidal from 6h 24.2m. Sinusoidal at intervals.
2777	" 4	e17 15.0	?17 17.1	?17 20.8		19 4.2	6	
2778	" 5	i 6 21.2		6 28.0		6 58.0		
2779	" 6			3 45.5		4 46.0	3	
2780	" 6			6 51.4		7 20.0	4	
2781	" 6	e10 48.5 i10 48.9	10 57.0	11 00.0 11 2.5		11 33.0	4	7,020km N. S. Component. 9,220 km.
2782	" 6	?16 29.0	16 37.1 16 39.4	16 45.8 16 57.5	17 9.1	19 8.0	53	Very small. N & S. component.
2783	" 7	e 1 33.6		1 37.1		2 28.0		
2784	" 7			13 9.2		13 23.0		
2785	" 8			6 11.6 6 37.1		8 08.0	4	
2786	" 10	i 3 15.8	e 3 19.9	3 51.4		4 52.0	5	Very small.
2787	" 11	e 4 52.5 4 56.8				5 10.0		
2788	" 11			16 46.1? 16 49.7		Wind effect.		Small. Very small. May not be seismic.
2789	" 13			2 38.9		2 47.0		
2790	" 13	?e19 48.4		19 50.4		20 01.0	3	
2791	" 17	e 4 21.6		4 41.4		5 31.0	5	
2792	" 17	e 5 36.4? 5 37.4	e 5 38.4 5 47.5	5 54.4 6 30.2		? 7 56.0	5	
2793	" 18			10 18.8		11 12.0		Very small, N. & S. component.

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No.	Date 1924	P.T.		S.		L.W.		Max.	End.	Max. Amplitude.	REMARKS.	
		Commence.	H. M.	Commence.	H. M.	Commence.	H. M.					
2794	May 21											
2795	" 21	?10	19.3	10	24.3	10	46.3		2	0.0		
						10	30.4		11	2.0	3,240 km. SR. 10h. 26.5m.	
2796	" 22					10	31.0					
						18	13.8					
2797	" 23					18	25.3					
2798	" 24	e 2	52.6			2	56.5		3	6.0	Small.	
						3	11.5		4	40.0		
2799	" 27	10	18.4	10	23.5	3	20.0					
						10	25.0		11	16.0	P. preceded by micros. 3,270km.	
2800	" 27					10	26.4					
2801	" 28	10	3.3	10	12.7	20	45.1		21	6.0	Slow waves, small amp.	
						10	23.0		11	58.0	O. 9h 51.9m. 8,050km.	
2802	" 31					10	23.5					
						12	55.8				Small.	
2803	June 4					13	0.6?					
2804	" 4	e16	16.1			3	4.3					
						16	21.5	16	34.0	17	42.0	Micros precede L. Preceded by small micros.
2805	" 7					16	28.8					
2806	" 14	e12	31.3			19	30.0					
2807	" 15	e11	2.6			12	33.6				High wind interfering.	
2808	" 17	e21	9.9			11	5.3				Small.	
2809	" 18	e17	42.6	e17	46.1	21	20.0				Small.	
2810	" 22					17	46.8	17	49.3		Preceded by micros.	
						14	14.1				Preceded by micros.	
2811	" 22	e22	36.5?	e22	42.5	14	22.3					
2812	" 24	e13	57.6?			22	48.8	22	50.0		O. 22h 29.02m. 4,160km.	
2813	" 26	i 2	1.0	2	10.5	14	5.9				Small. * Paper changed.	
						2	24.1?	2	51.7	7	2.0	O. 1h 40.2m. 14,085m. Well defined.

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2814	June 28	e23	4.3?			23	5.5?			23	42.0	Very small.
2815	" 29					15	48.4?			16	4.0	N. & S. component.
2816	" 29	e17	8.5							17	28.0	N. & S. component.
2817	" 29	e18	54.1	e19	48.8							N. & S. component. High winds.
2818	" 30	e12	13.1	e12	15.5					12	46.0	Small. Undulatory.
2819	" 30	15	56.5	16	6.5	16	21.9?	16	30.0	19	30.0	O. 15h44.5m. 8,780km.
2820	July 1	e 3	22.2							3	25.5	Small amp.
2821	" 1	e 3	34.1	e 3	38.5	3	46.2	3	47.8	4	34.0	
2822	" 2	e18	11.5?	18	16.5?	18	23.5	18	28.0	19	26.0?	
2823	" 3	4	53.9	5	4.5	5	24.8	5	32.3	8	36.0	O. 4h 41.3m. 9,520km.
2824	" 5	e23	0.5			23	37.6			0	28.0	Very small amp.
2825	" 6	e14	26.2	14	31.5	14	36.1	14	38.0			O. (N.) 14h 18.8m. 3,840km.
2826	" 6	e18	32.2?	e18	55.4	19	13.0?	19	21.3	20	27.0	Marked sinusoidal.
2827	" 7	3	4.9?	3	13.2	3	32.9			5	14.0	6,790km.
2828	" 7	e 9	52.3			9	56.2			10	18.0	Small amp.
2829	" 7	e17	40.1			17	51.4			18	6.0	Wind. Small amp.
2830	" 8	e11	14.3			11	18.4			11	50.0	Small amp.
2831	" 8					21	44.1			22	28.0	
2832	" 9	e20	56.5?	e21	0.4	21	7.5			21	58.0	Small.
2833	" 11	e19	58.5	20	8.7	20	28.8	20	50.8	0	24.0	P. not recorded. 9,610km.
2834	" 12	e15	26.5	15	36.9	15	54.0?	16	2.5	18	0.0?	(Valley.)
2835	" 15	0	10.9	0	11.5	0	11.8			0	13.8	O. 0h 10.1m330km. Felt Ottawa
2836	" 16	e 6	19.3							7	29.0	Barely noticeable.
2837	" 17	e11	56.0?			12	15.5					Wind.
2838	" 19	e 3	4.8			3	38.6			3	51.0?	Very small.
2839	" 20	e 0	35.0			0	40.4			0	54.0	Small amp.
2840	" 20	e 9	55.3			10	16.5			11	6.0	Small amp.
2841	" 21	e 1	48.2	1	52.4	2	6.1			2	12.6	" "
2842	" 22	e 4	12.5	4	18.6	4	25.0	4	27.1	5	54.0	O. (N.) 4h 4.2m.
2843	" 22	e11	6.4			11	11.4			13	15.0	
2844	" 22	e14	52.4			15	15.2			16	50.0?	Sinusoidal.

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No	Date 1922	P. T. Commence.	S. Commence.	L. W. Commence	Max.	End	Max. Amplitude.	REMARKS
2845	July 24	5 14.8?	5 24.6	5 36.2	6 13.4	8 27.0	31	O. 5h 2.8m. 8,650km.
2846	" 25			20 54.1				May not be seismic.
2847	" 29	e 5 41.1		5 58.2		7 46.0	8	
				6 23.4				
2848	Aug. 1	e 1 20.2?		1 32.4		2 8.0		Very small.
2849	" 2			18 26.5		18 51.0		Very small.
2850	" 5	e 1 39.5		1 44.8		2 1.0		
2851	" 6			1 18.5		2 26.0		Small sinusoidal.
2852	" 6			3 36.4		4 16.0		Very small.
2853	" 6	e 14 46.2	e 15 8.9			15 34.0		Very small.
2854	" 7			13 27.1				Small. Paper changed at 14h.40m
2855	" 7			16 56.2		17 12.0		Small.
2856	" 10	e 6 32.0	e 6 37.5	7 7.5	7 17.3	8 55.0	17	May be dual quake.
2857	" 11			2 53.4		2 43.0		Very small waves.
2858	" 11			3 58.1		4 24.0		Sinusoidal.
				4 12.3				
2859	" 12			3 58.9		5 19.0		May not be seismic.
2860	" 13	e 10 43.3		10 46.4		11 26.0		Small sinusoidal.
2861	" 13	13 40.7	13 49.0	13 55.7	14 4.8	Wind	16	O. 13h 30.0. 6,770km,
2862	" 14	e 0 38.5?		0 43.4	1 20.7	3 18.0	5	Marked sinusoidal L.
2863	" 14	e 18 15.3	18 26.7	18 45.7	18 59.8	22 36.0	66	Japan. e 18h 16.2m.
2864	" 14	e 23 51.6	i 23 51.7	23 58.1	0 22.2	1 50.0	11	Marked sinusoidal.
2865	" 17	e 2 9.7	i 2 10.1	2 30.0		4 56.0?	6	Sinusoidal. L.
				3 2.5				
2866	" 17	e 11 48.3		11 57.5		?		
2867	" 21	e 16 9.5		16 14.2		17 16.0		
2868	" 21	Micros	e 19 9.7	19 22.0?		20 54.0	6	Micros going on.
2869	" 22	e 0 58.4		1 2.1		1 8.0		Small.
				1 3.9				

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2870	Aug 25	i 2 45.6?	e 3 2.4	3 24.4				Micros	
2871	" 25	14 44.1?	14 54.4?	15 11.3				Micros	14
			14 54.6	15 24.1					
			23 26.9	23 40.6	23 50.4			Micros	7
2872	" 25			22 50.5				?	
2873	" 27			19 8.8		19 12.0			
2874	" 28			0 47.1		1 4.0			
2875	" 29			3 51.3	4 16.0	6 4.0	29		
2876	" 30	3 25.4?	3 35.5	0 11.4	0 9.1	0 29.0	4		
2877	Sept 3	e 0 3.8	e 0 7.7	16 22.6		?			
2878	" 4			3 20.6				Micros	
2879	" 6			5 15.8				Micros	
2880	" 6			20 31.0				Micros	
2881	" 6			6 39.8		6 57.3			
2882	" 7	e 6 36.9		9 12.9		9 50.0?			
2883	" 7			13 51.8		14 10.0?			
2884	" 7	e 13 42.6	e 13 51.2	19 56.9		20 28.0			
2885	" 7			10 2.3		10 8.0			
2886	" 8			5 53.1		6 8.0			
2887	" 9			10 23.3		10 44.0			
2888	" 11			4 4.5		5 16.0			
2889	" 11	e 3 58.6	e 4 3.6	4 4.5	15 21.0		28		
2890	" 13	14 46.5	14 56.8	15 12.3		20 49.0			
2891	" 13			20 28.7		17 8.0	21		
2892	" 14		13 32.2	13 43.6?	13 46.1				
				13 47.3					
2893	" 16	e 3 0.3		3 20.4		4 22.0			
2894	" 17	7 10.0	7 14.0	7 16.3		7 58.0			
2895	" 19			7 51.3		8 26.0?			
2896	" 24	e 19 34.1		19 35.0		19 46.0			
2897	" 25	e 4 30.9				4 40.0			
2898	" 25	e 4 57.4		5 0.3		6 6.0			
2899	" 27			14 14.6?		14 32.0			

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No.	Date 1924	P.T.		S.		L.W.		Max.	End.	Max. Amplitude.	REMARKS.		
		Commence.		Commence.		Commence.							
2900	Sept 28	e13	H. M. 42.6	13	H. M. 47.1	13	H. M. 52.3	13	H. M. 56.1	14	H. M. 30.0	3mm	460 km?. Felt in Ontario. Very small.
2901	" 30	8	56.1	8	56.9?	8	56.9?	8	57.0	9	2.0		
2902	Oct 6					22	56.8			23	14.0	9	Poor definiton.
2903	" 8	e20	57.5	e21	2.8	21	26.0?			22	36.0		
2904	" 10					9	44.3			9	50.0	17	Very small. 6,700km?. Small. Micros mask. Small.
2905	" 10					21	46.3			21	58.0		
2906	" 12	19	44.8?	19	53.0	20	5.5			21	5.0	9	O. 4h 59.9m. 3,840km.
2907	" 13					13	10.5			13	56.0		
2908	" 13					16	41.1			17	46.0	29	3,100km. P. unrecorded. S.R. 23h 22m.
2909	" 14	5	7.1	5	12.7	5	14.7	5	18.3	6	20.0		
2910	" 17	4	29.3?	4	34.1?	4	37.0?	4	42.4	5	58.0	17	Small micros. Micros mask early phases.
2911	" 18	e23	13.5	23	19.4	23	27.8?	23	32.5?	0	42.0		
2912	" 19	e15	46.8			15	48.4	15	51.8	16	28.0	10	N. & S. Component. Micros going on, 3,840km.
2913	" 20	e 0	7.1			0	8.3			0	44.0		
2914	" 20	e 5	44.3			0	17.0					7	Very small. Very small.
2915	" 20	i 8	58.6			8	59.5						
2916	" 20			20	12.5	20	27.8	20	32.4			17	Faint traces. Large micros mask phases.
2917	" 25	e19	20.0			19	24.3			20	7.0?		
2918	" 27					20	54.5					10	N. & S. Component. Micros going on, 3,840km.
2919	Nov 1	e 1	50.4			20	58.3						
2920	" 1	5	2.5	5	8.1	1	54.0?					7	Micros active.
2921	" 4					5	12.1	5	16.7				
2922	" 5					4	16.0			4	59.0	4	Sinusoidal L. Micros mask early phase. Java.
2923a	" 13	9	1.1			4	21.0			9	28.4		
						9	6.6?	9	48.0	11	21.0	9	

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2923b	Nov 13	8	49.6?	8	59.4?	9	18.6	9	48.0	11	24.0	10	N. & S. ?8,580km.
2924	" 16	e23	31.5			23	39.4					4	
2925	" 20			20	48.7	20	57.8					4	Micros mask P. & S.
2926	" 28	e13	4.4			13	12.8					5	
2927	" 28					19	38.4	13	20.8			5	May not be seismic.
2928	" 28					22	8.4					2	N. & S.
2929	Dec 7					16	2.6	16	4.0	16	24.0?	5	
2930	" 9					22	22.9					2	N. & S. Winds and micros interfere.
2931	" 11					18	48.0	19	4.8			6	Early phases masked.
2932	" 12					2	37.5	2	38.9	3	2.0	4	Early phases masked.
2933	" 12					2	38.5					2	Micros mask early phases.
2934	" 13					9	41.0					2	Small.
						1	5.0						
						1	7.1						
2935	" 14					9	51.9	9	52.4			4	Winds interfere with phases.
2936	" 15	e21	19.3			21	46.4					5	Micros mask phases.
2937	" 16					21	8.0					6	
2938	" 17					6	8.4	6	8.9			2	Micros mask early phases.
2939	" 24	22	22.4?	22	29.5	22	36.7					2	
2940	" 26	e23	36.5			23	57.3					9	N. & S.
						0	9.0						
2941	" 27	11	34.3	11	44.4?	11	56.7	12	8.5			15	O. 11h 22.0m. 9,000km. Micros precede P.
2942	" 28	23	7.2	23	17.8	23	29.8	23	42.2			54	O 22h 54.6m. 9,500km. Micros render P. doubtful.
						23	18.1						
2943	" 30					3	32.0?					2	Small.
2944	" 30			13	6.8	13	6.9	13	10.4				N. & S.
2945	" 30	16	40.2										Paper changed in early phases.

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MAGNETIC SUMMARY FOR 1924

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 $H \tan I = Z$.

1924	MEANS.							EXTEMES.						
	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	7 3.8	7.6	.15760	.00010	.57788	.00004	74 44.7		7 53.2	5 39.8	.15781	.15599	.57835	.57720
February	7 4.1	5.4	.15761	11	.57789	3	44.7		7 15.7	6 50.7	.15779	.15736	.57820	.57775
March	7 4.4	8.6	.15761	15	.57769	6	44.4		7 15.2	6 44.4	.15787	.15725	.57791	.57743
April	7 4.9	8.9	.15763	20	.57747	6	43.9		7 19.0	6 52.8	.15791	.15720	.57776	.57672
May	7 5.0	10.9	.15756	32	.57725	17	44.0		7 49.0	6 28.8	.15870	.15639	.57872	.57524
June	7 5.7	11.9	.15755	36	.57723	14	44.0		7 30.4	6 38.2	.15920	.15577	.57857	.57594
July	7 5.8	12.6	.15755	29	.57730	9	44.1		7 18.6	6 53.6	.15803	.15718	.57762	.57676
August	7 6.1	13.7	.15753	30	.57723	8	44.1		7 18.6	6 54.2	.15796	.15705	.57753	.57677
September	7 6.8	12.0	.15739	28	.57718	11	44.8		7 03.5	6 37.4	.15792	.15494	.57795	.57644
October	7 7.2	8.9	.15742	30	.57701	8	44.4		7 25.1	6 42.9	.15770	.15660	.57783	.57578
November	7 7.7	7.1	.15736	23	.57698	4	44.7		7 26.4	6 59.0	.15759	.15670	.57721	.57677
December	7 7.6	5.6	.15740	14	.57687	4	44.3		7 15.7	6 48.3	.15763	.15718	.57707	.57673
Year	7 5.8	9.4	.15752	.00023	.57733	.00008	74 44.3							

Phenological Observations, 1924

DATE WHEN FIRST SEEN.

Canada Thistle, flowering,	July 19	Cherry, wild, flowering	May 28
Dandelion, flowering,	May 2	Cherry, cultivated "	May 13
Columbine flowering	June 6	Buttercup	June 7
Trees appear green	May 12	Golden Rod, flowering	Aug 7
Red Clover, flowering	June 26	Robins seen	March 23
White Clover flowering	June 23	Blue Birds	April 13
Currant, cult. flowering	May 12	Flickers	April 13
Wild Rose "	June 20	Song Sparrows	April 13
Maple "	April 27	Swallows	April 27
Strawb'ry, wild, Fr't ripe	June 26	Orioles	May 25
Crocus, cultiv'd flowering	April 3	Lake open	March 23
Lilac "	May 31	Rivers open	March 20