NOV 7 1916

DEPARTMENT OF MARINE AND FISHERIES

DOMINION OF CANADA.

# **Toronto Observatory**

Results of Meteorological, Magnetical and Seismological Observations,

1915.

COMPILED BY JAS. YOUNG.

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

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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.

The barometric readings given in the following tables are taken from the photographic barograph, and are the means of the twenty-four readings of each day. A correction has been applied to reduce these readings to the original height of the standard barometer in the old Observatory building, so as to make the readings comparable with previous Toronto registers. Capillarity and gravity corrections have been omitted. adopted mean temperatures are the means of the max, and min. of the thermometers in the Stevenson Screen. The extremes are also from the same screen. Humidity means are derived from the 6h, 8h, 14h, 16h, 22h, and 24h observations. During the winter months the 6h, 22h, and 24h entries are taken from a Julien Friez hygrometer. The direction and wind velocity are from the anemometer at the Eastern Gap on the Island, where the cups revolve at a height of fifty feet above the lake level. A velocity of 30 miles and over is called a gale. Auroral light observations have been rendered doubtful, owing to the large number of electric lights in the city.

The mean yearly temperature was 46°S. which is 2° warmer than the average of 70 years. The yearly rainfall was 28.30 inches, and the snowfall 64.1 inches. The rainfall shows an increase of 1.44 inches from the average fall, and the snowfall a deficiency of 1.9 inches, the total precipitation being in excess to the amount of 1.24 inches. Bright sunshine was slightly below the average.

JANUARY. The weather remained mild up to the 21st, when it became much colder, and the temperature then continued below the average to the end of the month. There was an absence of any very low readings, -1°.0 being the lowest, and occurred on the 22nd. The monthly mean was 1°.8 above the average. Snowstorms were quite frequent; the total fall was 27.2 inches. Of this quantity 10 inches fell on the 22nd and 23rd, with a northeasterly and easterly gale. Bright sunshine about average. Snow on the ground at the end of the month 14 inches.

FEBRUARY. A very mild month, and a marked absence of any low temperatures. There were only eight days on which the mean temperature fell below the average. Snow fell on eight days, and the monthly fall was only about half the usual quantity. The rainfall was slightly in excess of the normal. Bright sunshine considerably below the average. On account of the high maximum temperatures from the 12th to the 25th, and the light snowfall there was but little snow on the ground at the end of the month.

MARCH. The mean temperature was 1°.2 above average. Bright, pleasant weather with a very dry air generally prevailed up to the 19th, and from then onwards much cloudier to the end of the month. There were no very low temperatures recorded, 10°.6 being the lowest. This occurred on the 30th. The snowfall and rainfall were below average, and bright sunshine exceeded the average by 62 hours.

APRIL. The warmest April on record. During the first three days temperature slightly below average. The 13th was the only other day when a negative departure was shown. On the 7th the weather became much warmer and more springlike, continuing so until the 11th. The following two days were much cooler, a marked frost being noted on the morning of the 13th. On the 14th the weather again became warmer and the remainder of the month continued quite warm and springlike. Maximum temperatures of 80° and over were recorded from the 25th to the 28th, and vegetation came on rapidly during this period: some species of fruit trees blossomed, which is about 18 days earlier than the usual period. The relative humidity for the month was below the normal, and on the 21st during the afternoon we recorded an exceptionally low reading of 19, with a strong east wind and a clear sky. The rainfall was fairly distributed, and there was only one case when the fall was moderate. viz, during a thunderstorm on the 25th. This, the first thunderstorm of the season, was particularly severe. Bright sunshine slightly higher than the average. The prevailing wind for the month was south, and there were no very high winds.

MAY The month was slightly colder than the average, and there was a lack of any warm weather, the highest temperature being only 74°.4, which is in strong contrast to the high maximums of April. There was much cloudy weather with northeast and northwest winds. On the 18th the terrestrial thermometer fell to 31°.2, and to 34° on the 27th; night and early morning readings were uniformly low. Although bright sunshine was somewhat in excess of the average, vegetation did not progress as rapidly as usual owing to the lack of any high temperatures. The rainfall was considerably below the average, but the fall was fairly well distributed. The 16th was the only day on which the wind velocity exceeded 30 miles.

JUNE. A cool month with strong northeasterly and easterly winds. The highest temperature readings were 81°:5 on the 5th, and 82° degrees on the 29th, not very high temperatures for June. The night and early morning readings during the month were uniformly low, The maximum temperature on the 23rd was only 59°.4, this being the lowest maximum we ever recorded for 23rd of June. An exceptionally low minimum of 42°.9 was recorded on the morning of the 24th. The relative humidity was considerably below average, and bright sunshine was 22 hours in

excess of the usual amount. The rainfall shows a deficiency of 1.43 inches. A marked dry spell prevailed from the 25th to the end of the month. An Aurora Class II. extending from northwest to southeast was observed on the night of the 12th. This was the first marked display noticed in Toronto for some years past.

JULY. The mean temperature was slightly above the average. There were no prolonged warm periods. The maximum temperature frequently rose above 82°. As in June the minimum readings were uniformly low. The rainfall was considerably above averge, and rain fell on 15 days. Some thunderstorms were very severe, notably the ones on the 4th and 13th; both were attended by wind squalls and heavy rain. Bright sunshine was below the average. The winds were unusually strong for July, and were chiefly from the northeast and northwest; highest velocity 36 miles southwest on the 5th.

AUGUST. The rainfall was 8.135 inches. This is the largest fall for any August during the past 75 years; not only has it been the rainiest August on record but the fall has only been exceeded on two other months, viz., September 1843, when 9.76 inches fell, and May 1894, with 9.35 inches. Thunderstorms were frequent and contributed materially to the total fall. The heaviest fall was on the 3rd, when 3.090 inches fell, and during the following morning the gauge registered 1.200 inches, and 1.100 inches on the 30th. The highest temperature was 87°.5 on the 16th, and after this date there were no high maximum readings. Like the two previous months, the night and morning temperatures were quite low. On the 27th and 31st the temperature fell to 42° and 40° respectively, rather unusually low readings for August. There was a marked deficiency in bright sunshine amounting to 44 hours. An exceptionally heavy northeast and east gale of wind prevailed on the 3rd. Maximum velocity 48 miles during the afternoon, the wind shifting to the east during the night. This was rather an unusual storm for August.

SEPTEMBER. A warm, wet month with some marked cold waves. During the first half of the month the temperature frequently rose above 80°, and touched 87°.3 on the 14th and 15th, the mean daily temperature being for those days 17° to 19° above the average. After the latter date the minimum temperatures were fairly low, except in a few instances, falling to 39° on the 22nd and 23rd, 31°.4 on the 28th, and 37° on the 29th.

The terrestrial thermometer showed a reading of 29° on the morning of the 28th. This marked the first frost of the season. We had almost continuous rains from the 5th to the 28th. The total fall for the month exceeded the average by 1.39 inches; 1.45 inches fell on the 12th, and 0.75 the following morning. Bright sunshine totalled about average.

OCTOBER. A fine month with a monthly temperature of 5°.4 above the average. There were only six instances in which the daily mean temperature went below average, viz., the 5th, 8th, 9th, 10th, 24th and 25th, and ranged from 1° to 9°. The rainfall was slightly below the average. The heaviest fall was on the 1st and 2nd, when 1.62 inches fell. No rain fell between the 19th and 28th, the weather being generally clear and fine. Bright sunshine was slightly above the average, and the month was a pleasant one.

NOVEMBER. A mild month with a mean temperature of 4°.7 above the average, and no cold weather up to the 15th. After this date the minimum fell to 24° for a few mornings, but on the 19th mild conditions set in continuing to the end of the month. Bright sunshine was somewhat in excess of the average. The rainfall and snowfall was not up to the average. There were marked dry periods from the 5th to the 10th, and again from the 21st to the 26th, with much cloudy weather. The prevailing wind was west, and on six days the velocity exceeded 30 miles; highest per hour 41 miles east on the 19th and 41 miles west on 29th.

DECEMBER. A comparatively mild month. Temperature fluctuations were small. In ten instances the temperature exceeded 35°. The mean maximum temperature for the month was 33°, and there was no extremely cold weather. The lowest temperatures were 10°.8 on the 15th, and 9°.8 on the 31st. The snowfall was 4.5 inches above the average fall, but there was a marked deficiency in the rainfall. The month was a little less cloudy than usual, and bright sunshine totalled 25 hours in excess of the normal number of hours. Snow on the ground at the end of the month 2.5 inches.

#### JANUARY, 1915.

RESU	ILTS (	эг ов	SERV	ATION	Б.			Mean to pas 70 year	st
Mean reading of	baron	aeter,	32 F.	inch	es,	29.	370	29.6	47
Highest "	**			hat 1		30.	169	30.	271
Lowest "		OI	n 19t	h at 3	.20h	28.	805	28.	913
Range of barome	ter re	ading	zs,			1.	364	1.	358
Highest temperature on the 17th 46.7							6.7	4	4.9
Lowest temperat							1.0		6.8
Range for the me						4	7.7	5	1.7
Mean of the high		adins	rs.			3	0.7	2	9.1
Mean of the lowe						1	6.5	1	5.2
Mean daily range			,			7	4.2	1	3.9
Mean from max.	The second second	nin.,				2	3.6	2	2.1
Mean from 6 hou	r obs	ervat	ions			2	3.2		120
Mean humidity,							79		83
Mean force of va							090	0.	108
Mean wt. of vap							1.1		1.2
Mean additional		-					0.4	57	1.2
Mean weight of						and the	0.2		1.2
Highest solar (bla Lowest (radiatio				шубп	ther		3.0		
Monthly range	11) 011	une o	OUL				6.0		
Fall of snow				ir	ches		27.2		7.3
Number of days	on w	hich	snow	fell			10		14.2
Fall of rain					ches	1,	310	1.	141
Number of days							4		4.9
Mean amount of	cloud	(1.0 in	dicat	ingov	ercas	tsky)	.67		.74
No. of hours in the	N.	N.E.	E.	S.E.	s.	s. w.	w.	N. W.	C.
month in which the wind was	105	83	58	13	104	89	221	67	4
Total number of miles registered during the month was 9,638							9,638		
Mean velocity									13.0
Highest velocity						he sou	thwe	est	41
Highest daily av		velo	city o						31.3
Lowest "				" "	11				3.5

Number of days during the month on which gales occurred

#### JANUARY, 1915.

EXTREME READINGS DURING 76 YEARS.	
Highest reading of barometer on 8th in 1866	30.940
Lowest " " on the 2nd in 1870	28.166
Highest temperature on the 4th in 1874 and 1st in 1876	57.5
Lowest " " 10th in 1859	- 26.5
Highest monthly mean temperature, 1880	32.7
Lowest " " 1857	12.8
Greatest rainfall for month in 1843 (inches)	4.295
Least " " in 1852 and 1856 "	0.000
Greatest number of days on which rain fell, in 1890	14
Greatest snowfall for the month in 1871 (inches)	43.6
Least " " in 1876 (inches)	3.2
Greatest number of days on which snow fell, in 1861-71-93	23

# TABLE OF DIFFERENCES.

The signs + and - mean respectively above and below the	nonthly normal.
Mean barometric pressure	+0.023 inches
Monthly range	+0.006 inches
Mean temperature	+1.5
Mean of highest temperatures	+1.6
Mean of lowest "	+1.3
Mean daily range	+0.3
Total rainfall	+0.169 inches
Total snowfall	
Mean amount of cloud	-0.07
Rain fell on the 6th, 7th, 17th and 31st.	ALL PARTY IN LES
Heaviest fall from 11.15h to 12.20h and from 14.	25h
to midnight on the 6th	0.600 inches
Snow fell on the 1st, 2nd, 18th, 19th, 20th, 22nd, and 31st.	23rd, 25th, 29th
Heaviest fall from 12.40 to midnight on the 22nd	8.5 inches
Number of days completely clouded	8
Number of clear days	3
Lunar corona on the 24th.	

#### FEBRUARY, 1915.

RES	ULTS	ог о	BSER	VATIO	ns.	in in a	7.5		for the ast ears.
Mean reading of	baro	mete	r, 32 I	. incl	nes,	29	.682	29.	638
Highest "	SL pli	16	on 19	th at	9.40h	30	.232	30	.226
Lowest "	101 14	. 1	on 6tl	h at 2	h	29	.200	28	.945
Range of barome	eter r	eadir	ngs.			1	.032	1	.281
Highest tempera	ture	on th	he 14t	h			42.3		44.3
Lowest tempera							2.9	1	7.1
Range for the m						Sont !	39.4	1	51.4
Mean of the high			ors				31.8		29.2
Mean of the lowe			-				20.3		14.1
Mean daily range		aams	50,				11.5		15.1
Mean from max.	1100	min					26.0		21.7
Mean from 6 hou	r obs	serva	tions				25.6		
Mean humidity,							76		81
Mean force of va	pour					0	.107	0.	109
Mean wt. of vap							1.3		1.0
Mean additional						ns	0.4		
Mean weight of							67.0	5'	72.0
Highest solar(bla				im) o	n the				
Lowest (radiation	n) on	the 4	th				0.2		
Monthly range Fall of snow					mint=	10	07.3		
Number of days		ala i ala			nches		8.6		16.5
Fall of rain	on w	nich	snow		ches		9 290		12.4
Number of days	on w	high :	nain f		ienes	1.	290	0.	931
Mean amount of o					ercas	tsky)			4.7
TILLE T									10000
No. of hours in the	N.	N.E.	E.	S.E.	S.	s. w.	w.	N. W.	C.
wind was	128	108	128	12	91	26	135	43	1
Total number of	miles	regi	stered	duri	ng the	mon	th w	as	9,280
Mean velocity					-				13.8
Highest velocity						ie nor	theas	st	46
Highest daily ave	erage	velo	city of	H 4874974					24.2
Lowest "	"		•		3.01				8.0
Number of days	lurin	g the	mont	h on	which	n gale	s occ	urred	4

#### FEBRUARY, 1915.

EXTREME READINGS DURING 76 YEARS.	
Highest reading of barometer on 4th in 1887	30.522
Lowest " " on the 22nd in 1912	28.413
Highest temperature on the 4th in 1890	53.8
Lowest " " 5th in 1855	-25.4
Highest monthly mean temperature, 1882	30.3
Lowest " " 1875	10.2
Greatest rainfall for month in 1842 (inches)	3.625
Least " " in 1841-46-56-73-77-1901 "	0.000
Greatest number of days on which rain fell, in 1857	11
Greatest snowfall for the month in 1846 (inches)	46.1
Least " " in 1851 (inches)	2.4
Greatest number of days on which snow fell, in 1843	21

#### TABLE OF DIFFERENCES.

The signs + and - mean respectively above and	
Mean barometric pressure	+0.044 inches
Monthly range	-0.249 inches
Mean temperature	+4.3
Mean of highest temperatures	+2.6
Mean of lowest "	+6.2
Mean daily range	-3.6
Total rainfall	+0.359 inches
Total snowfall	-7.9
Mean amount of cloud	- 0.07
Rain fell on the 1st, 5th, 11th, 14th, 22nd	, 23rd, 24th and 25th.

Rain fell on the 1st, 5th, 11th, 14th, 22nd, 23rd, 24th and 25th.

Heaviest fall from 8.55h to 21.30h on the 23rd 0.580 inches

Snow fell on the 1st, 2nd, 4th, 5th, 6th, 7th, 25th, 26th and 27th.

Heaviest fall on the 2nd 6.2 inches

Number of days completely clouded 9

Number of clear days 5

Fog on the 24th.

Solar halo on the 19th.

#### MARCH, 1915.

RESULTS OF OBSERVATIONS.         Mean reading of barometer, 32 F. inches,       29.579         Highest " " on 4th at 11h 30.145         Lowest " " on 22nd at 15h 29.266         Range of barometer readings,       0.879         Highest temperature on the 23rd and 24th       49.0         Lowest temperature on the 30th       10.6         Range for the month,       38.4	5	st ars. 309 129
Highest " " on 4th at 11h 30.145  Lowest " " on 22nd at 15h 29.266  Range of barometer readings, 0.879  Highest temperature on the 23rd and 24th 49.0  Lowest temperature on the 30th 10.6  Range for the month, 38.4	30. 28.9 1.3 5	129 919 210 2.1
Lowest " " on 22nd at 15h 29.266 Range of barometer readings, 0.879 Highest temperature on the 23rd and 24th 49.0 Lowest temperature on the 30th 10.6 Range for the month, 38.4	28.9 1.3 5	919 210 2.1
Range of barometer readings, 0.879 Highest temperature on the 23rd and 24th Lowest temperature on the 30th 10.6 Range for the month, 38.4	1.5 5	210 2.1
Highest temperature on the 23rd and 24th Lowest temperature on the 30th Range for the month,  38.4	5	2.1
Highest temperature on the 23rd and 24th  Lowest temperature on the 30th  Range for the month,  38.4	-	
Lowest temperature on the 30th 10.6 Range for the month, 38.4		2.6
Range for the month, 38.4	5	mi V
The state of the s		4.7
Moon of the highest readings 3/5	3	6.3
Mean of the highest readings, 37.5   Mean of the lowest readings, 22.4	9	1.9
Mean daily range, 15.1	- 3	4.4
Mean from max. and min., 29.9	2	9.0
Mean from 6 hour observations 29.3		
Mean humidity, 67		78
Mean force of vapour 0.112	0.136	
Mean wt. of vapour in a cu. ft. of air, grains, 1.4		1.4
Mean additional wt. required for sat'n, grains 0.7	-	
Mean weight of a cubic foot of air, grains, 560.5	ðt.	51.9
Highest solar(black bulb in vacuum) on 7th 116.7		
Lowest (radiation) on 30th 7.0		
Monthly range 109.7 Fall of snow inches 7.4	STATE OF	1 -
Number of days on which snow fell 7	11.5 10.4	
Fall of rain inches 0.100		498
Number of days on which rain fell, 1	-	6.7
Mean amount of cloud (1.0 indicating overcast sky), .48		.67
No of house is the N. N.E. E. S.E. S. S. W. W.	N. W.	c.
month in which the	200	3.200
wind was   136   44   58   4   37   57   229	107	2
Total number of miles registered during the month we	as 1	0,20
Mean velocity		13.
Highest velocity at 12h on the 5th from the northeas	st	3
Highest daily average velocity on the 5th		27.
Lowest " " " 14th	a wife and	6.
Number of days during the month on which gales occ	urred	

### MARCH, 1915.

Highest r	eading	of baro	met	er on 24th	in 1906		30.508
Lowest	"	11		"on the	19th in I	859	28.286
Highest t	empera	ature on	the	e 28th in 191	10		75.2
Lowest	"	"	**	3rd in 1868	***		- 15.6
Highest n	nonthl	y mean	ten	aperature, 1	1903		38.9
Lowest	**	**		" 18	385	destadined a	18.5
Greatest r	ainfall	for mor	th	in 1895	alta lan lev	(inches)	4.054
Least	- 11		in	1856	- Alle		0.000
Greatest n	umber	of days	on	which rain	fell, in	1878	17
Greatest s	nowfal	l for the	me	onth in 1870	) cultivaria	(inches)	62.4
Least	**	** **	in	1858 and 190	03	(inches)	0.2
Greatest n	umber	of days	on	which snov	v fell, in,	1877	21

#### TABLE OF DIFFERENCES.

TABLE OF DIFFERE	INCES.
The signs + and - mean respectively above and	below the monthly normal.
Mean barometric pressure	-0.030 inches
	-0.331 inches
Mean temperature	151 no 101 + 0.9
Mean of highest temperatures	+1.2
Mean of lowest "	+0.5
Mean daily range	+0.7
Total rainfall	-1.398 inches
Total snowfall	10. ( family 24.1 c
Mean amount of cloud	-0.19
Rain fell on the 25th.	The second to the second to the second to the second secon
Heaviest fall at intervals from 4.20h to	14.55h on
the 25th	0.100 inches
Snow fell on the 2nd, 5th, 6th, 7th, 21st,	28th and 29th.
Heaviest fall on the 6th	4.4 inches
Number of days completely clouded	
Number of clear days	9 16070

APRIL, 1915.				
RESULTS OF OBSERVATIONS.		N	Mean for past 70 yea	
Mean reading of barometer, 32 F. inches,	29.6	61	29.60	0
Highest " " on 14th at 9h	30.0	92	30.0	73
Lowest " on 29th at 4.40h	29.1	45	29.0	90
Range of barometer readings,	0.9	47	1.0	33
Highest temperature on the 26th	88	3.7	68	3.3
Lowest temperature on the 3rd	26	3.5	19	0.6
	57	7.2	48	3.7
Range for the month,	-	9.3	49	0.6
Mean of the highest readings,		0.3	3	3.3
Mean of the lowest readings,	3	9.0	100	3.3
Mean daily range,		9.8	4	1.4
Mean from max. and min., Mean from 6 hour observations		3.6		
Mean humidity,		67		70
Mean force of vapour	243	0.7	186	
Mean wt. of vapour in a cu. ft. of air, grains.		2.8	117	2.1
Mean additional wt. required for sat'n, grains	3	1.3		
Mean weight of a cubic foot of air, grains,	53	9.2	54	6.8
Highest solar(black bulb in vacuum) on 27th	799	3.7		
Lowest (radiation) on 4th	1000	3.8		
Monthly range	I FRA	9.9		0.5
Fall of snow inches		0.5		2.5
Number of days on which snow fell inches	1	235	9	148
ran or ram		10	in the same	9.9
Number of days on which rain fell, Mean amount of cloud (1.0 indicating overcast	skv)			.58
Mean amount of cloud (1.0 indicating over case	JIL 3 /	101	1230000	-
N. N.E. E. S.E. S.	. w.	w.	N. W.	C.
No. of hours in the month in which the wind was 143 70 99 6 158	67	152	20	5
Total number of miles registered during the	mon	th w	as	7,299
Mean velocity				10.3
Highest velocity at 16h on the 10th from t	he su	othw	rest	26
Highest daily average velocity on the 12th				18.0
Lowest " " 15t		D SIR	10	4.0
Number of days during the month on which	gale	es occ	urred	0

#### APRIL, 1915.

EXTREME READINGS DURING 76 YEARS.	
Highest reading of barometer on 20th in 1897	30.308
Lowest " " on 2nd in 1863, 28th in 1887	28.704
Highest temperature on the 22nd in 1842	89.8
Lowest " " 2nd in 1857	5.9
Highest monthly mean temperature, 1878	48.8
Lowest " " 1874	34.2
Greatest rainfall for month in 1910 (inches)	4.900
Least " " in 1881 "	0.075
Greatest number of days on which rain fell, in 1871	17
Greatest snowfall for the month in 1857 (inches)	12.9
Least " " in 1843-56-58-70-87-88-90-91 (inches)	0.1
Greatest number of days on which snowfell, in 1857	11

#### TABLE OF DIFFERENCES.

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

Mean barometric pressure	+0.061 inches
Monthly range	-0.086 inches
Mean temperature	+8.4
Mean of highest temperatures	+9.7
Mean of lowest "	+7.0
Mean daily range	+2.7
Total rainfall	-0.913 inches
Total snowfall	-2.0
Mean amount of cloud	-0.04
Rain fell on the 5th, 9th, 10th, 11th, 16th, 22nd	, 23rd, 25th, 27th

and 30th.

Heaviest fall from 18.30h to 20.30h on the 25th 0.465 inches Snow fell on the 1st, 5th and 12th.

Snow fell on the 1st, 5th and 12th.

Heaviest fall from 6.10h to 7.45h on the 5th

Number of days completely clouded

Number of clear days

7

Fog on the 16th, 19th, 23rd, 24th, 26th and 28th.

Thunderstorms on the 11th, 25th and 27th.

On the 6th wild geese flying north.

### MAY, 1915.

Mean reading of barometer, 32 F. inches, 29.553 Highest " " on 27th at 8h 29.953 Lowest " " on 7th at 16.35h 29.079 Range of barometer readings, 0.874 Highest temperature on the 12th 74.4 Lowest temperature on the 10th 32.9 Range for the month, 41.5 Mean of the highest readings, 61.7 Mean of the lowest readings, 42.6 Mean daily range, 19.1 Mean from max. and min., 52.1 Mean from 6 hour observations 51.5 Mean humidity, 67 Mean additional wt. required for sat'u, grains, 2.9 Mean weight of a cubic foot of air, grains, 1.5 Mean weight of a cubic foot of air, grains, 535.0 Highest solar (black bulb in vacuum) on 13th 128.8 Lowest (radiation) on 10th 28.9 Monthly range 99.9 Fall of snow inches 0 Number of days on which rain fell, 11 Mean amount of cloud (1.0 indicating overcast sky), .52  No. of hours in the month in which the wind was 14h on the 16th from the norther Highest daily average velocity on the 16th	Mean for the past 70 years.	100	CEST		NS.	ATIO	BSERV	OF OI	ULTS	RES	
Lowest "" on 7th at 16.35h 29.079 Range of barometer readings, 0.874 Highest temperature on the 12th 74.4 Lowest temperature on the 10th 32.9 Range for the month, 41.5 Mean of the highest readings, 61.7 Mean of the lowest readings, 42.6 Mean daily range, 19.1 Mean from max. and min., 52.1 Mean from 6 hour observations 51.5 Mean humidity, 67 Mean additional wt. required for sat'u, grains, 2.9 Mean weight of a cubic foot of air, grains, 1.5 Mean weight of a cubic foot of air, grains, 1.5 Mean weight of a cubic foot of air, grains, 535.0 Highest solar(black bulb in vacuum) on 13th 128.8 Lowest (radiation) on 10th 28.9 Monthly range 99.9 Fall of snow inches 0 Number of days on which snow fell 0 Fall of rain inches 1.600 Number of days on which rain fell, 11 Mean amount of cloud (1.0 indicating overcast sky), .52  No. of hours in the month in which the wind was 14th on the 16th from the norther	29.577	.553	29.		ies,	inch	, 32 F	neter	baror	eading of	Mean re
Range of barometer readings,  Highest temperature on the 12th  Lowest temperature on the 10th  Range for the month,  Mean of the highest readings,  Mean of the lowest readings,  Mean daily range,  Mean from max. and min.,  Mean from 6 hour observations  Mean humidity,  Mean force of vapour  Mean additional wt. required for sat'n, grains,  Mean weight of a cubic foot of air, grains,  Highest solar (black bulb in vacuum) on 13th  Lowest (radiation) on 10th  Range for the month,  Mean with the month in which the month in which the wind was  Mean additional wt. required for sat'n, grains  Mean weight of a cubic foot of air, grains,  Basel Salar (black bulb in vacuum) on 13th  Compared to the salar (black bulb in vacuum) on 13th  Compared to the	29.967	.953	29.		8h	h at	n 27t	0		t "	Highest
Highest temperature on the 12th  Lowest temperature on the 10th  Range for the month,  Mean of the highest readings,  Mean of the lowest readings,  Mean from max. and min.,  Mean from 6 hour observations  Mean humidity,  Mean force of vapour  Mean additional wt. required for sat'n, grains,  Highest solar (black bulb in vacuum) on 13th  Lowest (radiation) on 10th  Range for the month,  Mean with of a cubic foot of air, grains,  Mean weight of a cubic foot of air, grains,  Highest solar (black bulb in vacuum) on 13th  Lowest (radiation) on 10th  Range for the month in which the month in which the wind was  No. of hours in the month in which the wind was  Total number of miles registered during the month was Mean velocity  Highest velocity at 14h on the 16th from the norther	29.153	.079	29.	5h	6.35	at 1	n 7th	0	*	, 16	Lowest
Highest temperature on the 12th  Lowest temperature on the 10th  Range for the month,  Mean of the highest readings,  Mean of the lowest readings,  Mean daily range,  Mean from max. and min.,  Mean from 6 hour observations  Mean humidity,  Mean force of vapour  Mean additional wt. required for sat'n, grains,  Mean weight of a cubic foot of air, grains,  Highest solar (black bulb in vacuum) on 13th  Lowest (radiation) on 10th  Mean amount of cloud (1.0 indicating overcastsky), .52  No. of hours in the month in which the wind was  Total number of miles registered during the month was Mean velocity  Highest velocity at 14h on the 16th from the norther.	0.814	.874	0.				gs.	eading	eter re	of barom	Range
Lowest temperature on the 10th  Range for the month,  Mean of the highest readings,  Mean of the lowest readings,  Mean daily range,  Mean from max. and min.,  Mean from 6 hour observations  Mean humidity,  Mean force of vapour  Mean additional wt. required for sat'n, grains,  Mean weight of a cubic foot of air, grains,  Highest solar (black bulb in vacuum) on 13th  Lowest (radiation) on 10th  28.9  Monthly range  Monthly range  Fall of snow  Mumber of days on which snow fell  Mean amount of cloud (1.0 indicating overcast sky), .52  No. of hours in the month in which the wind was  N. N.E. E. S.E. S. S. W. W.  Total number of miles registered during the month was Mean velocity  Highest velocity at 14h on the 16th from the norther.	77.9	74.4				1	911				777.0
Range for the month,  Mean of the highest readings,  Mean of the lowest readings,  Mean daily range,  Mean from max. and min.,  Mean from 6 hour observations  Mean humidity,  Mean force of vapour  Mean of the lowest readings,  Mean from max. and min.,  52.1  Mean from 6 hour observations  Mean humidity,  67  Mean of ce of vapour  Mean force of vapour  Mean we diditional wt. required for sat'n, grains,  Mean weight of a cubic foot of air, grains,  Highest solar (black bulb in vacuum) on 13th  128.8  Lowest (radiation) on 10th  28.9  Monthly range  99.9  Fall of snow  Number of days on which snow fell  O  Fall of rain  Number of days on which rain fell,  Mean amount of cloud (1.0 indicating overcastsky), .52  No. of hours in the month in which the wind was  No. of hours in the month in which the wind was  No. of hours in the month in which the wind was  No. of hours in the month in which the wind was  No. of hours in the month in which the wind was  No. of hours in the month was mean velocity  Highest velocity at 14h on the 16th from the norther.	30.9	32.9	8								11-2-1
Mean of the highest readings,  Mean of the lowest readings,  Mean daily range,  Mean from max. and min.,  Mean from 6 hour observations  Mean humidity,  Mean force of vapour  Mean force of vapour  Mean additional wt. required for sat'n, grains,  Mean weight of a cubic foot of air, grains,  Mean weight of a cubic foot of air, grains,  Mean weight of a cubic foot of air, grains,  Mean weight of a cubic foot of air, grains,  Mean weight of a cubic foot of air, grains,  Mean weight of a cubic foot of air, grains,  Mean weight of a cubic foot of air, grains,  Mean weight of a cubic foot of air, grains,  Mean weight of a cubic foot of air, grains,  Mean weight of a cubic foot of air, grains,  Mean weight of a cubic foot of air, grains,  Mean weight of a cubic foot of air, grains,  Mean weight of a cubic foot of air, grains,  1.5  Mean weigh	47.0	- F					20011			The state of the s	
Mean of the lowest readings,         42.6           Mean daily range,         19.1           Mean from max. and min.,         52.1           Mean from 6 hour observations         51.5           Mean humidity,         67           Mean force of vapour         0.255           Mean wt. of vapour in a cu. ft. of air, grains,         2.9           Mean additional wt. required for sat'n, grains,         1.5           Mean weight of a cubic foot of air, grains,         535.0           Highest solar (black bulb in vacuum) on 13th         128.8           Lowest (radiation) on 10th         28.9           Monthly range         99.9           Fall of snow         inches         0           Number of days on which snow fell         0           Fall of rain         inches         1.600           Number of days on which rain fell,         11           Mean amount of cloud (1.0 indicating overcastsky), .52           No. of hours in the wind was         N. N.E. E. S.E. S. S. W. W.           No. of hours in the wind was         115         144         53         29         55         109         176           Total number of miles registered during the month was         Mean velocity         Highest velocity at 14h on the 16th from the norther	62.0	50.00					re	andine			The second second
Mean daily range,         19.1           Mean from max. and min.,         52.1           Mean from 6 hour observations         51.5           Mean humidity,         67           Mean force of vapour         0.255           Mean wt. of vapour in a cu. ft. of air, grains,         2.9           Mean additional wt. required for sat'n, grains,         1.5           Mean weight of a cubic foot of air, grains,         535.0           Highest solar (black bulb in vacuum) on 13th         128.8           Lowest (radiation) on 10th         28.9           Monthly range         99.9           Fall of snow         inches         0           Number of days on which snow fell         0           Fall of rain         inches         1.600           Number of days on which rain fell,         11           Mean amount of cloud (1.0 indicating overcast sky), .52         100           No. of hours in the wind was         N. N.E. E. S.E. S. S. W. W.           Month in which the wind was         115         144         53         29         55         109         176           Total number of miles registered during the month was mean velocity         Highest velocity at 14h on the 16th from the norther	43.3							cecreminate as		and the same of th	
Mean from max. and min.,         52.1           Mean from 6 hour observations         51.5           Mean humidity,         67           Mean force of vapour         0.255           Mean wt. of vapour in a cu. ft. of air, grains,         2.9           Mean additional wt. required for sat'n, grains,         1.5           Mean weight of a cubic foot of air, grains,         535.0           Highest solar (black bulb in vacuum) on 13th         128.8           Lowest (radiation) on 10th         28.9           Monthly range         99.9           Fall of snow         inches         0           Number of days on which snow fell         0           Fall of rain         inches         1.600           Number of days on which rain fell,         11           Mean amount of cloud (1.0 indicating overcast sky), .52         100           No. of hours in the wind was         N. N.E.         E. S.E.         S. W. W.           Month in which the wind was         115         144         53         29         55         109         176           Total number of miles registered during the month was         Mean velocity         Highest velocity at 14h on the 16th from the norther	18.7						ъ,	aumg			
Mean from 6 hour observations         51.5           Mean humidity,         67           Mean force of vapour         0.255           Mean wt. of vapour in a cu. ft. of air, grains,         2.9           Mean additional wt. required for sat'n, grains,         1.5           Mean weight of a cubic foot of air, grains,         535.0           Highest solar (black bulb in vacuum) on 13th         128.8           Lowest (radiation) on 10th         28.9           Monthly range         99.9           Fall of snow         inches         0           Number of days on which snow fell         0           Fall of rain         inches         1.600           Number of days on which rain fell,         11           Mean amount of cloud (1.0 indicating overcast sky), .52         100           No. of hours in the wind was         N. N.E. E. S.E. S. S. W. W.           No. of hours in the wind was         N. N.E. E. S.E. S. S. W. W.           Total number of miles registered during the month was Mean velocity         Highest velocity at 14h on the 16th from the norther	52.7	-						min			
Mean force of vapour         0.255           Mean wt. of vapour in a cu. ft. of air, grains,         2.9           Mean additional wt. required for sat'n, grains         1.5           Mean weight of a cubic foot of air, grains,         535.0           Highest solar (black bulb in vacuum) on 13th         128.8           Lowest (radiation) on 10th         28.9           Monthly range         99.9           Fall of snow         inches         0           Number of days on which snow fell         0           Fall of rain         inches         1.600           Number of days on which rain fell,         11           Mean amount of cloud (1.0 indicating overcast sky), .52         100           No. of hours in the wind was         N. N.E. E. S.E. S. S. W. W.           No. of hours in the wind was         N. N.E. E. S.E. S. S. W. W.           Total number of miles registered during the month was Mean velocity         Highest velocity at 14h on the 16th from the norther		51.5					ions	ZHORE OF			
Mean wt. of vapour in a cu. ft. of air, grains,         2.9           Mean additional wt. required for sat'n, grains         1.5           Mean weight of a cubic foot of air, grains,         535.0           Highest solar (black bulb in vacuum) on 13th         128.8           Lowest (radiation) on 10th         28.9           Monthly range         99.9           Fall of snow         inches         0           Number of days on which snow fell         0           Fall of rain         inches         1.600           Number of days on which rain fell,         11           Mean amount of cloud (1.0 indicating overcastsky), .52         100           No. of hours in the wind was         N. N.E.         E.         S.E.         S. W.         W.           Total number of miles registered during the month was Mean velocity         Highest velocity at 14h on the 16th from the norther	70	67		tul						numidity,	Mean h
Mean additional wt. required for sat'n, grains 1.5  Mean weight of a cubic foot of air, grains, 535.0  Highest solar (black bulb in vacuum) on 13th 128.8  Lowest (radiation) on 10th 28.9  Monthly range 99.9  Fall of snow inches 0  Number of days on which snow fell 0  Fall of rain inches 1.600  Number of days on which rain fell, 11  Mean amount of cloud (1.0 indicating overcast sky), .52  No. of hours in the wind was 115 144 53 29 55 109 176  Total number of miles registered during the month was Mean velocity  Highest velocity at 14h on the 16th from the norther	0.280	.255	0.						pour	orce of va	Mean fo
Mean weight of a cubic foot of air, grains,         535.0           Highest solar (black bulb in vacuum) on 13th         128.8           Lowest (radiation) on 10th         28.9           Monthly range         99.9           Fall of snow         inches         0           Number of days on which snow fell         0           Fall of rain         inches         1.600           Number of days on which rain fell,         11           Mean amount of cloud (1.0 indicating overcastsky), .52         100           No. of hours in the wind was         N. N.E.         E.         S.E.         S. W.         W.           Total number of miles registered during the month was Mean velocity         Highest velocity at 14h on the 16th from the norther	3.1			(1)SSSII/1	1	-				Part of the same of the same of the	
Highest solar (black bulb in vacuum) on 13th 128.8 28.9 Monthly range 99.9 Fall of snow inches 0 Number of days on which snow fell 0 Fall of rain inches 1.600 Number of days on which rain fell, 11 Mean amount of cloud (1.0 indicating overcastsky), .52    No. of hours in the month in which the wind was   N.   N.E.   E.   S.E.   S.   S.   W.   W.   M.   E.     E.	700 T	ESSELVE VIEW						2 2 2 2 1 1 1 1 1			
Lowest (radiation) on 10th   28.9	533.7	STOWARDS								with the second contract of the last	
Monthly range         99.9           Fall of snow         inches         0           Number of days on which snow fell         0           Fall of rain         inches         1.600           Number of days on which rain fell,         11           Mean amount of cloud (1.0 indicating overcast sky), .52           No. of hours in the wind was         N. N.E. E. S.E. S. S. W. W. month in which the wind was         8. E. S. S. W. W. M. M. S. S. W. W. M. M. S. S. S. S. W. W. M. M. S. S. S. W. W. M. M. S. S. S. S. W. W. M. M. S. S. S. W. W. M. M. S. S. S. W. W. M. M. S. S. S. S. S. W. W. M. M. M. S. S. S. S. S. W. W. M. M. S. S. S. S. S. W. W. M. M. M. S. S. S. S. S. S. W. W. M. M. S. S. S. S. S. W. W. M. M. S.			-	3th	n 13	im) o	vacui				
Fall of snow         inches         0           Number of days on which snow fell         0           Fall of rain         inches         1.600           Number of days on which rain fell,         11           Mean amount of cloud (1.0 indicating overcast sky), .52           No. of hours in the wind was         N. N.E. E. S.E. S. S. W. W. month in which the wind was         8. E. S. S. W. W. M. M. S. S. S. S. W. W. M. M. S. S. S. S. S. S. W. W. M. M. S. S. S. S. S. S. W. W. M. M. S.	ami man	<b>学生工作的一个</b>						10011	n) on	The second second second	
Number of days on which snow fell         0           Fall of rain         inches         1.600           Number of days on which rain fell,         11           Mean amount of cloud (1.0 indicating overcast sky), .52           No. of hours in the month in which the wind was         N. N.E. E. S.E. S. S. W. W. M. M.E. E. S. S. S. S. W. W. M. M.E. E. S. S. S. S. W. W. M. M.E. E. S. S. S. S. W. W. M. M.E. E. S. S. S. S. W. W. M. M.E. E. S. S. S. S. W. W. M. M.E. E. S. S. S. S. W. W. M. M.E. E. S. S. S. S. W. W. M. M.E. E. S. S. S. S. W. W. M. M.E. E. S. S. S. W. W. M. M.E. E. S. S. S. W. W. M. M	0.1	SECOND L	0111	105	nch	i				The second second	
Fall of rain inches 1.600 Number of days on which rain fell, 11 Mean amount of cloud (1.0 indicating overcast sky), .52  No. of hours in the month in which the wind was 115   144   53   29   55   109   176  Total number of miles registered during the month was Mean velocity  Highest velocity at 14h on the 16th from the norther	0.1	3-62 (1)		100	11011	SALISMAN AND ADDRESS OF THE PARTY OF THE PAR	snow	vhich	on w		
Mean amount of cloud (1.0 indicating overcast sky), .52  No. of hours in the month in which the wind was  No. N.E. E. S.E. S. S. W. W. M. M.E. W. M. M.E. S. S. W. W. M. M.E. W. M.E. S. S. W. W. M.E. W. M.E. S. S. W. W. M.E. W. M.E. S. S. W. W. W. M.E. S. S. W. W. W. M.E. S. S. W. W. W. M.E. S. S. S. S. W. W. W. M.E. S. S. S. S. W. W. M.E. S. S. S. S. W. W. W. M.E. S. S. S. S. S. W. W. W. M.E. S. S. S. S. S. W. W. W. M.E. S. S. S. S. S. S. W. W. M. M.E. S. S. S. S. S. S. S. W. W. W. M.E. S. S. S. S. S. S. W. W. W. M.E. S. S. S. S. S. S. S. S. W. W. W. M.E. S.	2.971	100	1.	es	nche					A STATE OF THE PARTY OF THE PAR	
No. of hours in the month in which the wind was 115 144 53 29 55 109 176  Total number of miles registered during the month was Mean velocity  Highest velocity at 14h on the 16th from the norther	12.4	11				ell,	ain fe	hich 1	on w	er of days	Numbe
Total number of miles registered during the month was  Mean velocity  Highest velocity at 14h on the 16th from the norther	.57	),.52	sky)	cast	verc	ingo	dicat	(1.0 in	cloud	mount of	Meana
month in which the wind was 115 144 53 29 55 109 176  Total number of miles registered during the month was Mean velocity  Highest velocity at 14h on the 16th from the norther	L 101 11107	PALL	, ALLE		1		=0T		Page 1	DE 20150	911-201
wind was   115   144   53   29   55   109   176  Total number of miles registered during the month was Mean velocity  Highest velocity at 14h on the 16th from the norther	N. W. C.	. w.	s. w.	3.	S.	B. E.	E.	N.E.	N.	ours in the	No. of he
Mean velocity Highest velocity at 14h on the 16th from the northe	55 8	176	109	55	5	29	53	144	115		
Highest velocity at 14h on the 16th from the norther	as 8,20	nth wa	mon	the	ng t	duri	tered	regis	miles	umber of	Total n
	11.0										
Highest daily average velocity on the 16th	east 3	orthe	he n								
	23.						city o	velo	erage		
Lowest " " " 24th Number of days during the month on which gales occ	urred 5.		1	1000000					16	53	

MA	Y,	1915.	

EXTREME READINGS DURING 76 YEAR	ARS.	
Highest reading of barometer on 2nd in 1849	th without	30.214
Lowest " " on 6th in 1861,		28.644
Highest temperature on the 30th in 1895		93.4
Lowest " " 3rd in 1867		24.6
Highest monthly mean temperature, 1911	(February)	61.3
Lowest " " 1867		46.6
Greatest rainfall for month in 1894	(inches)	9.395
Least " " in 1891		0.495
Greatest number of days on which rain fell, in 18	890	23
Greatest snowfall for the month in 1875	(inches)	3.1
Least " " " in 1910-13-14-15	(inches)	0.0
Greatest number of days on which snow fell, in 1	905	5
· ·		
TABLE OF DIFFERENCES.  The signs + and — mean respectively above and below the i		
	- 0.024 i	
Monthly range	+0.060 i	nches
Mean temperature		
Mean of highest temperatures	-0.3	
Mean of lowest "	-0.7	
Mean daily range	+0.4	
Total rainfall	-1.371 i	nches
Total snowfall	-01	
Mean amount of cloud	- 0.05	
Rain fell on the 4th, 5th, 7th, 8th, 12th, 16th, 17th	, 20th, 21st	, 25th
and 26th.		
Heaviest fall from 6.35h to 11.50h and 16.30h t 18.50h on the 7th		
Number of days completely clouded	0.420 in	ches
Number of clear days	7	
Hail on the 16th at 10.10 a.m.	As Sharp	
Fog on the 21st.		
Thunderstorms on the 12th and 21st. Rainbow on the 7th.		
realingow off the 7th.		

JUNE, 1915.				
RESULTS OF OBSERVATIONS.			Mean fo	st
Mean reading of barometer, 32 F. inches,	29.0	628	29.	572
Highest " on 28th at 10h	29.	936	29.	909
Lowest " " on 7th at 19h	29.	212	29.	165
Range of barometer readings,	0.	724	0.	744
Highest temperature on the 29th	- 8	2.0	8	6.4
Lowest temperature on the 24th	4	2.9	4	0.1
Range for the month,	3	9.1	4	6.3
Mean of the highest readings,	7	3.1	7	2.4
Mean of the lowest readings,	5	1.3	1	2.9
Mean daily range,	2	1.8	un dig	9.5
Mean from max. and min.,	6	2.2	6	2.6
Mean from 6 hour observations	6	1.7		
Mean humidity,		67		73
Mean force of vapour	0.	370	0.	418
Mean wt. of vapour in a cu. ft. of air, grains,		4.2		4.8
Mean additional wt. required for sat'n, grains	3	2.0		
Mean weight of a cubic foot of air, grains,	52	25.0	52	21.8
Highest solar(black bulb in vacuum) on 4th	18	37.6		
Lowest (radiation) on 24th	40	0.8		
Monthly range		06.8		
Fall of rain inches	1.	335	( ) - ( ) / TP(	764
Number of days on which rain fell,	Jesel	12	State !	.53
Mean amount of cloud (1.0 indicating overcasts	sky),	100	P P U.S.	.00
No. of hours in the	w.	w.	N. W.	c.
month in which the wind was 100 224 104 30 52	59	92	54	5
Total number of miles registered during the	mon	th w	as	7,712
Mean velocity				10.7
Highest velocity at 17h on the 18th from th	e no	orthe	ast	31
Highest daily average velocity on the 23rd Lowest " " 4th				17.8
Number of days during the month on which	gale	s occ	urred	1
riament of male annual contracts on the contracts	0			

JUNE, 1915	
EXTREME READINGS DURING 76 YEARS.	
Highest reading of barometer on 10th in 1913	30.160
Lowest " " on 25th in 1902	28.875
Highest temperature on the 27th in 1901	97.1
Lowest " " 10th in 1842	
Highest monthly mean temperature 1885	67.9
Lowest " " 1842	
Greatest rainfall for month in 1870 (inches)	8.090
Least "in 1864"	0.570
Greatest number of days on which rain fell, in 1869	22
Flurries of snow on two days in 1859.	al wash
A partie Monte and a mo	of mark
TABLE OF DIFFERENCES.	
The signs + and - mean respectively above and below the monthly norm	
	inches
Mean temperature -0.020	inches
Mean of highest temperatures $-0.4$ +0.7	
Mean of lowest " -1.6	
Mean daily range +2.3	
Total rainfall	inches
Mean amount of cloud -0.07	
Rain fell on the 2nd, 3rd, 7th, 9th, 10th, 13th, 15th, 19th 21st, 22nd and 23rd.	, 20th,
Heaviest fall from 9.10h to 9.20h and 17.30h to 21.00h	
on the 7th 0.456 i	nahaa
Number of days completely clouded 0	nenes
Number of clear days 8	
Thunderstorms on the 7th, 13th, 18th, 19th and 22nd.	
Aurora class II. on the 12th, class III. on the 16th, class I	V. on
the 17th and 20th.	

		JU	ILY,	1915					
RESU	LTS O	г ов	SERV	ATION	s.			Mean to pas 70 year	t
Mean reading of l	oarom	eter,	32 F.	inche	es,	29.0	563	29.5	85
Highest "	"			at 9		29.8	322	29.8	889
Lowest "	**	OI	1 5th	at 21	1	29.	180	29.4	120
Range of barome	ter res	ding	s,			0.6	342	0.4	169
Highest tempera				11243		8	6.5	8	9.8
Lowest temperat						5	0.9	4	7.5
Range for the mo						3	5.6	4	2.3
Mean of the high		ding	gs,			7	7.5	7	7.9
Mean of the lowe						5	9.3	5	8.2
Mean daily range						1	8.2	1	9.7
Mean from max.		in.,				6	8.4	6	8.1
Mean from 6 hou			ions			6	7.3		
Mean humidity,							82		72
Mean force of va	pour					0.	568	0.	488
Mean wt. of vapo	Annual Control of the last of	a cu.	ft. o	f air,	grain	s,	6.7		5.7
Mean additional							1.5		
Mean weight of		7					7.2	51	7.0
Highest solar(bla						14	13.8		
Lowest (radiatio	n) on 2	22nd					18.3		
Monthly range					ches		95.5 505	0	039
Fall of rain Number of days	on wh	ich r	ain fe	1000	tenes	4.	15	1000	1.2
Mean amount of	eloud(	1.0 in	dicat	ing ov	ercas	tsky)	The same of	moine	.49
							-/	-	No.
No. of hours in the	N.	N.E.	E.	S.E.	S.	s. w.	w.	N. W.	C.
month in which the wind was	89	178	30	59	79	101	126	74	8
Total number of Mean velocity Highest velocity Highest daily av Lowest " Number of days	at 18	Sh or velo	the	5th f	rom to 5th	he so	uthw	est	6,211 8.3 36 22.3 4.3

#### JULY, 1915

EXTREME READINGS DURING 76 YEAR	s.	
Highest reading of barometer on 7th in 1892	FEILER	30.192
Lowest " " on 24th in 1911		29.006
Highest temperature on the 3rd in 1911		103.2
Lowest " " 12th in 1843		38.7
Highest monthly mean temperature, 1868		75.8
Lowest " " 1891		63.7
Greatest rainfall for month in 1841	(inches)	8.150
Least " " in 1868	"	0.510
Greatest number of days on which rain fel!, in 180	31-66-70-	
80-1902		16

# TABLE OF DIFFERENCES. The signs + and - mean respectively above and below the monthly normal.

-0.022 inches

Mean barometric pressure

Trout suromours prosents	O.OME INOTION
Monthly range	+0.173 inches
Mean temperature	+0.4
Mean of highest temperatures	-0.4
Mean of lowest "	+1.1
Mean daily range	-1.5
Total rainfall	+1.476 inches
Mean amount of cloud	0.00
Rain fell on the 2nd, 3rd, 4th, 5th, 7th, 8th, 12	2th, 13th, 15th, 16th,
19th, 21st, 25th, 26th and 28th.	
Heaviest fall from 13.35h to 14.05h and 15.55h	ı to
midnight on the 7th	1.100 inches
Number of days completely clouded	1
Number of clear days	5
Thunderstorms on the 13th, 21st, 26th and 28t	h.
Lightning alone on the 16th and 27th.	

#### AUGUST, 1915.

RES	ULTS	OF OI	BERV	ATIO	NS.			Mean i	ist
Mean reading of	baro	meter	, 32 F	. inch	es,	29.	589	29.	617
Highest "	ghest on 27th at on								
Lowest "	west " on 22nd at 3h 29								257
Range of barome	eter r	eadin	gs,			0.	681	0.	652
Highest tempera	ature	on th	e 16tl	h		8	37.5	F 8	37.0
Lowest tempera	ture o	on the	31st			4	0.2	ur E	15.7
Range for the m	onth,					- 4	7.3		11.3
Mean of the high	est r	eading	gs,			1	4.4	,	76.1
Mean of the lowe	est re	ading	s,				8.2		57.1
Mean daily rang	e,					1	6.2		19.0
Mean from max.	and	min.,				(	6.3	LI BILL	36.6
Mean from 6 hou	r obs	servat	ions			(	35.2		
Mean humidity,							78		74
Mean force of va	pour					0.	491	0.	483
Mean wt. of vap	our ir	a cu	ft. o	f air,	grain	ıs,	5.4		5.1
Mean additional	wt. r	equire	d for	sat'u	, grai	ins	1.6		
Mean weight of	a cub	ic foo	t of a	ir, gr	ains,	52	20.9	5	19.6
Highest solar(bl	ack b	ulbin	vacuu	um) or	a 16th	1 14	12.0		
Lowest (radiatio	n) on	31st				1	37.8		
Monthly range						10	4.2		
Fall of rain				iı	ches	8.	135	2.	770
Number of days	on w	hich r	ain fe	ell,			15		10.9
Mean amount of	cloud	(1.0 in	dicat	ingov	ercas	stsky),	.53		.49
No. of hours in the	N.	N.E.	E.	S.E.	s.	s. w.	w.	N. W.	C.
month in which the wind was	71	156	88	40	73	123	88	97	8
Total number of	miles	regis	tered	duri	ng th	e mon	th w	as	8,334
Mean velocity	-1-4		42	2 2 6	list.	THEORY	og sibi		11.2
Highest velocity Highest daily av						ne noi	thea	st	19.2
Lowest "	erage.	, 46100	i o	" "					5.8
Number of days	durir	g the	mon	th on	whic	h gale	s occ	urred	2

#### AUGUST, 1915.

211111111111111111111111111111111111111	EX	TREME	READING	S DURI	NG 76 YE	CARS.	
Highest re	eading	g of bare	ometer o	n 16th i	n 1880		30.042
Lowest	"	"		on 22nd	d in 1912		29,028
Highest te	mper	ature or	the 24t	h in 1864	1		99.2
Lowest	**	4	" 18th	in 1858	5 and 27	th in 1870	40.0
Highest m	onthl						71.6
Lowest	"	- 44	**	18	66		60.8
Greatest ra	ainfal	l for mo	onth in 19	15		(inches)	8.135
Least	**	"	' in 1874	and 18	94		0.380
Greatest n	umbe	r of day	s on wh	ich rain	fell, in 1	872	19

#### TABLE OF DIFFERENCES.

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

Mean barometric pressure	-0.028 inches
Monthly range	+0.029 inches
Mean temperature	- 0.3
Mean of highest temperatures	-1.7
Mean of lowest "	+1.1
Mean daily range	
Total rainfall	-3.8
Mean amount of cloud	+5.365 inches +0.04
Rain fell on the 3rd, 4th, 5th, 6th, 7th, 8th, 21st, 22nd, 24th, 28th, 29th and 30th.	
Heaviest fall from 8.05h to midnight on the 3rd	3.090 inches
Number of days completely clouded	3
Number of clear days	7
Fog on the 4th, 5th and 29th.	
Thunderstorms on the 3rd, 8th, 15th, 24th and 29	th
Lightning alone on the 4th and 6th.	on.

#### SEPTEMBER, 1915

RESULTS OF OBSERVATIONS.				for thast ears.
Mean reading of barometer, 32 F. inches,	29	.684	29	.667
Highest " on 25th at 4h	30	.029	30	.037
Lowest " on 26th at 10.48h	29	.107	29	.187
Range of barometer readings,	0	.922	- 0	.850
Highest temperature on the 14th and 15th		87.3	in the	82.7
Lowest temperature on the 28th	3	31.4		35.7
Range for the month,	N. S	55.9		47.0
Mean of the highest readings,	3/1	72.9		68.2
Mean of the lowest readings,	A	53.7		50.2
Mean daily range,		19.2		18.0
Mean from max. and min.,		33.3		59.2
Mean from 6 hour observations		32.2	III =He	
Mean humidity,		79	- 6	78
Mean force of vapour	0.	455	0.	.393
Mean wt. of vapour in a cu. ft. of air, grains,		5.0		4.5
Mean additional wt. required for sat'n, grains		1.4		
Mean weight of a cubic foot of air, grains,	5	24.5	5	27.3
Highest solar (black bulb in vacuum) on 22nd	1	39.8		
Lowest (radiation) on 28th	- 8	28.8		
Monthly range	1	11.0	TO THE REAL PROPERTY.	
Fall of rain inches	4.	240	3.	177
Number of days on which rain fell,		13		11.4
${f Mean  amount  of  cloud  (1.0  indicating  overcast  s)}$	ky)	, .45		.50
to. or nours in the	w.	w.	N. W.	c.
nonth in which the vind was 141 97 65 30 77 1	35	72	99	4
Octal number of miles registered during the national dean velocity  Highest velocity at 16h on the 26th from the				7,09
lighest daily average velocity on the 26th				22
lowest " " " " 3rd				3.

#### SEPTEMBER, 1915.

28.863	8
97.1	
27.6	
64.5	
53.4	
9.760	(inches)
0.395	
	1907

#### TABLE OF DIFFERENCES.

+0.072 inches
+4.1
+4.7
+3.5
+1.2
+1.063 inches
-0.05
th, 13th, 15th, 17th,
1.450 inches
1
7

Thunderstorms on the 8th, 9th, 12th, 13th, 15th, 17th, 20th.

RESU	LTS C	ог ов	SERV	ATION	S.			Mean to pas 70 year	t
Iean reading of	baron	neter,	32 F.	inche	es,	29.6	368	29.6	351
lighest "	"			at 11		30.0	087	30.1	112
owest "		01	a 31st	at m	idnig	ht 29.	131	29.0	066
Range of barome	ter re				100		956	1.0	046
lighest tempera						7	3.7	7	0.3
owest temperat						3	0.2	2	5.5
Range for the mo			me ear			4	3.5	4	4.8
Mean of the high		adino	rs.				0.1	5	4.9
Mean of the lowe						4	3.8	3	9.1
		tung.					6.3	1	5.8
Mean daily range Mean from max.		nin.					1.9	4	7.0
Mean from 6 hou			ione			- 2	0.7		
Mean from 6 nou Mean humidity,	r ous	ervat	ions				77		79
Mean force of va	pour					0.	295	0.	258
Mean wt. of vapo	our in	a cu.	ft. o	f air,	grain	s,	3.4		3.0
Mean additional	wt. re	equire	d for	sat'u	, grai	ns	1.0		
Mean weight of	a cubi	c foot	t of a	ir, gra	ins,		86.7	54	0.4
Highest solar(bla	ick bu	ilb in	vacuu	im) or	12th	12	26.0		
Lowest (radiation	n) on	zotn				- W	99.1		
Monthly range Fall of snow				ir	ches	in usil	0.0		0.6
Number of days	on w	hich	snow	fell			0.0		1.6
Fall of rain				in	ches	2.	185	S-VAR	102
Number of days	on w	hich 1	cain fe	ell,			9	oniti I	12.4
Mean amount of	cloud	(1.0 in	dicat	ingov	ercas	tsky)	, .53	III.	.61
	N.	N.E.	E.	S.E.	s.	s. w.	w.	N. W.	C
No. of hours in the month in which the		00	01	90	100	150	100	E17	
wind was	66	92	64	30	106	159	169	57	1
Total number of	miles	regis	stered	duri	ng the	e mon	th w	as	8,3
Mean velocity									11
Highest velocity	at 1	lh on	the	lst fr	om th	ne nor	theas	st	0
Highest daily av	erage	velo	city o	n the	1st				2

0	CT	OB	ER.	1915
- 0	C.L.	UL	A	TOTO

	EXT	REME	REA	DINGS D	URING 76	YEARS.		
Highest r	eading	of bar	ome	ter on 28	th in 184	7	NET BOOK	30.396
Lowest	**	**	**	" on	14th in	1893		28.227
Highest t	empera	ture c	n th	e 15th in	1897			85.7
Lowest				31st in				15.9
Highest 1	nonthl	y mea	n te	inperatu	re 1900			55.7
Lowest	"			**	1841			41.8
Greatest	rainfall	for m	onth	in 1849		(in	ches)	5.965
Least		**		n 1901			**	0.560
Greatest	numbe	r of da	ays	n which	rain fell	, in 1864		22
Greatest							inches	12.0
Least	**	"	"	1910-13-	14-15	no	t meas	urable
Greatest	number	of da	ayso	n which	snow fel	1		7

#### TABLE OF DIFFERENCES.

The signs + and - mean respectively above and below the mo	nthly normal.
Mean barometric pressure	+0.017 inches
Monthly range	-0.090 inches
Mean temperature	+4.9
Mean of highest temperatures	+5.2
Mean of lowest "	+4.7
Mean daily range	+0.5
Total rainfall	-0.217 inches
Total snowfall	-0.6
Mean amount of cloud	-0.08
Rain fell on the 1st, 2nd, 4th, 5th, 8th, 13th, 14th,	18th and 29th.
Heaviest fall from 15.00h to midnight on the 1st	1.270 inches
Number of days completely clouded	5-1
Number of clear days	5
Fog on the 19th, 20th, 31st.	
Lunar corona on the 17th.	
Aurora class IV. on the 23rd.	

#### NOVEMBER, 1915.

		110 1	13.11.15.	ER, I	010.	-	-	Mean f	or the
RES	ULTS	OF O	BSERV	ATIO	NS.	PITSU	and V		ıst
Mean reading of	baro	meter	, 32 F	' inch	es,	29.	553	29.	627
Highest "	- 1	, c	n 17t	hat	21h	30.	127	30.	169
Lowest "		. 0	n 20t	h at	1.20h	28	625	28.	975
Range of barom	eter r	eadin	gs.			1	.502	1.	194
Highest tempera							61.3	3	57.9
Lowest tempera							23.7	THE TOP	13.5
Range for the m							37.6		14.4
Mean of the high			gs.			i-N	46.6		42.5
Mean of the low						-	34.8	1	30.1
Mean daily rang							11.8		12.4
Mean from max.	and	min				7	40.7		36.3
Mean from 6 hor	ur ob	serva	tions			ant-li	39.8		
Mean humidity,							77		80
Mean force of va	pour					0.	190	0.	179
Mean wt. of vapour in a cu. ft. of air, grains, 2.2									2.0
Mean additional							0.7		
Mean weight of							18.2	5	52.7
Highest solar(bl	ack b	ulbin	vacui	um) or	n 2nd	1	12.4		
Lowest (radiatio	n) on	18th					20.0		
Monthly range							92.4		
Fall of snow				iı	iches		2.9		4.6
Number of days	on v	vhich	snow	fell			6		7.3
Fall of rain				ir	ches	1.	600	2.4	188
Number of days	on w	hich i	rain f	ell,			8	Dia EL	10.3
Mean amount of	cloud	(1.0 in	dicat	ingov	ercas	tsky)	, .65		.74
No. of hours in the	N.	N.E.	E.	S.E.	s.	s. w.	w.	N. W.	C.
month in which the	28	116	117	43	62	111	010	200	ILDS I
willia was	40	110	111	45	02	114	213	26	1
Total number of	miles	regis	stered	duri	og th	e mon	th w	00 1	1,001
Mean velocity					-0				15.3
Highest velocity	at 8	3h on	the 1	19th f	rom	the e	ast a	nd	10.0
6h on the 29t						N SI		in ha	41
Highest daily av	erage	velo	city o	n the	29th				29.
Lowest "	"		1			h			-
Lowest					140	11			6.5

	NO	VE	MBER.	1915.
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EXTREME READINGS DURING 76 YE	ARS.	
Highest reading of barometer on 30th in 1887	N. Brennes	30.592
Lowest " " on 9th in 1913		28.327
Highest temperature on the 3rd in 1903		70.2
Lowest " " 30th in 1875		5.0
Highest monthly mean temperature, 1902		43.0
Lowest " " 1873		27.5
Greatest rainfall for month in 1846	(inches)	5.805
Least " " in 1904	**	0.080
Greatest number of days on which rain fell, in	1877	16
Greatest snowfall for the month in 1873	inches	19.6

#### TABLE OF DIFFERENCES.

Greatest number of days on which snow fell, 1869-73-92

Least

" " 1847 and 1850 not measurable

The signs + and - mean respectively above and below	the monthly normal.
Mean barometric pressure	-0.074 inches
Monthly range	+0.308 inches
Mean temperature	+4.4
Mean of highest temperatures	+4.1
Mean of lowest "	+4.7
Mean daily range	-0.6
Total rainfall	-0.888 inches
Total snowfall	-1.7
Mean amount of cloud	-0.09
Rain fell on the 4th, 11th, 12th, 15th, 19th, 20	th, 27th, 29th.
Heaviest fall in showers on the 19th	0.960 inches
Snow fell on the 16th, 17th, 20th, 21st, 23rd a	nd 29th.
Heaviest fall from 0.0h to 4.30h on the 17th	1.4 inches
Number of days completely clouded	4
Number of clear days	Sent in 22 of Southell
Fog on the 27th and 28th.	
Lunar halo on the 18th and 25th.	

#### DECEMBER, 1915.

RES	ULTS	OF C	BSER	VATIO	NS.	SILL	10000		for the
Mean reading of	bar	mete	r, 32 1	. incl	nes,	29	0.593	29	.644
Highest "		"	on 31	stat	7.25h	30	.140	30	.226
Lowest "		"	on 8t	h at	15h	29	0.056	28	3.936
Range of barom	eter	readir	igs,			10 10210	.084	1000	.290
Highest temper				h			40.6		47.5
Lowest tempera							9.8	ioni a	-2.3
Range for the m			C OISU	6			30.8		
Mean of the hig			org				33.0	14	49.8
Mean of the low				Par il			22.2	TOTAL COLE	32.5 20.0
Mean daily rang		sacring	80,				10.8		12.5
Mean from max		min					27.6		26.3
Mean from 6 hor							27.6	STATE OF THE PARTY	20.3
Mean humidity,		DOL YO	oroms				78	in he	82
Mean force of va	nour	. (	188 To			0	.110	0	.128
Mean wt. of vap			ı. ft. c	of air.	grain		1.4	0	1.3
Mean additional	wt. 1	eanir	ed for	sat'r	ora.	ins	0.3	HINT NO.	1.0
Mean weight of	a cul	oic for	ot of a	ir. gr	ains.		63.0	5	65.1
Highest solar(bl							98.5		00.1
Lowest (radiatio	n) or	31st		DATE OF THE			2.6		
Monthly range						and the same	95.9	DIPENTS	
Fall of snow				iı	iches		17.5		13.0
Number of days	on	which	snow	fell			11		13.1
Fall of rain					ches	0.	770		531
Number of days	on w	hich i	rain fe	ell,			4	wol lo	6.3
Mean amount of	cloud	(1.0 ir	idicat	ingov	ercas	stsky)	,.73		.77
No. of hours in the	N.	N.E.	E.	S.E.	s.	s. w.	w.	N. W.	c.
month in which the	146	41	62	18	25	95	214	143	0
Total number of Mean velocity Highest velocity Highest daily av Lowest " Number of days	at 1	3h on veloc	the s	29th f	rom 20th 31s	the no	orthe	ast	10,62 14. 4 21. 6.

#### DECEMBER, 1915.

EXTREME READINGS DURING 76 YEARS.	
Highest reading of barometer on 1st in 1887	30.594
Lowest " " on 9th in 1855, 14th in 1856	28.459
Highest temperature on the 31st in 1875	61.0
Lowest " " 21st in 1871	- 21.0
Highest monthly mean temperature, 1889	34.3
Lowest " " 1876	17.2
Greatest rainfall for month in 1841 (inches)	6.600
Least " " in 1840 and 1845 "	0.000
Greatest number of days on which rain fell, in 1889 and 19	11 14
Greatest snowfall for the month in 1872 (inches)	38.0
Least " " " in 1877 (inches)	0.3
Greatest number of days on which snow fell, in 1872	24

#### TABLE OF DIFFERENCES.

The signs + and - mean respectively above and below the	nonthly normal.
Mean barometric pressure	-0.051 inches
Monthly range	-0.206 inches
Mean temperature	+1.3
Mean of highest temperatures	+0.5
Mean of lowest "	+2.2
Mean daily range	-1.7
Total rainfall	-0.761 inches
Total snowfall	+4.5
Mean amount of cloud	-0.04
Rain fell on the 1st, 17th, 23rd, 25th.	
Heaviest fall from 5.00h to 21.15h on the 17th	0.350 inches
Snow fell on the 2nd, 7th, 8th, 12th, 13th, 22nd, 29th and 31st.	23rd, 25th, 26th,
Heaviest fall at intervals on the 25th	5.6 inches
Number of days completely clouded	9
Number of clear days	0
Fog on the 17th and 18th.	

#### SUMMARY OF OBSERVATIONS, 1915.

RE	SULTS	OF OI	BSERV	ATIO	NS.	IIB II		pa	for the
Mean reading of	the l	arom	eter,	32° F.	, inch	es 29.	618	29.	619
				uary			232	30.	371
Lowest "	625	28.	707						
Range of baron	eter r	eadin	gs			" 1.	607	1.	664
Highest tempera				th,			87.5		01.2
Lowest tempera	ture	n Jan	nuary	22nd		2	1.0		12.0
Range for the y						8	88.5	10	03.2
Mean of the hig	hest r	eadin	gs	131 4	name	4	54.9	All lar	52.5
Mean of the low							38.8		36.3
Mean daily rang	ge	11/17		ar Ref	eles ay	08 1	16.1		6.1
Mean from max		min.		3 10 1		1	16.8		4.4
Mean from 6 ho	ur obs	ervat	ions	. 112211		4	6.1	1110	10000
Mean humidity							75		77
Mean force of va	apour	Henry				0.	230	0.	264
Mean wt. of var	2500	a cu	. foot	of air	r. gra		2.6		2.7
Mean additional					. 0		1.1		
Mean weight of							12.4	54	3.6
Highest solar (bl							13.8		
Lowest (radiatio							6.0		Great!
Yearly range		-					9.8	1407 70	THE REAL PROPERTY.
Fall of snow					inch		33.6		86.0 4
Number of days	on w	hich s	now	fell			46		32.9
Fall of rain				1011	inch	es 28.	2 10 2 1		863
Number of days	on w	hich r	ain f	11	111011		110	The state of the state of	2.9
Mean amount of					rances			vital	.62
arcuir amount of	l	(1.011	, arear	ing o	CI Cais	USKy)	.00	almin	.02
No. of hours in the	N.	N.E.	E.	S.E.	S.	s.w.	w.	N.W.	C.
year in which the	1268	1353	926	314	919	1134	1057	842	194
wind was	1200	1999	920	514	919	1134	1957	842	47
Total number of	mile	, monte	toned	dont	4.1	0,0 (1)	ich U	10	0.004
Mean velocity,	innes	regis	berea	duri	ig one	year	Was	10	3,994
Highest velocity	T on	O.	A 6	41		1			11.9
Highest deile	OH E	rug al	u, II	om th	e nor	meast	State of		48
Highest daily a	verag	e velo	city	on Ja	n. 7th				31.3
Least daily aver	age v	erocit	y on	Jan. I	ith	BEE!		1292	3.5
Number of days	durir	ig the	year	on w	nich	gales	occur	red	33

#### SUMMARY, 1915.

ABSOLUTE	EXTREMES	DURING	76	YEARS
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Readings	of the	barometer,	in	inches.
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Highest monthly mean, February, 1906,	29.819
Lowest " " March, 1859,	29.412
Highest yearly " 1849,	29.668
Lowest " " 1864,	29.560
Greatest monthly range of barometer, January, 1870,	2.046
Least " " " June, 1841,	0.425
Highest reading, January 8th, 1866,	30.940
Lowest " January 2nd, 1870	28.166
Extreme range	2.774
Temperatures.	
Highest monthly mean, July, 1868,	75.8
Lowest " " February, 1875,	10.2
Highest yearly " 1913,	48.0
Lowest " " 1875,	40.8
Highest reading on July 3rd, 1911,	103.2
Lowest reading on January 10th, 1859,	- 26.5
Rainfall and snowfall, in inches.	
Greatest rainfall in a month, September, 1843,	9.760
Greatest number of rainy days in a month, May, 1890,	23
Greatest rainfall in a year, 1843,	43.555
Least " " " 1874,	17.574
Greatest number of rainy days in a year, 1890,	145
Least " " " " " 1841,	80
Greatest fall of snow in a month, March, 1870,	62.4
Greatest number of days of snow in a month,	
December, 1872, and December, 1870,	24
Greatest fall of snow in a year in 1870,	122.9
Least " " " " " " 1899,	31.8
Greatest number of days of snow in a year, 1859,	87

Least

33

MONTHLY TABLES FO	D ELOH HOHD	OF PECOPDED	CHINCHINE 1015
MONTHLY TABLES FO	R BACH HOUR	OF RECORDED	SUNSHINE-1910

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	2.8	9.2	11.3	11.6	13.0	10.0	9.6	8.0	2.3	0	0	0
February.	0	0	0	0	2.2	5.3	6.8	8.6	9.9	9.7	10.4	8.6	8.8	8.0	2.8	0	0
March.	0	0	0	0.2	12.9	19.1	21.7	22.6	21.6	22.1	22.7	21.7	19.6	19.0	8.4	0	0
April.	0	0	0.3	8.9	13.5	17.8	18.0	19.9	18.2	20.3	19.5	16.4	17.7	15.0	11.4	3.5	0
May.	0	0	7.3	16.5	18.8	18.9	17.0	18.7	16.8	16.1	18.0	18.0	17.6	16.5	15.8	12.7	1.5
June.	0	0.3	11.2	18.3	17.9	20.5	20.6	20.4	22.4	21.3	22.3	22.9	23.0	20.4	20.9	16.6	2.5
July.	0	0	6.2	15.7	15.5	15.4	20.7	19.1	19.6	19.7	18.1	17.2	16.8	16.6	16.3	15.6	5.3
August.	0	0	0	9.2	16.4	18.8	18.1	18.9	19.9	19.4	20.1	18.8	19.4	15.7	13.7	5.8	0.2
September.	0	0	0	2.7	15.1	18.1	18.5	20.4	21.3	22.8	22.6	21.6	20.6	17.7	8.8	0	0
October.	0	0	0	0.2	8.4	15.9	19.4	19.5	19.1	17.6	17.6	15.5	16.1	12.2	0.4	0	0
November.	0	0	0	0	3.4	8.0	10.3	11.7	13.0	12.9	13.0	9.8	7.7	3.2	0	0	.0
December.	0	0	0	0	0.1	6.2	10.1	14.7	13.7	13.4	11.9	10.2	8.6	1.6	0	0	0
Total hours.	0	0.3	25.0	71.7	124.2	166.8	190.4	205.8	207.1	208.3	206.2	190.3	183.9	148.2	98.5	54.2	9.5

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# TOTAL AMOUNT OF SUNSHINE RECORDED ON EACH DAY-1915.

Month.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.
January.	2.4	0.2	3.6	5.6	6.2	0	0	0	1.8	0	0.7	1.3	5.2	1.6	0.4	0	3.8
February.	0	0	7.3	0.3	0	0.1	0	4.1	0.7	2.5	0	5.7	0	0.4	0	0	6.5
March.	9.0	5.9	9.8	10.3	0	0	3.0	10.4	10.0	8.5	8.1	10.5	9.9	10.2	9.0	10.7	10.4
April.	0.7	4.1	7.6	11.8	0	4.9	10.7	10.1	3.7	3.0	2.2	T	12.1	12.3	10.6	т	12.5
May.	0.2	3.1	8.5	0	2.6	10.6	0.1	12.0	6.7	12.9	13.2	8.2	5.9	13.5	11.7	0	4.4
June.	12.6	6.6	8.5	11.4	13.5	13.1	2.4	13.7	10.2	6.0	5.3	12.4	6.1.	13.4	2.8	12.1	10.2
July.	7.3	5.0	3.2	9.6	9.5	13.9	2.1	10.4	14.3	10.2	1.3	6.4	10.9	12.4	0	5.2	12.5
August.	10.5	2.5	0	0 -	4.4	5.3	8.3	2.2	8.4	12.8	10.6	0.7	6.2	8.1	6.4	10.0	10.9
September.	10.2	10.4	9.7	6.8	0.1	4.4	0.4	5.0	9.1	9.4	6.1	0.2	5.2	10.7	7.1	5.7	8.5
October.	0	2.1	6.9	6.8	0.8	1.9	7.4	7.0	0.7	7.4	8.1	4.5	4.7	0.2	0	6.0	8.9
November.	1.9	6.5	4.4	0	0.4	0.6	5.7	1.9	8.1	7.4	0.3	8.0	9.0	1.2	2.7	1.2	7.5
December.	0.8	5.9	3.0	2.5	0	7.7	0.1	0	8.7	7.2	6.7	2.8	0	6.0	6.9	3.1	0

TOTAL AMOUNT OF SUNSHINE RECORDED ON EACH DAY-1915, (Continued).

Month.	18.	19.	20.	21.	22.	23.	24.	52.	26.	27.	28.	29.	30.	31.	Monthly Total	Monthly Per- centage
January.	0	1.4	0.9	3.4	0	0	7.8	1.0	4.1	7.2	4.7	6.3	8.2	0	77.8	27
February.	9.9	9.2	5.9	9.2	0	0	0	T	0.1	8.6	10.8	. 0	2		81.3	23
March.	8.1	5.9	9.4	0	0	9.6	6.9	0	7.2	7.7	6.2	5.3	3.8	5.8	211.6	58
April.	6.2	9.5	9.5	12.7	1.2	2.5	8.6	7.4	11.3	4.7	9.9	10.6	0	N.F.	200.4	50
May.	11.0	13.5	1.4	0	6.5	2.2	9.6	6.8	6.7	11.9	5.6	13.3	14.1	14.0	230.2	1 51
June.	9.2	3.1	10.4	10.5	6.0	4.9	12.4	9.5	14.2	13.3	12.5	10.4	4.9		281.6	61
July.	9.8	2.4	11.7	4.4	12.2	13.7	10.6	0.4	2.7	10.5	0.1	10.9	7.9	6.3	237.8	51
August.	12.5	10.7	11.0	0	1.2	11.1	4.1	3.3	11.7	12.2	8.6	4.5	4.3	11.9	214.4	50
September.	6.2	9.9	8.4	7.2	11.3	8.2	5.9	2.5	3.0	8.1	10.4	10.6	9.5		210.2	56
October.	0.2	4.9	2.0	9.6	9.9	10.3	9.7	8.0	7.8	3.8	4.8	2.2	9.6	4.7	160.9	46
November.	7.7	0	1.2	3.6	3.1	1.0	2.7	0.2	2.6	0.2	1.3	1.0	1.6		93.0	32
rnational From the ISC co	llection sc	anned b	ov SISM	os. <b>.6</b>	0	0.1	0	6.6	0	4.8	0	0	4.7	2.8	90.5	33

#### SUMMARY OF SUNSHINE.

#### BRIGHT SUNSHINE RECORDED.

		1915		Mean	from 1882	om 1882 to 1910.		
	Number of days.	Number of hours	Percentage of sunshine.	Number of days,	Number of hours.	Percentage of sunshine.		
January	22	77.8	27	20	77.9	27		
February	17	81.3	28	22	108.1	37		
March	26	211.6	58	25	150.0	40		
April	28	200.4	50	25	190.7	47		
May	28	230.2	51	29	218.9	48		
June	30	281.6	61	29	260.0	56		
July	30	237.8	51	30	282.2	60		
August	28	214.4	50	30	252.7	60		
September	30	210.2	56	28	207.8	55		
October	29	160.9	46	28	149.3	44		
November	28	93.0	32	22	85.3	29		
December	21	90,5	33	20	65.2	24		
Year	317	2089.7	45	308	2048.1	46		

# EARTHQUAKE RECORDS BY MILNE SEISMOGRAPH.

P.T.—Preliminary Tremors. 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	E		P.T.		L.W,	N	lax	1	End.	Max. Amplitude.	Chola M	ation.	REMARKS.
			H.	M.	H.	M.	H.	M	H.	M.	М. М.	H.	M.	
424	Jan.	4			10	7.7	10	10.2	10	24.0?	0.2	0	16.3	
1425 1426 1427 1428 1429 1430	66	5	14	59.6	15		15		16	17.4?		1	17.8	
128			16		16	51.7		-	17	4.4	0.2	0	19.4	May not be sesmic.
1427	66	5	20	10.0	17	28.7	***		17	32.1	0.1	0	3.4	NEW TERMS IN THE RESERVE OF THE RESE
199	46	5 5 5	23	45.8	23	55.1	0	12.7	i	27.6	0.7	1	41.8	
120	Jan.	7	12	37.02		00.1			12	54.8	0.05	0	17.8	
1420	66	11	0	2.5	0	24.2	0	28.3	0	51.4	0.8	0	48.9	P. doubtful.
LTOU			0	7.1	0	21.2						1	39.200.3333	
1431	**	12	4	39.9	2 14				4	42.9	0.05	0	3.0	The second secon
1432	"	13	7	12.2	7	25.1	7	32.4		34.0	2.8	1	21.8	Italy.
1402	11.	10	1	12.2	7	30.7		02.1		01.0				
1499	**	14	14	16.2	14	36.7		• • • • • •	14	39.4	0.1	0	23.2	
1433	66	17	7	57.1	8	2.8	1050		8	6.9	0.1	0	9.8	Doubtful as to being seismic
1434 1435 1436 1437		22		01.1	5	45.3			5	48.0	0.05	0	2.7	
1490	66	22 22	6	3.0	0	40.0			6	4.0	0.05	0	1.0	
1497	66	26	Pl	24.9	1	49.6		300000	2	27.0	0.1	1	2.1	
1451		20	sl	30.6	1	54.5			-	2	0.1			
1438	66	30	101	00.0	8	47.0			8	53.2	0.2	0	6.2	
1439	Feb.		9	13.0		23.0	9	24.5	9	31.1	0.4	0	18.1	STATE OF THE PARTY
1499	Leb.	20	9	15.6		20.0	18	24.0	0	OILL	0.1	-		
1440	**	25		10.0	15	23.0			15	33.0	0.05	0	10.0	
1440	1 200	25	20	54.8		03.4	91	04.7		1.1C.	0.3	1		
$1441 \\ 1442$		28		24.9				3.2	21	24.0		1	59.1	
1442		20	10	24.0	20	0.4		7.4	21	24.0	0.4		-	
1443	Mar.	5	1 3		4	35.1	4	35.7	4	52.0		0	16.9	P. not recorded.

1444	ME		1110	24.12	an = 1									
1445	MIN			54.0					119	55.03	0.3	1.1	1.0	
		12		25.5			* 16	10.3	16			1		
1446	10	17			. 19	8.1	79007		COLUMN TO SERVICE	A.C.	0.1	1	12.5	The start of another oners
150	22 17		1 2.8	Carrier V	19			*****		A.C.	0.1			A. C. going on.
1447	44	20	22	12.6					1 00	400	CENTRE.			0 0 viii
1448		23	21					* * * * * *	. 23	14,0	0.1	1	1.4	A. C. at times
1449		:1 6	21	30.0		42.9		46.8		12.2	0.5	0	42.2	Condend 1
1410	Apr	il 2	6	2.5	6	12.1	6	14.5	6	19.8	0.2	ő		beginning and ending
1450	250	3	20	49.1	21	0.9	21	11.2		45.82	0.5		17.3	at L. W.
· · · · · · · · · · · · · · · · · · ·					21	6.7		7.11		10.01	0.5	0	56.7	
1451		3	22	0.03		5.4	22	0.5	00	00.0	Alaba	10		
1452		7		0.0.	16			6.7	22	32.6	0.1	0	32.6	D
1			11.			15.5	16	16.8	16	20.8	0.3	0	5.3	
1453	46	-			16	16.3	11.34		201	100000			0.0	
		7			16	35.8			16	43.2	0.05	0	7.4	Doubte-1 1 1
1454	66	8			14	44.2	100000	TO VENEZUE	14	51.9				Doubtful as to be seismic.
1455	6.6:	23	15	38.82	15	52.7	16	1.02			0.2	0	7.7	
1456	44	28	1	4.5	4	16.8	4			14.2	0.2	0	35.4	
1457	66	30	2	15.82			4	23.9	4	34.0	0.1	0	29.5	
1458	May					39.2			3	3.4	0.05	0	47.6	
1400	may	1	5	12.4	5	31.2	5	51.7	9	23.8	12.3	4	11.4	Kurile Island
			So	23.1			1134				1	1	11.4	Kurne Island
1459	66	1			9	25.9	9	31.1	9	58.2	0.0	10	00.00	
200			W. W.		9	29.5		01.1	0	00.2	0.2	0	32,32	
1460	66	1			11	19.7		0.0779	Distr.	20000	AUV	1	Cabal III	
1461		9	1.	91 0					11	33.0	0.1	0	13.3	
1462	**	2	4	31.2	4	44.4	4	50.7	5	20.9	0.4	0	49.7	
	**	3 3	3	45.9	3	55.1	4	5.7	4	47.52	1.3	1	1.6	
1463		3	4	50.22	5	3.1	5	27.7	9		0.4	1	1.0	
1464	"	3	6	6 42	6	21.6	6	22.9	6	40.5		100	14.00	
1465		5	12	4.8	12	20.2	12	30.8	U	40.0	0.3		7 17 17	
1466		5	13	13.22	13		12	50.6			0.3	100		
1467	**	6	12			28.7		132.00	14	6.0	0.2	0	52.8	Dual eq. Beginning mixed up
	"		12	17.5	12	29.4	12	31.8	13	1.3	0.8	0	43.8	with trailers of 1465.
1468	921	8			14	48.9?	14	52.6	15	17.0	0.3	100	10.0	with trailers of 1405.
		- SXE			14	52.2					150	100	0908	
1469	**	12	10	43.92	11	4.2	11	13.5	12	13.0	0.0	12	20.4	
1470	4.6	12	17		17	15,6	17				0.3	1	29.1	
		LESSO.	AW.		11	10,0	11	16.5	17	27.9	0.2	0	20.2	

No.	Date	Date P, T.		L. W.   Max.		End		Max. Duration		Dung to	n: REMARKS		
	1915	Comn	nence.	Com	mence	1	wax.		End	Amplitude	1	Juration	REMARKS
147	May 1		12.0	7	24.0	7	32.1	8	6.1	0.3	0	54.1	
147:			27.4	15	11.0	. 13	30.2	13	40.4	0.1	0	13.0	A mile continue of 1800-
147				15	11.8 11.1		16.4	15 5	15.7 45.1	0.1	0	3.9 34.0	Repeat 5h 29.5m.
	41 - 0	1	7 3		a.A. I	5	20.6	1	10.1	0,3		7 3	
147				0	34.4			0	56.7	0.05	0	22.3	
147	-	1 14	57.62	7 15	4.7 7.5	100000	11.3	7 17	8.8 26.2?	$0.05 \\ 13.2$	0 2	4.1 28.6	P.T's may not have been recorded
147	8 "	1 21	23.4	21	38.2		11.5	22	19.3	0.05	0	55.9	
147		1 22	30.1?	22	44.8		56.0	23	21.3	0.2	0	51.2	
148		3 15	100	22	52.0	10	0	10	10	0.0	0	100	
148		6   15   20	48.8	15 20	55.5 39.4		57.2 48.7	16 21	1.6 8.2?	0.2 0.3	0	12.8 46.7	
	102 0			20	41.7	1		-		100			
148: 148:		3 21	40.8	21	49.4	21	51.5	3	32.0	0.5	5	51.2	
148		7		12 22	27.9 48.9		52.7	12 23	36.0 6.9	$0.05 \\ 0.2$	0	8.1 18.0	
	711			22	52.0	22	04.1	40	0.8	0.2		10.0	
148				7	27.2			7	36.8	0.1	0	9.6	
1486 1487			• • • • •	6 3	43.4 44.0	6 3	44.0 45.3	6	49.8	0.1	0	6.4 29.5	
1488	3 " 2		1000	13	5.3	9	40.0	13	13.5 13.4	0.9	0	8.1	
1489	" 2	3 4	6.1	4	17.6	4	17.6	4	34.0	0.4	0	27.9	Characteristic of 2 quakes very
1490 1491				5	12.5	5	12.7	5	- CONTROL	0.4	0	26.8	similar. S. California.
1492			.C.	16 14	16·6 42.1	16 14	18.6 55.4?		C.	$0.3 \\ 0.1$			
				14	53.6	**	00.41			0.1		W 73	
	July 2		4.9	16	9.8			16	15.0	0.1	0	10.1	- Reputon
1494 1495			4.3	21	30.4	21	22.5	21	40.7 51.2	0.1	0	10.3 46.9	
PILO	VIVE 33	21	8.6	HA	20.0	10	44.0	21	01.2	0.4	1	10.0	
		1	- 1						-			-	
-	_												
1496	July 31	1 4	11.8	2	1.0	2	11.7	5	20.8	3.4	3	39.0	
1496	July 31		11.8	2	1.0	2	15.1	5	20.8	3.8	3	39.0	
1496 1497	Aug. 3	s1 5	51.8 27 3?		1.0					3.8 3.2	3	39.0	1497-1498, possibly two quakes.
1497 1498	Aug. 3	13 2 14	51.8 27.3? 1 0.2? 1	13 14	43.5 13.1	2 14	15.1 17.4 24.5	i. 15	46.9	3.8 3.2 2.2			Service In the service of the servic
1497	Aug. 3	13 2 14 13 4	51.8 27.3? 0.2? 14.8	13 14	43.5	2	15.1 17.4 24.5			3.8 3.2	3	39.0	1497-1498, possibly two quakes.  Marked little disturbance.
1497 1498	Aug. 3	13 2 14 13 4 13 4	51.8 27.3? 1 0.2? 1 14.8 51.0	13 14	43.5 13.1	2 14 14	15.1 17.4 24.5	i. 15	46.9	3.8 3.2 2.2			Service In the management of t
1497 1498 1499 1500	Aug. 3 " 6 " 7	13 2 14 13 4 s13 6 15 5 s15 3	51.8 27.3? 0.2? 14.8 51.0 31,7	13 14 13	43.5 13.1 58.9 46.7	14 14 15	15.1 17.4 24.5 8.4 49.5	15 14 16	46.9 55.1 11.4	3.8 3.2 2.2 0.8 0.8	1 0	10.3 39.7	Service In the service of the servic
1497 1498 1499	Aug. 3	13 2 14 13 4 13 4 15 5 15 5 2 4	51.8 27.3? 0.2? 14.8 51.0 31,7 39.9 40.0	13 14 13	43.5 13.1 58.9	14 14 15	15.1 17.4 24.5 8.4	15 14	46.9 55.1	3.8 3.2 2.2 0.8	1	10.3	Marked little disturbance.
1497 1498 1499 1500	Aug. 3 " 6 " 7	13 2 14 13 4 13 4 15 5 15 5 2 4	51.8 27.3? 0.2? 14.8 51.0 31,7	13 14 13	43.5 13.1 58.9 46.7	14 14 15	15.1 17.4 24.5 8.4 49.5	15 14 16	46.9 55.1 11.4	3.8 3.2 2.2 0.8 0.8	1 0	10.3 39.7	Marked little disturbance.
1497 1498 1499 1500 1501	Aug. 3 " 6 " 7 " 10	s1 5 1 13 2 14 13 4 s13 5 15 5 5 15 5 5 5 5 5 5 5 5 5 5 5 5 5	51.8 27.3? 0.2? 14.8 51.0 31,7 39.9 40.0	13 14 13 15 2 9	43.5 13.1 58.9 46.7 45.6 52.3 30.2	2 14 14 15 2	15.1 17.4  24.5 8.4 49.5 47.3	15 14 16 2	46.9 55.1 11.4 59.4	3.8 3.2 2.2 0.8 0.8 0.8 0.05 0.3	1 0	10.3 39.7	Marked little disturbance.
1497 1498 1499 1500 1501 1502 1503	Aug. 3 " 3 " 6 " 7 " 10 " 11 " 16	s1 5 1 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	51.8 27.32 0.22 144.8 51.0 31,7 39.9 40.0 44.3 51.1	13 14 13 15 2 9 1	43.5 13.1 58.9 46.7 45.6 52.3 30.2 31.9	14 14 15 2	15.1 17.4  24.5 8.4 49.5 47.3 33.8 50.4	15 14 16 2 9 2	46.9 55.1 11.4 59.4 59.5 42.0	3.8 3.2 2.2 0.8 0.8 0.8 0.8 0.05 0.3 0.3	1 0 0	10.3 39.7 19.4 26.9	Marked little disturbance.
1497 1498 1499 1500 1501 1502	Aug. 3 " 6 " 7 " 10 " 11	s1 5 1 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	51.8 27.32 0.22 144.8 51.0 31,7 39.9 40.0 44.3	13 14 13 15 2 9	43.5 13.1 58.9 46.7 45.6 52.3 30.2	14 14 15 2	15.1 17.4  24.5 8.4 49.5 47.3	15 14 16 2 9	46.9 55.1 11.4 59.4 59.5	3.8 3.2 2.2 0.8 0.8 0.8 0.05 0.3	1 0 0	10.3 39.7 19.4	Marked little disturbance.
1497 1498 1499 1500 1501 1502 1503 1504	Aug. 3 " 3 " 6 " 7 " 10 " 11 " 16	s1 5 1 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	51.8 27.3? 1 0.2? 1 44.8 1 51.0 31.7 1 39.9 44.3 51.1 21.4	13 14 13 15 2 9 1 1 0 1 18	43.5 13.1 58.9 46.7 45.6 52.3 30.2 31.9 45.9 7.1 11.22	14 14 15 2	15.1 17.4  24.5 8.4 49.5 47.3 33.8 50.4	15 14 16 2 9 2	46.9 55.1 11.4 59.4 59.5 42.0	3.8 3.2 2.2 0.8 0.8 0.8 0.8 0.05 0.3 0.3	1 0 0	10.3 39.7 19.4 26.9	Marked little disturbance.
1497 1498 1499 1500 1501 1502 1503 1504 1505	Aug. 3 " 6 " 7 " 10 " 11 " 16 " 19 Sept. 6	s1   5   13   2   14   13   4   15   5   5   5   5   5   5   5   5	51.8 27.32 0.22 144.8 151.0 31.7 39.9 40.0 44.3  51.1	13 14 13 15 2 9 1 1 1 18 18	43.5 13.1 58.9 46.7 45.6 52.3 30.2 31.9 45.9 7.1 11.22 23.4	2  14 14 15 2  1 1	15.1 17.4 	15 14 16 2 9 2 1 18	46.9 55.1 11.4 59.4 59.5 42.0 45.5 57.2	3.8 3.2 2.2 0.8 0.8 0.8 0.05 0.3 0.3 0.2	1 0 0	10.3 39.7 19.4 26.9 24.1	Marked little disturbance.
1497 1498 1499 1500 1501 1502 1503 1504	Aug. 3 " 6 " 7 " 10 " 11 " 16 " 19 Sept. 6	13 2 14 13 4 13 4 15 5 15 5 15 5 15 1 1 1 1 1 1 1 1 1 1	51.8 27.32 0.22 144.8 151.0 31.7 39.9 40.0 44.3 51.1 21.4	13 14 13 15 2 9 1 1 0 1 18	43.5 13.1 58.9 46.7 45.6 52.3 30.2 31.9 45.9 7.1 11.22	2  14 14 15 2  1 	15.1 17.4 	15 14 16 2 9 2	46.9 55.1 11.4 59.4 59.5 42.0 45.5	3.8 3.2 2.2 0.8 0.8 0.8 0.05 0.3 0.3 0.2 0.2	1 0 0	10.3 39.7 19.4 26.9 24.1	Marked little disturbance.
1497 1498 1499 1500 1501 1502 1503 1504 1505	Aug. 3 " 6 " 7 " 10 " 11 " 16 " 19 Sept. 6	13 2 14 13 4 13 4 15 5 15 5 15 5 15 1 1 1 1 1 1 1 1 1 1	51.8 27.32 0.22 144.8 151.0 31.7 39.9 40.0 44.3  51.1	13 14 13 15 2 9 1 1 1 18 18	43.5 13.1 58.9 46.7 45.6 52.3 30.2 31.9 45.9 7.1 11.22 23.4 34.6 6.8	2  14 14 15 2  1 1 	15.1 17.4 	15 14 16 2 9 2 1 18	46.9 55.1 11.4 59.4 59.5 42.0 45.5 57.2	3.8 3.2 2.2 0.8 0.8 0.8 0.05 0.3 0.3 0.2	1 0 0	10.3 39.7 19.4 26.9 24.1	Marked little disturbance.  Very large earthquake, In Pa-
1497 1498 1499 1500 1501 1502 1503 1504 1505 1506 1507	Aug. 3 " 6 " 7 " 10 " 11 " 16 " 19 Sept. 6 " 7	s1   5   13   2   14   13   4   13   5   5   5   5   5   5   5   5   5	51.8 27.3? 0.2? 144.8 51.0 31.7 31.7 340.0 44.3 51.1 21.4 27.8 32.7	13 14 13 15 2 9 1 1 0 1 18 18 18 1 4 4	43.5 13.1 58.9 46.7 45.6 52.3 30.2 31.9 45.9 7.1 11.29 23.4 34.6 6.8 10.2	2 14 14 15 2 1 1 1 1 1 4	15.1 17.4 24.5 8.4 49.5 47.3 33.8 50.4 39.9 41.4 44.0	15 14 16 2 9 2 1 18	46.9 55.1 11.4 59.4 59.5 42.0 45.5 57.2	3.8 3.2 2.2 0.8 0.8 0.8 0.05 0.3 0.2 0.2 39.0 37.5 0.9	1 0 0 1 1 0	10.3 39.7 19.4 26.9 24.1 46.0	Marked little disturbance.  Very large earthquake, In Pacific, off Central America.  Merged into previous quake.
1497 1498 1499 1500 1501 1502 1503 1504 1505 1506 1507 1508	Aug. 3 " 6 " 7 " 10 " 11 " 16 " 19 Sept. 6 " 7 " 7	13 2 14 13 4 13 4 13 5 15 5 5 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1	51.8 27.3? 1.0.2? 144.8 51.0 31.7 39.9 40.0 44.3 51.1 21.4 27.8 32.7 41.0?	13 14 13 15 2 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	43.5 13.1 58.9 46.7 45.6 52.3 30.2 31.9 45.9 7.1 11.22 23.4 34.6 6.8 10.2 49.7	2 14 14 15 2 1 1 1 1 4 5	15.1 17.4 	15 14 16 2 9 2 1 18 	46.9 55.1 11.4 59.4 59.5 42.0 45.5 57.2 	3.8 3.2 2.2 0.8 0.8 0.8 0.05 0.3 0.3 0.2 0.2 39.0 37.5 0.9	1 0 0 1 1 0	10.3 39.7 19.4 26.9 24.1 46.0	Marked little disturbance.  Very large earthquake, In Pacific, off Central America.
1497 1498 1499 1500 1501 1502 1503 1504 1505 1506 1507	Aug. 3 " 6 " 7 " 10 " 11 " 16 " 19 Sept. 6 " 7 " 7 " 7	13 2 14 13 4 13 4 13 5 15 5 5 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1	51.8 27.3? 1 0.2? 1 44.8 51.0 31.7 38.9.9 40.0 44.3  51.1 21.4  27.8 32.7 41.0? 00.0?	13 14 13 15 2 9 1 1 1 18 18 1 1 1 1 1 1 1 1 1 1 1 1 1	43.5 13.1 58.9 46.7 45.6 52.3 30.2 31.9 45.9 7.1 11.22 23.4 34.6 6.8 10.2 49.7 6.1	2 14 14 15 2 1 1 1 1 4 5 13	15.1 17.4 24.5 8.4 49.5 47.3 33.8 50.4 39.9 41.4 44.0 51.3 7.2	15 14 16 2 9 2 1 18  6 13	46.9 55.1 11.4 59.4 59.5 42.0 45.5 57.2	3.8 3.2 2.2 0.8 0.8 0.8 0.05 0.3 0.2 0.2 39.0 37.5 0.9 0.3	1 0 0 1 1 0	10.3 39.7 19.4 26.9 24.1 46.0	Marked little disturbance.  Very large earthquake, In Pacific, off Central America.  Merged into previous quake.  Ditto ditto.
1497 1498 1499 1500 1501 1502 1503 1504 1505 1506 1507 1508	Aug. 3 " 6 " 7 " 10 " 11 " 16 " 19 Sept. 6 " 7 " 7 " 7	13 2 14 13 4 13 4 13 5 15 5 5 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1	51.8 27.3? 1 6)2? 1 44.8 51.0 31.7 40.0 44.3 51.1 21.4 27.8 32.7 41.0? 00.0?	113 114 113 115 2 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	43.5 13.1 58.9 46.7 45.6 52.3 30.2 31.9 45.9 7.1 11.29 23.4 34.6 6.8 10.2 49.7 6.1 59.4 45.7	2 14 14 15 2 1 1 1 1 4 5	15.1 17.4 	15 14 16 2 9 2 1 18  6 13	46.9 55.1 11.4 59.4 59.5 42.0 45.5 57.2  02.0 30.9	3.8 3.2 2.2 0.8 0.8 0.8 0.05 0.3 0.3 0.2 0.2 39.0 37.5 0.9	1 0 0 1 1 0 4 0	10.3 39.7 19.4 26.9 24.1 46.0	Marked little disturbance.  Very large earthquake, In Pacific, off Central America.  Merged into previous quake.
1497 1498 1499 1500 1501 1502 1503 1504 1505 1506 1507 1508 1509 1510 1511	Aug. 3 " 6 " 7 " 10 " 11 " 16 " 19 Sept. 6 " 7 " 7 " 7 " 8	s1   5   13   2   14   13   4   13   5   15   5   5   15   5   15   1	51.8 27.3? 1 0.2? 144.8 51.0 31,7 39.9 40.0 44.3  51.1 21.4  27.8 32.7  41.0? 00.0?	13 14 13 15 2 9 1 1 0 1 18 18 18 1 4 4 4 5 5 11 13 13 13 14 13 13 14 13 14 15 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	43.5 13.1 58.9 46.7 45.6 52.3 30.2 31.9 45.9 7.1 11.2? 23.4 34.6 6.8 10.2 49.7 6.1 59.4 45.7 59.4 59.4	2  14 14 15 2  1 1 1 1 4 5 13 21 	15.1 17.4 24.5 8.4 49.5 47.3 33.8 50.4 39.9 41.4 44.0 51.3 7.2 2.69	15 14 16 2 9 2 1 18  6 13 21 	46.9 55.1 11.4 59.4 59.5 42.0 45.5 57.2  02.0 30.9 18.4 	3.8 3.2 2.2 0.8 0.8 0.8 0.3 0.3 0.2 0.2 39.0 37.5 0.9 0.3 0.2 0.2	1 0 0 1 1 0 4 0 0	10.3 39.7 19.4 26.9 24.1 46.0	Marked little disturbance.  Very large earthquake, In Pacific, off Central America.  Merged into previous quake.  Ditto ditto.
1497 1498 1499 1500 1501 1502 1503 1504 1505 1506 1507 1508 1509 1510	Aug. 3 " 6 " 7 " 10 " 11 " 16 " 19 Sept. 6 " 7 " 7 " 7 " 7	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	51.8 27.3? 1.0.2? 144.8 51.0 31.7 39.9 40.0 44.3  51.1 21.4  27.8 32.7  41.0? 00.0?	113 114 113 115 2 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	43.5 13.1 58.9 46.7 45.6 52.3 30.2 31.9 45.9 7.1 11.29 23.4 34.6 6.8 10.2 49.7 6.1 59.4 45.7	2  14 14 15 2  1 1 1 1 4 5 13 21 	15.1 17.4 24.5 8.4 49.5 47.3 33.8 50.4 39.9 41.4 44.0 51.3 7.2	15 14 16 2 9 2 1 18  6 13 21	46.9 55.1 11.4 59.4 59.5 42.0 45.5 57.2  02.0 30.9 18.4	3.8 3.2 2.2 0.8 0.8 0.8 0.05 0.3 0.2 0.2 39.0 37.5 0.9 0.3 0.2	1 0 0 1 1 0 4 0	10.3 39.7 19.4 26.9 24.1 46.0	Marked little disturbance.  Very large earthquake, In Pacific, off Central America.  Merged into previous quake.  Ditto ditto.
1497 1498 1499 1500 1501 1502 1503 1504 1505 1506 1507 1508 1509 1510 1511 1512 1513	Aug. 3 " 6 " 7 " 10 " 11 " 16 " 19 Sept. 6 " 7 " 7 " 7 " 8 " 12 " 16	s1   5   13   2   14   13   4   13   5   15   5   5   15   5   5   15   1	51.8 27.3? 1 0.2? 1 44.8 51.0 31.7 38.9.9 40.0 44.3  27.8 32.7 41.0? 00.0?  59.9? 7.0	13 14 13 15 2 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	43.5 13.1 58.9 46.7 45.6 52.3 30.2 31.9 7.1 11.22 23.4 34.6 6.8 10.2 49.7 6.1 59.4 45.7 53.4 9.9? 46.1	2 114 114 115 2 1 1 1 1 4 5 13 21 	15.1 17.4 	15 14 16 2 9 2 1 18  6 13 21  21 10	46.9 55.1 11.4 59.4 59.5 42.0 45.5 57.2  02.0 30.9 18.4  57.1 54.5	3.8 3.2 2.2 0.8 0.8 0.8 0.05 0.3 0.2 0.2 39.0 37.5 0.9 0.2 0.2 0.2 0.2 0.5 0.1	1 0 0 1 1 0 4 0 0 0	10.3 39.7 19.4 26.9 24.1 46.0 34.2 30.9 19.0 57.2 8.4	Marked little disturbance.  Very large earthquake, In Pacific, off Central America.  Merged into previous quake.  Ditto ditto.
1497 1498 1499 1500 1501 1502 1503 1504 1505 1506 1507 1508 1509 1510 1511	Aug. 3 " 6 " 7 " 10 " 11 " 16 " 19 Sept. 6 " 7 " 7 " 7 " 8 " 12	13 2 4 4 13 4 13 5 15 5 15 5 2 4 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	51.8 27.3? 1 0.2? 1 44.8 51.0 31,7 31,7 31,7 31,7 31,7 32.7 41.0? 00.0? 44.3 41.0? 00.0? 7.0	13 14 13 15 2 9 1 1 10 1 118 18 118 118 118 118 118 118	43.5 13.1 58.9 46.7 45.6 52.3 30.2 31.9 45.9 7.1 111.22 23.4 34.6 6.8 10.2 49.7 6.1 59.4 45.7 53.4 9.99	2 14 14 15 2  1 1 1 1 4 5 5 1 1 1 1 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1	15.1 17.4 	15 14 16 2 9 2 1 18  6 13 21  21	46.9 55.1 11.4 59.4 59.5 42.0 45.5 57.2  02.0 30.9 18.4  57.1	3.8 3.2 2.2 0.8 0.8 0.8 0.05 0.3 0.2 0.2 39.0 37.5 0.9 0.2 0.2 0.2 0.2 0.5 0.5	1 0 1 1 0 4 0 0	10.3 39.7 19.4 26.9 24.1 46.0 34.2 30.9 19.0 57.2 8.4 37.8	Marked little disturbance.  Very large earthquake, In Pacific, off Central America.  Merged into previous quake.  Ditto ditto.

The earthquake on the 7th was one of the largest we have recorded for a number of years.

No.	Date 1914.		P.T. Commence.	L.W.	Max.	End.	Max. Amplitude.	Duration.	REMARKS.
1516	Sept.	25		13 35.7 13 39.0			1	N. A.	
1517		28	s10 9.33	10 13.9	10 16.2		0.2	0 11.5 0 4.3	
1518		2 3		23 57.				0 4.3 0 17.8	Washington State.
1519	**	3	1 59.7 s 2 4.4	2 6.	2 0.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		The same	3.164 km. L. W. Continued for a
1520	6.6	3	6 59.6	7 7.	2 7 10.		27.0 16.0	3 41.1	long time. Nevada.
	1000		s 7 4.5		7 11.0		12.0	10 500	
1521	- 66	5		. 14 14.	5	. 14 53.	0.1	0 39.0	Capital Capital
		7.0	0 110	14 50. 6 54.		7 17.	0.2	0 32.2	personal report in account of the
1522		10	6 44.9	6 59.				-	Charles of Super-
1523		10		. 10 20.		. 10 32. 0 3 18.		0 12.0 0 23.4	TANK INCHESTING IN THE PARTY
1524 1525	66	11 11	s 2 54.6 19 40.1					0 59.7	2.109 km.
1920		11	s19 43.7				00	110.000	Medium quake well defined.
1526	Nov	. 1	0 0 0			2	. 8.0	AT SET	The same of the sa
1527	7 66	1	s 8 0.0	9 46	8 10 0.			3 35.6	1526-27. Possibly a dual quake.
1528	2000	18		. 4 51		3	0.3	No. 11	A. C. going on.
1529	33	21	s 0 26.1	4 56 0 30		8 2 42	09 5.9	DA TON	Well marked, P.T. not recorded. S. California.
1028		41	50 20.	0.00	0 33.	3 3 8.	5 7.0		S. Camorina.
150	66	90		. 5 46	0 33.	5 48.	4 0.1		Doubtful.
1530 1531		22 26		32 19 31	3 19 35			0 38.2	P.Ts, doubtful.
	No. of the		s19 29 2	2 19 34		0 5 27	0 0.8	NE ALL	P.Ts, not recorded, S. doubtful.
153	2 "	30	s 5 3.5	2? 5 6	9 5 9	0 5 21.	0.0		AND ASSESSMENT OF THE PARTY OF

1533 1534 1535	Dec "	3 7 7	s10 55.8	3 11 18	35.5 6.5 46.5		11 36.3 18 54.1	0.3 0.05	0 41.5 0 7.6	A C's going on.
1536	66	12	21 9.03 s21 13.5	21	14.7	SURVINO SE	21 535?	1.7	0 44.5	A C's going on.
1537	64	17	7 52.5 s7 58.9		1.7	8 4.8		0.3		A C's going on.
1538	66	18		. 19	8.0		19 14.9	0.2	0 6.9	
1539	**	28	23 51.4 s23 56.6	1	4.0	0 4.4		0.3		A C's going on.
1540	"	31	12 28.0 s12 31.9					1.8	0 55.9	2.380 km. Eureka California.
1541	"	31	23 13.3 s23 21.6	23	24.7	23 26.6	0 12.1	0.3	0 58.8	6.775 km.?

Period of boom 18 seconds. Pillar deviation 1 mm. = 0 50.

Monthly and Annual means of temperature of the air in each of the 43 years from 1872 to 1915, with the monthly and annual means and for three groups of 10 years and one of 11 years.

_	th	e mont	hly ar	nd ann	ual me	eans ar	id for	three g	groups	s of 10	years	and or	ne of 1	1 years	
Y	EAR	JAN	FEB	MAR	APRIL	MAY ]	JUNE	JULY	AUG	SEPT	ост	NOV	DEC	Mean Annual Temp	Differ'nce from Average
	1872 1873 1874 1875	22:4 17.7	20.7	19.9	40.5	51.9	63.7	70.2	69.5	59.1	45.5	32.9	18.7	42.92	-1.94
	1874	24.8	21.5 22.8	26.6 28.7	38.6	51.9 52.5	63.7 62.5	68.4	66.6	57.3 63.3	45.7	27.5	29.8	42.94	-1.92
	1875	16.1	10.2	24.1	34.2 36.3	52.3	60.9	66.6	65.2	55.5	47.5 43.2	34.6 31.7	25.7 27.2	44.30 40.77	-0.56 $-3.09$
	1876	29.0	23.8	26.0	38.2	51.5	65.5	68.8	70.2	57.5	42.8	37.3	17.2	43.98	-0.88
	1877 1878 1879	17.5 24.4	28.8 26.9	25.6	43.3	53.9 53.0	62.4	69.9	69.2	61.2	49.8	37.5	34.2	46.10	+1.24
	1879	20.3	17.9	37.1 29.1	48.7 39.9	54.4	62.7 61.8	72.0 68.7	68.4 65.4	61.1 56.1	49.4 54.8	36.6 35.4	24.5 26.2	47.09	+2.23
	1880	32.7	27.4	28.9	41.3	58.0	65.4	67.6	66.9	60.2	45.0	30.3	21.4	44.16 45.43	$-0.70 \\ +0.57$
	1881	16.7	19.9	30.1	39.8	58.1	59.6	70.7	69.9	67.8	49.9	37.5	34.3	46.20	+1.34
	1882 1883 1884	23.2 17.5	30.3 20.1	31.7 21.9	40.0 38.3	48.9	61.6	66.8	67.4	61.2	51.8	35.9	26.1	45.42	+0.56
	1884	16.0	23.2	28.0	40.9	49.3 51.2	62.1 65.0	65.7 64.3	63.7 65.5	55.0 62.2	45.4 49.0	37.9 34.1	26.6 25.9	41.95	-2.91
	1885	18.0	11.1	18.4	37.7	51.7	60.6	68.3	63.5	57.0	45.8	38.6	28.2	43.79 41.57	-1.07 $-3.29$
	1886 1887	19.2 18.1	19.0	30.2	44.9	53.2	60.9	66.8	65.7	58.9	48.5	35.6	21.5	43.71	-1.15
	1888	15.0	21,7 21.9	24.8 22.4	39.3 38.9	58.5 50.6	63.8 64.4	73.1 66.2	66.2	56.4	44.2	35.1	28.4	44.14	-1.15 $-0.72$
	1889	28.0	17.7	32.9	43.5	54.0	59.7	68.8	66.0	56.5 60.0	43.4 42.7	37.4 38.6	29.7 34.3	42.70 45.44	-2.16 + 0.58
	1890	29.7	27.8	27.6	42.3	50.0	65.3	67.3	64.5	57.5	48.3	37.0	23.0	45.02	+0.16
	1891 1892	24.1 20.5	28.0 25.2	28.8 27.6	43.2 41.0	51.5 51.3	64.3	63.7	65.6	62.5	47.9	37.0	33.6	45.87	+1.01
	1893	14.7	19.2	29.2	39.2	51.9	65.0 66.4	68.1 68.2	67.4 65.7	60.1 57.0	47.7 48.9	35.3 37.3	26.0	44.61	-0.25
	1894	28.5	20.7	36.0	44.4	52.6	66.4	69.1	65.3	62.2	50.1	34.4	24.4 31.2	43.53 46.75	-1.33 + 1.89
	1895	21.6	16.8	24.5	43.3	55.4	67.9	66.2	65.1	60.6	43.3	36.7	29.8	44.28	-0.58
	1896 1897	22.2 23.1	22.6 25.0	23.6 31.6	45.8 42.8	59.8 52.5	64.7	68.7	67.5	57.4	44.8	39.4	27.8	45.36	+0.50
	1898	25.4	24.6	36.3	43.4	55.0	61.3 65.4	72.1	64.7	60.8	50.9	37.9 36.0	28.3 26.2	45.93 47.15	+1.07
	1899	22.5	19.3	28.0	44.7	55.1	65.3	68.8	69.4		50.4	40.6	28.9	45.80	+2.29 +0.94
	1											an Rental	Erich ,		
							- Charles							-	
	1000	. 98 9	1 50 6	. 00 e		1.510	. e= o		-	00.5					
	1900 1901	26.2 23.9	20.6 16.9	23.6 29.9	45.2 45.8	54.9 53.9	65.2		71.6	$\frac{63.7}{2}$		38.3	29.3 26.8	3 - 46.89 45.55	
	1902	23.6	21.6	26.8	43.6	52.8	59.4	68.2	64.7	59.4	48.3	43.0	24.8	45.57	+0.71
	1903	23.2	25.9	38.9	43.1	55.4	61.1	61.1	63.3	60.4	50.4	34.4	22.0		+0.72
	1904	16.0 17.2	13.2 16.7	28.8 30.3	38.4 41.2	55.0 52.2	63.0 63.1	67.1 69.2	64.1 67.1	58.1 61.7					
	1903 1904 1905 1906	30.9	21.8	26.8	44.1	53.2	65.1	69.6	71.0	64.8		36.0 37.1	31.2 22.9	44.53	
	1907	22.1	18.5	33.8	38.4	48.1	63.8	69.3	65.5	61.7	45.0	36.9	29.5	41.37	-0.49
	1908 1909	24.3 26.4	19.3 26.7	31.4 29.9	41.8 40.9	56.2	66.2	70.7 67.7	66.9	63.7	51.4	39.6	29.1 25.9	46.73	+1.87
	1910	25.5	21,0	38.8	46.8	53.7 52.5	65.5 64.7		67.6	60.3			21.1	46.08 46.37	$+1.22 \\ +1.51$
	1911	25.5 25.9	25.5	30.1	43.3	61.2	65.6	71.6	69.2	60.5			33.9	47.69	+2.83
	1912	13.9	19.0	25.7	41.8	53.3	62.2	69.6	63.9	62.7	50.6	40.4	₹32.6	44.81	-0.05
	1913	31.3 25.6	20.3 15.5	33.3 30.7	46.3 41.5		64.8		68.6	59.4			33.4	47.90	
	1914 1915	23.6	26.0	29.9	49.8	58.6 52.1	64.4		68.1		52.7		25.7 27.5	46.03 46.83	
M	EANS	IN I	10	11011		\$20000	110	00.0	W -8	HOLDE OF	31.0	10.0		13 30.00	1 27.21
18	372-81	22.16	21.99	27.61	40.0	53.75	62.8	2 69.0	8 67.8	4 59.9	1 47.3	6 34.1	3 25.9	2 44.39	Selles
18	882-91	20.88	22.08	26.67	40.90	51.89	62.7	7 67.1	8 65.3	1 58.7	2 46.7	0 36.7	2 27.7	3 43.96	
	892-01 002-12	22.86								6 60.2	49.0		5 27.8	7 45.48	
	72-12	22.63 22.14	20.83 21.48	31.02 28.64			63.6							8 45.56 9 44.86	
				20.01	22.00	00.02		2. 00.0	00.1	0 00.0	- TI.0	1 00.1	-1.0	12.00	

MAGNETIC SUMMARY FOR 1915

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.

				MEAN	NS.		EXTREMES.							
1915	D. West		H.		Z		I	DV	Vest	H		Z		
	Mean	Daily range	Mean	Daily range	Mean	Daily range	Mean	Max.	Min.	Max.	Min.	Max.	Min.	
January	6 26.5	6.9	.16054	.00029	.58701	.00007	74 42.3	6 46.6	6 11.9	.16084	.15992	.58727	.58667	
February	27.0	6.6	.16046	20	.58694	8	42.6	6 48.9	State of the last	.16088		.58753		
March	27.2	10.1	.16039	31	.58673	14	42.7	6 42.1	5 48.7	.16085	With the last	.58750		
April	28.1	11.9	.16041	43	.58660	16	42.8	6 49.2	6 09.1	.16187	.15943	.58725	.58535	
May	27.9	12.8	.16043	36	.58658	19	42.8	6 43.0	6 11.0	.16137	.15951	.58719	.58541	
June	28.3	11.4	.16027	41	.58644	29	42.9	8 21.5	5 06.0	.16415	.15584	.59152	.58040	
July	28.3	13.5	.16034	48	.58646	13	42.5	6 54.1	5 55.1	.16108	.15928	.58698	.58507	
August	28.6	14.4	.16026	52	.58644	15	42.9	6 46.9	5 46.0	.16222	.15866	.58836	.58518	
September	29.2	11.8	.16017	44	.58622	2i	43.1	6 56.7	5 56.7	.16076	.15882	.58674	.58468	
October	29.9	8.1	.16004	41	.58614	24	43.7	6 57.3	5 58.4	.16107	.15800	.58870	.58430	
November	30.6	8.2	.15997	32	.58595	32	43.8	7 31.3	5 48.3	.16193	.15596	.58868	.58238	
December	30.4	6.5	.16007	28	.58575	6	42.9	6 50.2	6 04.1	.16081	.15904	.58703	.58538	
	12000	10000	Philippine	37	.58644	.00017	74 42.9			_0.83	Wilder of	11000		

International From the ISC collection scanned by SISMOS Seismological

The following table gives the dates on which the ice tormed and left Toronto harbor for the past thirty years.

(This table has been kindly furnished by the Toronto Harbor Master.)

Winter	Frozen over	Clear of ice	No. of days
1885-86	January 8th	March 20th	71
1886-87	December 4th	April 12th	128
1887-88	" 24th	" 11th	85
1888-89	" 20th	March 15th	85
1889-90	March 1st	" 15th	14
1890-91	January 4th	" 20th	75
1891-92	" ŏth	" 31st	85
1892-93	December 22nd	April 7th	108
1893-94	" 30th	March 11th	70
1894-95	" 23rd	April 7th	105
1895-96	" 9th	March 28th	110
1896-97	" 22nd	" 11th	85
1897-98	" 24th	" 16th	82
1898-99	" 13th	April 8th	106
1899-00	" 28th	" Sth	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	April 5th	115
1905-06	January 8th	April 1st	82
1906-07	December 8th	March 28th	110
1907-08	January 28th	March 29th	61
1908-09	" 7th	March 31st	83
1909-10	December 29th	" 20th	81
1910-11	" 10th	" 31st	111
1911-12	January 6th	April 16th	101
1912-13	" 9th	" 20th	71
1913-14	" 14th	" 2nd	79
1914-15	December 15th	April 2nd	108