



STONYHURST COLLEGE  
OBSERVATORY

RESULTS

OF

METEOROLOGICAL & MAGNETICAL  
OBSERVATIONS

WITH REPORT AND NOTES OF THE DIRECTOR,

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1902.

CLITHEROE :

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REPORT AND NOTES.

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THE meteorographic and magnetographic instruments have been as usual in continuous operation working satisfactorily

The monthly and weekly meteorological reports, together with duplicates of the meteorological curves, have been sent regularly to the Meteorological Office. But the report to the Registrar General is no longer wanted, this report now being supplied by the Meteorological Office.

The monthly special observations of clouds and wind in connection with the international balloon ascents in 1901 were not required after the close of that year ; but the quarterly statements of magnetic calm days have been sent to the International Meteorological Committee through the Secretary of the Magnetic Section at Upsal.

The meteorological tables have been compiled from readings taken at 8-0 a.m. and 8-0 p.m., instead of 9-0 a.m. and 9 0 p.m. as in former years. This change has been found necessary, to suit

#### IV.

other collegiate arrangements, and was commenced on January 1st, 1902.

The rainfall of the year was 10.1 inches below the average, nearly  $2\frac{1}{4}$  inches less than the amount of last year ; but distributed more favourably for the general water supply. The total amount between January 1st and September 30th was  $25\frac{1}{2}$  inches, and during the same period of last year the amount was only  $20\frac{1}{2}$  inches ; between May 1st and September 30th the amounts were in 1902, 13.0 inches, and in 1901, 9.4 inches. There were no very heavy rains, and no very strong winds, the greatest day-rainfall being under one inch, and the strongest wind at 44 miles per hour.

The duration of sunshine was below the annual average by 42 hours, a little over 1%. And comparing this with the rainfall deficiency there was 22% less rain, with 1% less sunshine ; showing a more cloudy dryness than in the preceding year when the rainfall was less by 17%, and sunshine 15% longer than the annual average.

The prevailing wind of the year was from the West as shown in the Summary page. And referring the winds to two general directions N.E. and S.W., the former prevailed on 141 days, with 27,977 miles of air, and the latter on 224 days, with 58,095 miles.

The mean temperature of the year was 0.4 below the average. The summer months were cooler, July and August showing only the same mean temperature as June. The hottest day occurred in June at 82.8 ; and in the same month the remarkably low temperature of 32° was registered on the 9th.

The solar surface was observed on 217 days, very evenly distributed throughout the year, as shown in the table of dates of Solar Drawings. Drawings were made on 110 days, and on the remaining 107 days careful searching could find no disturbance. The longest period of solar calm was from June 2nd to September 18th. From September 23rd to November 25th there was an appearance of gradually increasing solar activity, but throughout December the surface was perfectly calm. The deduced mean spotted disc area for the year was 0.33 † which is in favour of returning activity. In 1900, 01, 02, the mean areas were respectively 0.55, 0.29, 0.33.

The magnetic variations have been on the whole small, and afford no indication of the period of minimum disturbance. The mean daily range of the Horizontal direction was closely the same as for the past year, being 9'.0, against 9'.1 of 1901. The greatest disturbances of the year occurred on January 15th, April 10th, and August 21st, with extreme oscillations 32', 35' and 36' respectively. These are compared with the solar surface in the following table:—

Date. Range.	Dates. Disc areas.			
Jan. 15 32'	Jan. 9	13	14	Jan. 25—Feb. 12 0
	4.0	1.0	0.6	
Ap. 10 35'	Mar. 23—	Ap. 9	Ap. 10	Ap. 11—May 12 0
	0		0.1	
Aug. 21 36'	July 29—	Aug. 23	Aug. 24	Aug. 25—Sep. 18 0
	0		0.2	

† The unit being 1/5000th of the visible disc.



The stellar spectrographic work of the Observatory during the year has made but slow progress mostly owing to the generally cloudy state of the sky after sunset, often on the most promising evenings. Omitting many failures, a series of 44 spectrographs of  $\beta$  Lyrae by the small objective prism is now ready for a supplementary paper on the violet end of the star's spectrum. But other pressing obligations connected with the physical laboratory will probably delay its publication until a more extended series is ready for discussion. Materials also for a comparative study of magnetic disturbances at different observatories have been prepared and these also must wait.

WALTER SIDGREAVES, S.J.



# Stonyhurst Observatory.

Lat. 53° 50' 40" N. Long. 9m. 52<sup>s</sup>. 68, W. Height of the  
Barometer above the sea 381 ft.

## METEOROLOGICAL REPORT.

JANUARY, 1902.

Results of Observations taken during the Month		Mean for the last 55 years.
Mean Reading of the Barometer . . . inches	29·674	29·458
Highest                    ,,                    on the 31st   ,,	30·521	30·280
Lowest                    ,,                    on the 25th   ,,	28·669	28·603
Range of Barometer Readings                    ,,	1·852	1·677
Highest Reading of a Max. Therm. on the 9th	51·9	51·4
Lowest Reading of a Min. Therm. on the 29th	20·0	20·8
Range of Thermometer Readings .....	31·9	30·6
Mean of all the Highest Readings .....	44·3	42·3
Mean of all the Lowest Readings .....	33·4	32·5
Mean Daily Range.....	10·9	9·8
Deduced Monthly Mean (from Mean of Max. and Min.) .....	38·7	37·2
Mean Temperature from Dry Bulb .....	39·4	37·3
Adopted Mean Temperature .....	39·1	37·2
Mean Temperature of Evaporation .....	37·6	36·0
Mean Temperature of Dew Point .....	35·7	33·8
Mean elastic force of Vapour .....inches	0·209	0·196
Mean weight of Vapour in a cub.ft. of air grains	2·4	2·4
Mean additional weight required for saturation,,	0·4	0·4
Mean degree of Humidity (saturation 1·00)...	0·88	0·86
Mean weight of a cubic foot of air ...grains	551·8	549·7
Fall of Rain .....	4·853	4·127
Number of days on which rain fell.....	20	20·7

## JANUARY, 1902.

No. of days in the month on which the prevailing wind was	N	E	E	SE	S	SW	W	NW
	5	1	0	1	0	20	2	2
Mean Velocity in miles per hour	5·7	10·8	0	17·8	0	14·2	19·0	10·9
Total No. of miles for each Direction	680	260	0	428	0	6795	914	523

The total No. of miles registered during the month was 9600.

The max. Velocity of the wind was 43 miles per hour, on the 5th at 1 a.m.

Mean amount of Cloud (an overcast sky being indicated by 10·0) 7·5

In the month of January the highest reading of the Barometer during 55 years, was on the 9th, in 1896, and was ... 30·597

The Lowest ,, 26th, 1884 ,, 27·803

The highest Temperature 7th, 1887 ,, 59·9

The lowest ,, 15th, 1881 ,, 4·6

The highest adopted mean temperature of the month, 1898 43·7

The lowest ,, ,, 1881 29·2

Greatest fall of rain for the month in 1852 8·147

Least ,, ,, 1881 0·472

Greatest number of days on which rain fell 1872 31

Least ,, ,, 1879 8

### TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

Mean barometric pressure	...	...	+	0·216 inches
Monthly range	,,	,,	+	0·175 ,,
Mean of highest temperatures	...	...	+	2·0 degrees
Mean of lowest	,,	,,	+	0·9 ,,
Mean daily range	,,	,,	+	1·1 ,,
Adopted mean temperature	...	...	+	1·9 ,,
Total rainfall	...	...	+	0·726 inches

Ground frost on 12th—15th, 17th—19th, 24th—31st. Snow on 11th, 24th, 25th, 26th, 27th and 29th. Hail on 24th and 30th. Heavy rain on 3rd, 21st and 24th. Gales of wind on 1st, 5th, 6th, 9th, and 20th. Fog on 17th and 18th. Thunder on 24th. Lightning on 24th.

## FEBRUARY, 1902.

Results of Observations taken during the Month.		Mean for the last 55 years
Mean Reading of the Barometer.....inches	29.471	29.510
Highest            "            on the 1st        "	30.476	30.078
Lowest            "            on the 27th     "	28.862	28.692
Range of Barometer Readings.....	1.614	1.386
Highest Reading of Max. Therm. on the 28th	54.1	52.3
Lowest Reading of a Min. Therm. on the 11th	5.0	21.7
Range of Thermometer Readings.....	49.1	30.6
Mean of all the Highest Readings.....	40.4	44.1
Mean of all the Lowest Readings.....	27.2	33.2
Mean Daily Range.....	13.2	10.9
Deduced Monthly Mean (from Mean of Max. and Min.).....	33.4	38.1
Mean Temperature from Dry Bulb.....	33.9	38.1
Adopted Mean Temperature.....	33.7	38.1
Mean Temperature of Evaporation.....	32.2	36.6
Mean Temperature of Dew Point.....	29.5	34.3
Mean elastic force of Vapour.....inches	0.163	0.192
Mean weight of Vapour in a cub. ft. of air grains	1.9	2.4
Mean additional weight required for saturation,,	0.4	0.4
Mean degree of Humidity (saturation 1.00)...	0.85	0.87
Mean weight of a cubic foot of air....grains	554.3	549.1
Fall of rain.....inches	1.410	3.436
Number of days on which rain fell.....	13	18.0

No. of days in the month on which the prevailing wind was	N	NE	E	SE	S	SW	W	NW
		3	7	4	3	4	1	4
Mean Velocity in miles per hour	6.5	10.4	6.6	9.7	6.2	4.9	4.4	3.9
Total No. of Miles for each Direction	468	1750	634	697	596	117	424	188

The total number of miles registered during the month was 4874.  
The max. Velocity of the wind was 25 miles per hour, N.E, on the 1st, at noon.

## FEBRUARY, 1902.

Mean amount of Cloud (an overcast sky being indicated by 10·0) 7·2

In the month of February, the highest reading of the Barometer during 55 years, was on the 11th, in 1849, and was ..30·452

The lowest	„	19th, 1900	„	....27·870
The highest Temperature		8th, 1877	„	.... 58·3
The lowest	„	11th, 1902	„	.... 5·0
The highest adopted mean temperature of the month, 1869 ..				44·0
The lowest	„	„	1855	.... 28·6
Greatest fall of rain for the month in			1848	8·882in
Least	„	„	1858	0·306in
Greatest number of days on which rain fell			1868	28
Least	„	„	1858 and '95	6

## TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

Mean barometric pressure	..	..	—	0·039 inches
Monthly range	„	..	+	0·228 „
Mean of highest temperatures	..	..	—	3·7 degrees
Mean of lowest	„	..	—	6·0 „
Mean daily range	„	..	+	2·3 „
Adopted mean temperature	..	..	—	4·4 „
Total rainfall	„	..	—	2·026 inches

Ground frost on 1st—18th, 26th and 27th. Snow on 4th, 6th—9th, 11th, 12th and 14th. Fog on 14th. Lunar Halo on 16th.

The shade temperature 5°·0 on the 11th is the lowest on record for the month of February.

## MARCH, 1902.

Results of Observations taken during the Month.	Mean for the last 55 years	
Mean Reading of the Barometer.....inches	29.365	29.462
Highest ,, on the 17th ,,	29.794	30.068
Lowest ,, on the 24th ,,	28.565	28.652
Range of Barometer Readings .....	1.229	1.416
Highest Reading of a Max. Therm. on the 1st	54.0	57.1
Lowest Reading of a Min. Therm. on the 23rd	27.3	22.3
Range of Thermometer Readings .....	26.7	34.8
Mean of all the Highest Readings.....	50.2	47.3
Mean of all the Lowest Readings .....	35.7	34.0
Mean Daily Range.....	14.5	13.3
Deduced Monthly Mean (from Mean of Max and Min.).....	42.0	39.7
Mean Temperature from Dry Bulb.....	42.5	40.0
Adopted Mean Temperature .....	42.3	39.9
Mean Temperature of Evaporation .....	40.5	37.9
Mean Temperature of Dew Point .....	38.3	35.4
Mean elastic force of Vapour .....	0.232	0.206
Mean weight of Vapour in a cub.ft.of air grains	2.7	2.4
Mean additional weight required for saturation,,	0.5	0.5
Mean degree of Humidity (saturation 100)...	0.86	0.85
Mean weight of a cubic foot of air.... grains	541.8	546.5
Fall of rain..... inches	3.733	3.275
Number of days on which Rain fell .....	22	17.9

No. of days in the month on which the prevailing wind was	N	NE	E	SE	S	SW	W	NW
	0	0	1	1	6	12	11	0
Mean Velocity in miles per hour	0	0	6.0	10.5	7.3	11.2	12.4	0
Total No. of miles for each Direction	0	0	143	251	1044	3215	3265	0

The total number of miles registered during the month was 7918.  
 The max. Velocity of the wind was 40 miles per hour, on the 8th and 20th at Midnight and 2 p.m. Dir. W. b S. and S.W.

## MARCH, 1902.

Mean amount of Cloud (an overcast sky being indicated by 10·0)	7·9
In the month of March, the highest reading of the Barometer during 55 years, was on the 6th in 1852, and was . . .	30·401
The lowest                   ,,                   3rd, 1897                   ,,	..28·157
The highest Temperature   ,,                   25th, 1871                   ,,	.. 68·0
The lowest                   ,,                   ,,                   6th, 1886                   ,,	.. 11·5
The highest adopted mean temperature of the month, 1871..	44·0
The lowest                   ,,                   ,,                   1855 and 1892..	35·6
Greatest fall of rain during the month in                   ..	1896...7·079 in
Least                   ,,                   ,,                   ..	1852...0·352 in
Greatest number of days on which rain fell, 1859, 61, 68 & 72	28
Least                   ,,                   ,,                   ..	1852.. 3

## TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

Mean barometric pressure	...	— 0·097 inches
Monthly range           ,,           ..	...	— 0·187   ,,
Mean of highest temperatures	...	+ 2·9 degrees
Mean of lowest           ,,           ...	...	+ 1·7   ,,
Mean daily range       ,,           ...	...	+ 1·2   ,,
Adopted mean temperature	... ..	+ 2·4   ,,
Total rainfall           ... ..	... ..	+ 0·458 inches

Ground frost on 1st—6th, 13th, 21st—24th, 26th, 27th and 30th. Snow on 20th, 21st, 23rd, 24th and 26th. Hail on 20th, 21st, 22nd and 26th. Heavy rain on 31st. Gales of Wind on 8th and 20th. Fog on 5th, 6th and 7th. Lunar Halo on 16th. Thunder and Lightning on 20th.



## APRIL, 1902.

Results of Observations taken during the Month.		Mean for the last 55 years.
Mean Reading of the Barometer..... inches	29·536	29·484
Highest " on the 7th "	29·967	29·965
Lowest " on the 1st "	29·101	28·815
Range of Barometer Readings..... "	0·866	1·150
Highest Reading of a Max. Therm. on the 19th	63·4	66·0
Lowest Reading of a Min. Therm. on the 7th	27·0	28·0
Range of Thermometer Readings .....	36·4	38·0
Mean of all the Highest Readings.....	54·2	55·8
Mean of all the Lowest Readings.....	35·9	37·7
Mean Daily Range .....	18·3	18·1
Deduced Monthly Mean (from Mean of Max. and Min.).....	43·6	44·5
Mean Temperature from Dry Bulb .....	44·5	44·7
Adopted Mean Temperature .....	44·1	44·6
Mean Temperature of Evaporation .....	40·7	41·7
Mean Temperature of Dew Point.....	36·7	38·2
Mean elastic force of Vapour.....inches	0·218	0·235
Mean weight of Vapour in a cub.ft. of air grains	2·5	2·7
Mean additional weight required for saturation,,	0·8	0·7
Mean degree of Humidity (saturation 1·00 ..	0·75	0·79
Mean weight of a cubic foot of air .. grains	543·6	542·0
Fall of Rain .....	2·483	2·410
Number of Days on which rain fell .....	14	15·8

No. of days in the month on which the prevailing wind was	N	NE	E	SE	S	SW	W	NW
		5	7	1	5	3	2	7
Mean Velocity in miles per hour	6·3	9·6	5·8	13·5	13·0	12·0	12·5	C
Total No. of miles for each Direction	756	1612	139	1618	937	575	2095	0

The total number of miles registered during the month was 7732.  
 The max. Velocity of the wind was 35 miles per hour, on 1st and 22nd, at 4 p.m. and 4 a.m. Dir. W.S.W. and S.E.

## APRIL, 1902.

Mean amount of Cloud (an overcast sky being indicated by 10·0)	6·8
In the month of April, the highest reading of the Barometer during 55 years, was on the 17th, in 1887, and was	30·251
The lowest                   ,,           20th, 1868                   ,,	28·358
The highest Temperature    14th, 1852                   ,,	74·1
The lowest                   ,,           13th, 1892                   ,,	20·8
The highest adopted mean temperature of the month, 1865 ...	48·5
The lowest                   ,,                   ,,                   1879 ...	40·7
Greatest fall of rain during the month in           1867	5·672 in
Least                   ,,                   ,,                   1852	0·478 in
Greatest number of days on which rain fell   1867	26
Least                   ,,                   ,,                   1852	8

## TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

Mean barometric pressure ... ..	+ 0·052 inches
Monthly range           ,,   ... ..	— 0·284   ,,
Mean of highest temperature ... ..	— 1·6 degrees
Mean of lowest           ,,   ... ..	— 1·8   ,,
Mean daily range       ,,   ... ..	+ 0·2   ,,
Adopted mean temperature ... ..	— 0·5   ,,
Total rainfall           ... ..	+ 0·073 inches

Ground frost on 2nd, 3rd, 6th—15th, 17th—19th, 23rd and 29th.  
 Snow on 3rd and 13th. Hail on 3rd, 4th and 22nd. Fog on 16th.  
 Heavy rain on 15th. Thunder on 3rd and 23rd. Lightning on 3rd

## MAY, 1902.

Results of Observations taken during the Month.		Mean for the last 55 years.
Mean Reading of the Barometer	inches 29·563	29·522
Highest	„ on the 25th „ 30·057	29·964
Lowest	„ on the 17th „ 28·771	28·938
Range of Barometer Readings .....	1·286	1·026
Highest Reading of a Max. Therm. on the 23rd	65·0	71·8
Lowest Reading of a Min. Therm. on the 9th	28·3	31·4
Range of Thermometer Readings .....	36·7	40·4
Mean of all the Highest Readings .....	55·7	59·8
Mean of all the Lowest Readings .....	38·9	41·9
Mean Daily Range .....	16·8	17·9
Deduced Monthly Mean (from Mean of Max. and Min.) .....	45·6	49·1
Mean Temperature from Dry Bulb .....	46·7	49·6
Adopted Mean Temperature .....	46·2	49·3
Mean Temperature of Evaporation .....	42·8	46·0
Mean Temperature of Dew Point .....	39·0	42·4
Mean elastic force of Vapour .....	inches 0·238	0·274
Mean weight of Vapour in a cub. ft. of air grains	2·7	3·1
Mean additional weight required for saturation,,	0·9	0·9
Mean degree of Humidity (saturation 1·00)...	0·77	0·76
Mean weight of a cubic foot of air .....	grains 541·8	537·3
Fall of Rain.....	inches 3·086	2·605
Number of days on which Rain fell .....	22	15·4

No. of days in the month on which the prevailing wind was	N	NE	E	SE	S	SW	W	NW
	7	0	0	1	0	9	6	8
Mean velocity in miles per hour	8·1	0	0	6·1	0	11·6	10·2	10·8
Total No. of miles for each Direction	1353	0	0	146	0	2500	1473	2075

The total number of miles registered during the month was 7547  
 The max. Velocity of the wind was 29 miles per hour, on the 28th, at noon. Dir. S.W.

## MAY, 1902.

Mean amount of Cloud (an overcast sky being indicated by 10·0)	8·1
In the month of May, the highest reading of the Barometer during 55 years, was on the 2nd in 1895, and was	30·217
The lowest " 28th, 1877 "	28·559
The highest Temperature 19th, 1864 "	82·5
The lowest " 4th, 1855 "	23·5
The highest adopted mean temperature of the month, 1848	55·1
The lowest " " 1855	45·0
Greatest fall of rain during the month in 1886	6·224 in
Least " " 1859	0·249 in
Greatest number of days on which rain fell 1872	28
Least " " 1853 and 1896	5

## TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

Mean barometric pressure .. ..	+ 0·041 inches
Monthly range " .. ..	+ 0·260 "
Mean of highest temperatures .. ..	— 4·1 degrees
Mean of lowest " .. ..	— 3·0 "
Mean daily range " .. ..	— 1·1 "
Adopted Mean temperature .. ..	— 3·1 "
Total rainfall .. ..	+ 0·481 inches

Ground frost on 2nd, 6th—11th, 13th, 14th, 20th and 21st.

Snow on 6th and 13th. Hail on 3rd, 5th, 6th, 7th and 9th.

Thunder on 6th and 9th. Lightning on 6th.

JUNE, 1902.

Results of Observations taken during the Month.	Mean for the last 55 years.	
Mean Reading of the Barometer.....inches	29·516	29·547
Highest „ on the 24th „	29·877	29·904
Lowest „ on the 7th & 12th „	29·080	29·033
Range of Barometer Readings .....	0·797	0·871
Highest Reading of a Max. Therm. on the 28th	82·8	77·7
Lowest Reading of a Min. Therm. on the 9th	32·0	38·8
Range of Thermometer Readings .....	50·8	38·9
Mean of all the Highest Readings .....	66·3	66·1
Mean of all the Lowest Readings .....	47·3	47·9
Mean Daily Range .....	19·0	18·2
Deduced Monthly Mean (from Mean of Max. and Min) .....	55·0	55·2
Mean Temperature from Dry Bulb .....	55·8	55·3
Adopted Mean Temperature .....	55·4	55·3
Mean Temperature of Evaporation .....	53·5	52·1
Mean Temperature of Dew Point .....	47·8	48·6
Mean elastic force of Vapour .....inches	0·334	0·353
Mean weight of Vapour in a cub.ft. of air grains	3·8	3·9
Mean additional weight required for saturation,,	1·2	1·0
Mean degree of Humidity (saturation 1·00)..	0·76	0·78
Mean weight of cubic foot of air ....grains	530·5	531·0
Fall of Rain.....inches	1·255	3·462
Number of days on which Rain fell .....	16	16·4

No. of days in the month on which the prevailing wind was	N	NE	E	SE	S	SW	W	NW
		8	1	7	3	1	5	5
Mean Velocity in miles per hour	7·9	10·7	9·4	5·0	7·1	7·0	6·4	0
Total No. of miles for each Direction	1519	256	1579	362	170	842	768	0

The total number of miles registered during the month was 5496.  
 The max. Velocity of the wind was 24 miles per hour, on the 1st, at 9 a.m. Dir. N.

## JUNE, 1902.

Mean amount of Cloud (an overcast sky being indicated by 10·0)	7·8
In the month of June, the highest reading of the Barometer during 55 years, was on the 15th, in 1874, and was .....	30·219
The lowest                    "            23rd, 1893            "            .....	28·813
The highest Temperature    18th, 1893            "            .....	88·7
The lowest                    "            9th, 1902            "            .....	32·0
The highest adopted mean temperature of the month, 1858..	59·0
The lowest                    "            "            1856 and 1860..	52·2
Greatest fall of rain during the month in            1848	7·125 in
Least                        "            "            1887	0·525 in
Greatest number of days on which rain fell    1862	27
Least                        "            "            1887	4

### TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

Mean barometric pressure	..	—	0·031 inches
Monthly range	..	—	0·074    "
Mean of highest temperatures	..	+	0·2 degrees
Mean of lowest	..	—	0·6    "
Mean daily range	..	+	0·8    "
Adopted mean temperature	..	+	0·1    "
Total rainfall	..	—	2·207 inches

Ground frost on 10th.   Solar Halo on 10th.

The shade temperature 32°·0 on the 9th is the lowest on record for the month of June.

## JULY, 1902

Results of Observations taken during the Month.		Mean for the last 55 years.
Mean Reading of the Barometer . . . . inches	29.594	29.511
Highest " on the 2nd "	29.874	29.888
Lowest " on the 26th "	28.796	29.003
Range of Barometer Readings . . . . . "	1.078	0.885
Highest Reading of a Max. Therm. on the 5th	76.5	78.9
Lowest Reading of a Min. Therm. on the 1st	37.2	42.1
Range of Thermometer Readings . . . . .	39.3	36.8
Mean of all the Highest Readings . . . . .	65.4	68.1
Mean of all the Lowest Readings . . . . .	47.5	50.7
Mean Daily Range . . . . .	17.9	17.4
Deduced Monthly Mean (from Mean of Max. and Min.) . . . . .	54.6	57.8
Mean Temperature from Dry Bulb . . . . .	55.9	57.9
Adopted Mean Temperature . . . . .	55.3	57.9
Mean Temperature of Evaporation . . . . .	52.0	54.8
Mean Temperature of Dew Point . . . . .	48.8	52.1
Mean elastic force of Vapour . . . . . inches	0.346	0.389
Mean weight of Vapour in a cub. ft. of air grains	3.9	4.5
Mean additional weight required for saturation ,,	1.1	1.0
Mean degree of Humidity (saturation 1.00) ..	0.80	0.81
Mean weight of a cubic foot of air . . . . grains	532.0	527.4
Fall of Rain . . . . . inches	3.597	4.047
Number of days on which Rain fell . . . . .	15	17.8

No. of days in the month on which the prevailing wind was	N	NE	E	SE	S	SW	W	NW
	3	0	0	0	1	14	13	0
Mean Velocity in miles per hour	7.4	0	0	0	15.1	8.2	9.4	0
Total No. of miles for each Direction.	535	0	0	0	363	2765	2926	0

The total number of miles registered during the month was 6589.  
 The max. Velocity of the wind was 26 miles per hour, on the 26th and 27th, at 1 a.m. and 4 p.m. Direction S. b E. and W.

## JULY, 1902.

Mean amount of Cloud (an overcast sky being indicated by 10·0) 8·5

In the month of July, the highest reading of the Barometer

during 55 years, was on the 24th, in 1868, and was.....	30·112
The lowest                   ,,                   15th, 1877                   ,,                   .....	28·564
The highest Temperature                   20th, 1901                   ,,                   .....	89·0
The lowest                   ,,                   1st, 1857                   ,,                   .....	36·0
The highest adopted mean temperature of the month, 1901	63·2
The lowest                   ,,                   ,,                   1888	54·5
Greatest fall of rain during the month in                   ...                   1888	8·602 in
Least                   ,,                   ,,                   ...                   1868	0·669 in
Greatest number of days on which rain fell                   ...                   1861	30
Least                   ,,                   ,,                   ...                   1868	9

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TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

Mean barometric pressure                   ...                   +                   0·079 inches
Monthly Range                   ,,                   ...                   +                   0·198                   ,,
Mean of highest temperatures                   ...                   —                   2·7 degrees
Mean of lowest                   ,,                   ...                   —                   3·2                   ,,
Mean daily range                   ,,                   ...                   +                   0·5                   ,,
Adopted mean temperature                   ...                   —                   2·6                   ,,
Total rainfall                   ...                   ...                   —                   0·450 inches

Heavy rain on 8th.   Thunder on 26th.



## AUGUST, 1902.

Results of Observations taken during the Month.	Mean for the last 55 years.	
Mean Reading of the Barometer .... inches	29·503	29·495
Highest ,, on the 1st ,,	29·800	29·890
Lowest ,, on the 19th ,,	29·123	28·954
Range of Barometer Readings .....	0·677	0·936
Highest Reading of a Max. Therm. on the 16th	72·0	77·2
Lowest Reading of a Min. Therm. on the 10th	36·0	41·4
Range of Thermometer Readings .....	36·0	35·8
Mean of all the Highest Readings .....	64·8	67·3
Mean of all the Lowest Readings .....	46·7	50·4
Mean Daily Range.....	18·1	16·9
Deduced Monthly Mean (from Mean of Max. and Min.) .....	54·2	57·2
Mean Temperature from Dry Bulb.....	55·1	57·6
Adopted Mean Temperature .....	54·7	57·4
Mean Temperature of Evaporation .....	52·0	54·5
Mean Temperature of Dew Point .....	49·4	51·8
Mean Elastic force of Vapour .....inches	0·352	0·387
Mean weight of Vapour in a cubic ft. of air grains	3·9	4·3
Mean additional weight required for saturation,,	0·9	0·9
Mean degree of Humidity (saturation 1·00) ..	0·82	0·82
Mean weight of a cubic foot of air .... grains	530·9	527·4
Fall of Rain .....	3·840	5·057
Number of days on which Rain fell.....	19	19·8

No. of days in the month on which the prevailing wind was	N	NE	E	SE	S	SW	W	NW
	2	8	1	0	4	3	12	1
Mean Velocity in miles per hour	3·7	6·8	6·6	0	8·0	4·9	8·9	2·8
Total No. of miles for each Direction	179	1296	158	0	772	353	2557	67

The total number of miles registered during the month was 5382.  
The max Velocity of the wind was 25 miles per hour, W., on the 10th, at 4 p.m.

## AUGUST, 1902.

Mean amount of Cloud (an overcast sky being indicated by 10·0)	7·5
In the month of August, the highest reading of the Barometer during 55 years, was on the 21st, in 1874, and was .....	30·114
The lowest ,, 31st, 1876 ,, .....	28·555
The highest Temperature 2nd, 1868 ,, .....	88·0
The lowest ,, 13th, 1887 ,, .....	33·4
The highest adopted mean temperature of the month, 1899	61·7
The lowest ,, ,, 1848	52·5
Greatest fall of rain during the month in 1891	9·869 in
Least ,, ,, 1871	2·085 in
Greatest number of days on which rain fell 1860	28
Least ,, ,, 1880	6

## TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

Mean barometric pressure ... ..	+	0·008 inches
Monthly range ,, ... ..	—	0·259 ,,
Mean of highest temperatures .. ..	—	2·5 degrees
Mean of lowest ,, ... ..	—	3·7 ,,
Mean daily range ,, ... ..	+	1·2 ,,
Adopted mean temperature ... ..	—	2·7 ,,
Total rainfall ... ..	—	1·217 inches

Heavy rain on 17th. Fog on 28th. Thunder on 27th and 28th.  
Lightning on 27th.

## SEPTEMBER, 1902.

Result of Observations taken during the Month.	Mean for the last 55 years.	
Mean Reading of the Barometer . . . inches	29·644	29·522
Highest                   ,,                   on the 26th   ,,	30·102	30·024
Lowest                   ,,                   on the 3rd   ,,	28·870	28·856
Range of Barometer Readings.....   ,,	1·232	1·168
Highest Reading of a Max. Therm. on the 2nd	73·0	72·7
Lowest Reading of a Min. Therm. on the 24th	35·8	36·3
Range of Thermometer Readings .....	37·2	36·4
Mean of all the Highest Readings.....	63·5	62·5
Mean of all the Lowest Readings .....	46·1	47·0
Mean Daily Range.....	17·4	15·5
Deduced Monthly Mean (from Mean of Max. and Min.) .....	53·5	53·6
Mean Temperature from Dry Bulb .....	54·3	54·2
Adopted Mean Temperature .....	53·9	53·9
Mean Temperature of Evaporation .....	50·6	51·1
Mean Temperature of Dew Point .....	47·4	48·4
Mean elastic force of Vapour .....	0·326	0·340
Mean weight of Vapour in a cub.ft. of air grains	3·7	4·0
Mean additional weight required for saturation,,	1·0	0·8
Mean degree of Humidity (saturation 1·00)..	0·78	0·81
Mean weight of a cubic foot of air ....grains	534·5	532·2
Fall of rain .....	1·245	1·511
Number of Days on which rain fell .....	15	18·7

No. of days in the month on which the prevailing wind was	N	NE	E	SE	S	SW	W	NW
	3	7	2	2	2	3	9	2
Mean Velocity in miles per hour	4·4	7·1	4·6	5·8	8·0	8·8	10·3	11·8
Total No. of miles for each Direction	315	1192	219	280	383	635	2225	566

The total number of miles registered during the month was 5815.  
The max. Velocity of the wind was 41 miles per hour, S.S.W.,  
on the 3rd at 8 a.m.

## SEPTEMBER, 1902.

Mean amount of Cloud (an overcast sky being indicated by 10·0)	7·1
In the month of September, the highest reading of the Barometer during 55 years, was on the 15th, in 1851, and was...30·274	
The lowest	25th, 1896    ,,    ...28 314
The highest Temperature	6th, 1868    ,,    ... 85·0
The lowest	25th, 1885, and 30th, 1888... 29·8
The highest adopted mean temperature of the month, 1865	... 59·1
The lowest	,,    ,,    ..    1863 ... 50·9
Greatest fall of rain during the month in	..    1869    9·539in
Least	,,    ,,    ..    1894    0·801in
Greatest number of days on which rain fell	..    1866    30
Least	,,    ,    1851 and 1894    6

## TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

Mean barometric pressure	... ..	+ 0·122 inches
Monthly range	... ..	+ 0·064    ,,
Mean of highest temperatures	... ..	+ 1·0 degrees
Mean of lowest	,,    ..    ..	— 0·9    ,,
Mean daily range	,,    ..    ..	+ 1·9    ,,
Adopted mean temperature	..    ..	— 0·0    ,,
Total rainfall	,,    ..    ..	— 3·266 inches

Fog on 26th. Gale of wind and rain on 3rd.

## OCTOBER, 1902.

Results of Observations taken during the Month.	Mean for the last 55 years.	
Mean Reading of the Barometer .... inches	29·553	29·433
Highest ,, on the 25th ,,	30·022	30·027
Lowest ,, on the 15th ,,	28·694	28·648
Range of Barometer Readings..... ,,	1·328	1·379
Highest Reading of a Max. Therm. on the 13th	59·8	64·4
Lowest Reading of a Min. Therm. on the 3rd	32·0	28·9
Range of Thermometer Readings .....	27·8	35·5
Mean of all the Highest Readings.....	54·8	54·7
Mean of all the Lowest Readings .....	42·4	41·5
Mean Daily Range.....	12·4	13·2
Deduced Monthly Mean (from Mean of Max. and Min.).....	47·6	47·1
Mean Temperature from Dry Bulb.....	48·8	47·7
Adopted Mean Temperature .....	48·2	47·4
Mean Temperature of Evaporation .....	46·4	45·2
Mean Temperature of Dew Point .....	44·4	42·8
Mean elastic force of Vapour .....inches	0·293	0·276
Mean weight of Vapour in a cub. ft. of air grains	3·3	3·2
Mean additional weight required for saturation,,	0·5	0·6
Mean degree of Humidity (saturation 1·00)..	0·87	0·84
Mean weight of a cubic foot of air....grains	538·9	537·7
Fall of Rain.....inches	5·131	5·007
Number of days on which Rain fell .....	21	21·1

No. of days in the month on which the prevailing wind was	N	NE	E	SE	S	SW	W	NW
	1	8	3	0	1	5	11	2
Mean Velocity in miles per hour	5·7	7·2	9·9	0	1·7	8·9	11·6	12·9
Total No. of miles for each Direction	137	1377	714	0	40	1063	3074	618

The total No. of miles registered during the month was 7023.  
 The max. Velocity of the wind was 36 miles per hour, W., on the 16th at 4 a.m.

## OCTOBER, 1902.

Mean amount of Cloud (an overcast sky being indicated by 10·0)	8·6
In the month of October the highest reading of the Barometer during 55 years, was on the 5th, in 1884, and was ..	30·306
The lowest ,, 19th, 1862 ,, ....	28·139
The highest Temperature 9th, 1869 ,, ....	72·8
The lowest ,, 28th, 1895 ,, ....	17·8
The highest adopted mean temperature of the month, 1861 & '76	51·6
The lowest ,, ,, 1895 ..	42·8
Greatest fall of rain during the month in ..	1870 13·437 in
Least ,, ,, ..	1856 1·328 in
Greatest number of days on which rain fell ..	1873 31
Least ,, ,, 1881-'87-'97-'99	12

## TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

Mean barometric pressure ... ..	+ 0·120 inches
Monthly range ,, ... ..	— 0·051 ,,
Mean of highest temperatures ... ..	+ 0·1 degrees
Mean of lowest ,, ... ..	+ 0·9 ,,
Mean daily range ,, ... ..	— 0·8 ,,
Adopted mean temperature .. ..	+ 0·8 ,,
Total rainfall .. ..	+ 0·124 inches

Ground Frost on 4th and 12th. Snow on 7th. Hail on 16th and 21st. Heavy rain on 9th, 12th, 15th and 21st. Lunar halo on 14th.

## NOVEMBER, 1902.

Results of Observations taken during the Month.		Mean for the last 55 years.
Mean Reading of the Barometer . . . . inches	29·439	29·473
Highest           ,,           on the 18th   ,,	30·020	30·069
Lowest           ,,           on the 28th   ,,	28·597	28·562
Range of Barometer Readings        ,,	1·423	1·507
Highest Reading of a Max. Therm. on the 6th	57·1	56·1
Lowest Reading of a Min. Therm. on the 20th	26·3	25·4
Range of Thermometer Readings	30·8	30·7
Mean of all the Highest Readings.....	49·2	47·4
Mean of all the Lowest Readings .....	38·0	36·5
Mean Daily Range.....	11·2	10·9
Deduced Monthly Mean (from Mean of Max. and Min.).....	43·2	41·6
Mean Temperature from Dry Bulb.....	44·2	41·9
Adopted Mean Temperature .....	43·7	41·8
Mean Temperature of Evaporation .....	42·1	39·6
Mean Temperature of Dew Point .....	40·2	38·2
Mean elastic force of Vapour..... inches	0·250	0·232
Mean weight of Vapour in a cub. ft. of air grains	2·9	2·7
Mean additional weight required for saturation,,	0·4	0·4
Mean degree of Humidity (saturation 1·00)..	0·87	0·87
Mean weight of a cubic foot of air . . . grains	542·0	544·8
Fall of Rain.....inches	2·062	4·372
Number of days on which Rain fell .....	16	19·7

No. of days in the month on which the prevailing wind was	N	NE	E	SE	S	SW	W	NW
	0	2	15	2	4	3	4	0
Mean Velocity in miles per hour	0	5·3	10·2	12·0	9·9	10·2	10·0	0
Total No. of miles for each Direction	0	255	3674	577	950	734	964	0

The total number of miles registered during the month was 7154.  
The max. Velocity of the wind was 31 miles per hour, S.S.E., on the 7th at 7 a.m.

## NOVEMBER, 1902.

Mean amount of Cloud (an overcast sky being indicated by 10·0) 8·3			
In the month of November, the highest reading of the Barometer during 55 years was on the 12th, in 1857, and was 30·350			
The lowest	"	11th, 1891	" 27·938
The highest Temperature		1st, 1900	" 62·4
The lowest	"	15th, 1901	" 17·5
The highest adopted mean temperature of the month, 1881 and 1899 .. .. . 47·0			
The lowest	"	"	1851 36·7
Greatest fall of rain during the month in .. 1866 9·026in			
Least	"	"	1855 1·158in
Greatest number of days on which rain fell .. 1872 29			
Least	"	"	1855 8

## TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

Mean barometric pressure .. .. .	—	0·034 inches
Monthly range .. .. .	—	0·084 "
Mean of highest temperatures .. .. .	+	1·8 degrees
Mean of lowest .. .. .	+	1·5 "
Mean daily range .. .. .	+	0·3 "
Adopted mean temperature .. .. .	+	1·9 "
Total rainfall .. .. .	—	2·310 inches

Ground frost on 2nd, 18th—22nd, 29th. Heavy rain on 28th.  
Lightning on 8th. Lunar Halo on 7th.



## DECEMBER, 1902.

Results of Observations taken during the Month.	Mean for the last 55 years.	
Mean Reading of the Barometer . . . . . inches	29·572	29 450
Highest " on the 4th "	30·213	30·074
Lowest " on the 29th "	28·270	28·557
Range of Barometer Readings . . . . .	1·943	1·517
Highest Reading of a Max. Therm. on the 16th	55·0	53·3
Lowest Reading of a Min. Therm. on the 22nd	22·0	20·2
Range of Thermometer Readings . . . . .	33·0	33 1
Mean of all the Highest Readings . . . . .	44·1	43 3
Mean of all the Lowest Readings . . . . .	34·4	33·0
Mean Daily Range . . . . .	9·7	10·3
Deduced Monthly Mean (from Mean of Max. and Min) . . . . .	39·3	38 2
Mean Temperature from Dry Bulb . . . . .	40·3	38·8
Adopted Mean Temperature . . . . .	39·8	38·5
Mean Temperature of Evaporation . . . . .	38·0	36·9
Mean Temperature of Dew Point . . . . .	35·7	35·0
Mean elastic force of Vapour . . . . . inches	0·209	0·206
Mean weight of Vapour in a cub. ft. of air grains	2·4	2·4
Mean additional weight required for saturation,,	0·5	0·4
Mean degree of Humidity (saturation 1·00) ...	0·86	0·87
Mean weight of a cubic foot of air . . grains	549·0	547·9
Fall of Rain . . . . . inches	4·056	4·543
Number of days on which Rain fell . . . . .	16	20·8

	N	NE	E	SE	S	SW	W	NW
No. of days in the month on which the prevailing wind was	0	4	7	0	2	3	9	6
Mean Velocity in miles per hour	0	7·0	10·4	0	20·1	20·1	20·5	11·7
Total No. of Miles for each Direction	0	672	1746	0	964	1448	4430	1682

The total number of miles registered during the month was 10942.  
 The max. Velocity of the wind was 44 miles per hour, on the 14th and 16th, at midnight and 5 a.m. Direction South.

## DECEMBER, 1902.

Mean amount of Cloud (an overcast sky being indicated by 10·0)	8·3
In the Month of December, the highest reading of the Barometer during 55 years, was on the 22nd, in 1849, and was	30·378
The lowest	27·350
The highest Temperature	58·1
The lowest	6·7
The highest adopted mean temperature of the month	44·6
The lowest	30·3
Greatest fall of rain during the month	9·211 in
Least	0·550 in
Greatest number of days on which rain fell	31
Least	8

## TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

Mean barometric pressure	...	...	+	0·122 inches
Monthly range	„	...	+	0·426 „
Mean of highest temperatures	...	...	+	0·8 degrees
Mean of lowest	„	...	+	1·4 „
Mean daily range	„	...	—	0·6 „
Adopted mean temperature	...	...	+	1·3 „
Total rainfall	...	...	—	0·487 inches

Ground frost on 2nd—9th, 12th—15th, 29th—31st. Snow on 3rd, 5th, 9th, 28th and 29th. Hail on 15th, 28th, 29th. Heavy rain on 1st, 14th, 15th and 16th. Gales of wind on 14th, 15th, 16th, 18th, 25th and 28th. Fog on 2nd and 21st. Lightning on 28th.

## Summary of Observations, 1902.

Results of Observations taken during the Year.	Mean for the last 55 years.
Mean Reading of the Barometer .....inches	29·536
Highest            "            on Jan. 31st            ,,	30·521
Lowest            "            on December 29th   ,,	28·270
Range of Barometer Readings            ,,	2·251
Highest Reading of a Max. Therm. on June 28th	82·8
Lowest Reading of a Min. Therm. on Feb. 11th	5·0
Range of Thermometer Readings .....	77·8
Mean of all the Highest Readings.....	54·4
Mean of all the Lowest Readings.....	39·5
Mean Daily Range.....	14·9
Deduced Yearly Mean (from Mean of Max. and Min).....	45·9
Mean Temperature (from Dry Bulb).....	46·8
Adopted Mean Temperature .....	46·4
Mean Temperature of Evaporation ..	44·0
Mean Temperature of Dew Point .....	41·1
Mean elastic force of Vapour .....inches	0·264
Mean weight of Vapour in a cub. ft. of air grains	3·0
Mean additional weight required for saturation, ..	0·7
Mean degree of Humidity (saturation 1·00)...	0·82
Mean weight of a cubic foot of air.....grains	540·9
Total fall of rain in the year ..... inches	36·751
Number of days per month on which Rain fell	17·4

### SUMMARY OF WIND.

No of days in the year on which the prevailing wind was .....	N	NE	E	SE	S	SW	W	NW
	37	45	41	18	28	80	93	23
Mean Velocity in miles per hour .....	6·7	8·0	9·3	9·8	13·0	10·4	11·5	6·6
Total No. of miles for each Direction .....	5942	8670	9152	4213	8719	20015	25717	3644

The total No. of miles registered during the year was 86072.

The max. Velocity of the wind was 44 miles per hour, on 14th and 16th December, at Midnight and 5 a.m.

## TABLE OF DIFFERENCES, 1902.

The signs + and -- mean respectively above and below the yearly average.

Mean barometric pressure	..	..	+	0 042 inches
Yearly range	..	..	+	0·217 "
Mean of highest temperatures	..	..	—	0·5 degrees
Mean of lowest	..	..	—	1·1 "
Mean daily range	..	..	+	0·6 "
Adopted mean temperature	..	..	—	0·4 "
Total rainfall	..	..	—	10·102 inches
Mean amount of Cloud (an overcast sky being indicated by 10·0)				7·8

## EXTREME READINGS IN THE LAST 55 YEARS.

The Maximum monthly mean height of the Barometer was in February, 1891, and was .....	inches	29·997
The Minimum " " in December, 1868, and was .....		28·984
The Maximum yearly mean height of the Barometer was in 1896, and was.....	inches	29 584
The Minimum " " in 1886, and was.....		29·389
The greatest monthly range of the Barometer was in January, 1884, and was .....	inches	2·409
The least " " in July, 1852, and was ..		0·505
The highest reading of the Barometer during 55 years was on January 9th, 1896, and was.....	inches	30·597
The lowest " " on December 8th, 1886, and was .....		27·350
Extreme range .....	inches	3·247
The highest temperature was on July 20th, 1901, and was ..		89·0
The lowest " " January 15th, 1881.....		4·6
The highest adopted mean temperature of a month, July, 1901, and was .....		63·2
The lowest " " " February, 1855 ..		28·6
The highest adopted mean temperature of a year, 1868 ..		49·1
The lowest " " " " 1879 ..		44·1
The greatest monthly mean weight of vapour } in a cubic foot of air .....	grains } July 1852	5·1
The least " " " February, 1855 and 1895 grains		1·4
The greatest fall of rain in a month was in October, 1870, and was .....	inches	13·437
The least " " " " May, 1859, ..		0·249
The greatest number of days on which rain fell in one month, January, 1872, October, 1873, December, 1868		31
The least " " " " " March, 1852		3
The greatest fall of rain in one year in 1866 .....	inches	62·183
The least " " " " 1887 .....		31·250
The greatest number of days in one year on which rain fell ..	1872 .....	319
The least " " " " 1855 .....		148

# DATES OF OCCASIONAL PHENOMENA.

1902.	Frost.	Hoar Frost.	Snow.	Hail.	Heavy Rain.	
January	12-15, 17-19, 24-31		11, 24, 25, 26, 27, 29	24, 25, 26, 27-30	3, 21, 24	
February	1-18, 26, 27		4, 6, -9, 11, 12, 14			
March	1-6, 13, 21-24, 26, 27, 30		20, 21, 23, 24, 26	20, 21, 22, 26	31	
April	2, 3, 6-15, 17-19, 23, 29		3, 13	3, 4, 22	15	
May	2, 6-11, 13, 14, 20, 21		6, 13	3, 5, 6, 7, 9		
June	10				8	
July					17	
August						
September	4, 12		7	16, 21	9, 12, 15, 21	
October	2, 18-22, 29	2			28	
November	2-9, 12-15, 29-31		3, 5, 9, 28, 29	15, 28, 29	1, 14, 15, 16	
December						
1902	Gales of Wind.	Fog.	Thunder	Lightning.	Lunar Halo.	Solar Halo.
January	1, 5, 6, 9, 20	17, 18	24	24		
February		14			16	
March	8, 20	5, 6, 7	20	20	16	
April		16	3, 23	3		
May			6, 9	6		
June						10
July			26			
August		28	27, 28	27		
September	3	26				
October					14	
November					7	
December	14, 15, 16, 18, 25, 28	2, 21				

MONTHLY TABLES FOR EACH HOUR OF RECORDED SUNSHINE

Local apparent time.	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9
January	0	0	0	0	3.5	5.2	6.2	7.6	6.8	5.9	5.3	1.6	0	0	0	0	0
February	0	0	0	0	2.7	6.7	9.4	9.4	8.1	8.2	7.6	5.7	0.6	0	0	0	0
March	0	0	0.3	2.0	6.2	9.7	10.7	10.0	11.9	12.6	11.5	8.7	5.1	1.6	0	0	0
April	0	1.6	8.6	11.5	15.7	17.5	16.4	16.7	17.4	17.5	16.5	13.6	12.5	10.0	3.6	0	0
May	0.5	9.4	11.0	14.2	16.7	16.3	15.1	13.8	16.2	13.4	15.6	16.4	12.7	12.1	8.5	1.1	0
June	2.3	6.8	9.4	10.9	10.7	12.2	12.8	13.1	13.9	13.4	13.3	13.3	13.1	10.2	8.0	2.9	0
July	0.3	5.0	8.9	9.6	9.0	9.4	9.6	10.2	11.6	13.5	14.9	12.6	12.0	9.9	7.2	4.0	0
August	0	1.2	5.6	8.5	11.1	11.9	13.8	13.4	13.4	13.1	13.7	14.8	14.2	12.8	6.0	0.3	0
September	0	0	3.6	8.2	14.6	14.1	14.7	15.1	17.1	16.1	13.4	10.6	9.6	6.3	1.3	0.2	0
October	0	0	0	1.5	5.9	11.2	11.0	9.9	9.9	8.8	8.8	5.5	1.6	0	0	0	0
November	0	0	0	0	0.5	4.3	7.6	7.3	7.0	7.0	6.0	1.0	0	0	0	0	0
December	0	0	0	0	0	1.8	4.6	4.6	3.7	4.2	1.2	0	0	0	0	0	0
Total	3.1	24.0	47.4	66.4	96.6	120.3	131.9	131.1	137.0	133.7	127.8	103.8	81.4	62.9	34.6	8.5	0

TOTAL AMOUNT OF SUNSHINE RECORDED ON EACH DAY.

MONTH.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
January	0.7	0.3	0	0	5.8	0	0	0	0.9	0	0	0	5.6	5.3	0	0	1.3
February	-	7.2	2.0	0	0	0	0.3	0	2.6	5.8	3.4	0.8	7.4	0.6	6.6	4.0	4.0
March	-	3.8	2.4	0	0.3	5.2	4.0	0	2.7	0.7	1.8	0	0.2	1.5	6.3	7.4	0.3
April	-	6.2	5.7	2.9	3.9	0	8.8	2.8	4.3	11.2	7.6	0.5	8.7	7.7	0	8.2	4.8
May	-	8.1	4.8	4.5	7.7	9.0	8.9	9.2	3.3	4.9	4.3	7.9	6.6	11.3	0	3.2	9.2
June	-	4.3	7.1	6.7	0.7	4.9	0.4	0.7	4.5	9.5	1.8	0.3	0.8	7.9	0	2.4	0.3
July	-	0.8	4.5	0.6	0	13.2	8.7	2.4	0	1.9	12.0	0.5	0.8	8.8	12.2	3.0	9.2
August	-	8.6	3.0	1.3	13.6	5.6	0	0	1.5	5.1	6.8	12.2	0.6	0.6	5.1	5.6	0
September	-	2.6	5.5	6.1	8.8	11.5	0.6	7.5	6.9	9.0	0.3	2.4	8.4	4.1	0.3	8.4	10.5
October	-	2.2	5.2	1.2	7.1	2.5	0.3	0	2.5	0	0	3.8	0	2.7	5.0	4.7	6.2
November	-	0.1	2.7	0	0.3	1.3	3.4	0	0.2	0.6	0	5.3	0	0	0.3	0	5.3
December	-	0	0	1.4	0.3	0	4.3	0.3	2.8	0	0	0	0	0.5	0	0	1.3

# TOTAL AMOUNT OF SUNSHINE RECORDED ON EACH DAY.

(Continued)

MONTH.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Monthly Total.	Per centage each month.
January -	0	0	0	0	0	0	0.5	1.3	1.8	0	1.8	4.4	7.2	5.2	42.1	17.0
February -	0	0	0	0	0	0	0	0	1.2	0.1	4.8	0	0	0	58.4	21.5
March -	0.7	5.3	2.7	2.4	7.4	6.4	0.4	8.5	4.7	3.0	2.3	3.2	3.3	2.9	90.3	24.7
April -	8.8	2.2	4.6	4.0	1.5	9.2	6.4	5.8	9.8	13.6	11.0	10.4	4.5	0	179.1	42.7
May -	5.1	10.0	10.1	11.7	0	5.0	2.0	13.0	3.1	1.7	10.6	9.4	0	2.1	193.0	39.1
June -	0.5	3.6	0	4.9	2.8	6.2	11.1	14.1	13.9	14.5	15.1	12.8	13.3	0	166.3	32.7
July -	4.7	2.0	2.8	0.2	0	9.2	9.3	11.0	1.6	3.5	9.8	2.2	7.3	5.5	147.7	29.0
August -	2.4	3.8	7.4	5.7	0.1	3.5	10.1	9.0	8.8	0.4	1.7	8.3	8.3	3.4	153.8	33.6
September -	9.8	0.8	0	0	0	0.7	9.5	7.2	6.9	2.7	6.3	6.2	1.9	0	144.9	38.2
October -	5.4	0	0.5	6.8	7.4	0	0	0	1.3	3.0	0	0	6.3	0	74.1	22.7
November -	5.2	5.5	5.0	3.2	0	2.0	0	0	0	0	0	0	0	0	40.7	15.9
December -	1.2	0.2	0.1	0	0	0	0	1.1	0	3.2	1.3	0.5	0	1.5	20.1	8.7



## SUMMARY OF SUNSHINE.

1902.	Number of days on which Sunshine was recorded.	Amount or Total Number of Hours	Per centage of possible Sunshine.	Mean for the last 22 Years.		
				Days.	Amount hours	Per centage of possible Sunshine
January ...	14	42·1	17·0	13·7	35·0	14·1
February ...	16	58·4	21·5	17·5	59·7	21·8
March ...	28	90·3	24·7	24·2	106·9	29·2
April ...	28	179·1	42·7	26·1	149·6	35·7
May ...	28	193·0	39·1	27·7	197·3	40·1
June ...	28	166·3	32·7	27·5	193·0	38·0
July ...	27	147·7	29·0	28·3	178·4	35·0
August ...	28	153·8	33·6	27·5	150·7	3·0
September	26	144·9	38·2	25·4	125·2	33·0
October ...	19	74·1	22·7	23·0	88·0	27·0
November	16	40·7	15·9	16·6	43·5	17·0
December	16	20·1	8·7	12·9	25·7	11·1
Year	274	1310·5	29·4	270·4	1352·9	30·3

## SUMMARY OF SUNSHINE

(Continued).

## EXTREMES FOR THE LAST 22 YEARS.

MONTH	Number of Days on which Sunshine was recorded.				Amount or Total number of Hours.				Percentage of possible Sunshine.			
	GREATEST		LEAST		GREATEST		LEAST		GREATEST		LEAST	
	Days	Year	Days	Year	Hours	Year	Hours	Year	o/o	Year	o/o	Year
Jan.	21	1881	8	1898	64.2	1881	14.9	1885	25.9	1881	6.0	1885
Feb.	24	1895	11	1882	89.3	1887	29.6	1882	32.8	1887	10.9	1882
Mar.	28	1894	19	{ 1881 1882 1902	162.1	1893	67.0	1895	44.2	1893	18.3	1895
Apr.	29	1900	23	{ 1883 1885 1888 1897	223.7	1893	95.7	1889	53.4	1893	22.8	1889
May	30	{ 1881 1882 1884 1888	22	1886	266.6	1881	127.0	1886	54.1	1881	25.8	1886
June	30	1896	24	{ 1888 1897	272.5	1887	115.0	1890	53.6	1887	22.6	1890
July	31	1882	25	1888	247.2	1887	98.0	1888	48.6	1887	19.3	1888
Aug.	31	{ 1886 1893	23	1894	235.2	1899	88.4	1891	51.5	1899	19.3	1891
Sept	29	{ 1895 1899	21	1897	170.0	1895	62.9	1896	44.9	1895	16.6	1896
Oct.	28	1891	17	1889	134.9	1899	50.0	1889	41.4	1899	15.3	1889
Nov	23	1883	9	1897	60.5	1884	18.5	1891	23.6	1884	7.2	1891
Dec.	18	1886	6	1882	60.1	1886	14.1	1900	26.0	1886	6.1	1900
Year	290	1887	252	1835	1613.7	1887	1132.1	1838	36.1	1887	25.3	1838

## OBSERVATIONS OF UPPER CLOUDS (CIRRUS).

Date. 1902.	G. M. T.	Cloud.		Wind.		Direction of Lower Clouds.	
		Direction	Velocity (0-6.)	Direction.	Force (0-12.)		
January	1	1 p.m.	SW	2	S b E	3	—
"	9	11 a.m.	W	3	S b W	2	SW
"	9	1 p.m.	NW	3	SW	5	SW
"	11	9 a.m.	NW	2	NW	0	W
"	13	8 a.m.	N	2	NNW	1	—
"	14	4 p.m.	NNW	2	NNE	1	—
"	30	9 a.m.	N	2	NNE	1	—
February	2	8 a.m.	E b N	3	NE b N	2	NE
"	4	2 p.m.	E	3	NE b E	1	NE
"	28	5 p.m.	W	1	SW b W	1	W
March	5	9 a.m.	SW	1	SW	2	—
"	8	9 a.m.	SW	1	WSW	3	SW
"	11	9 a.m.	W	1	N	2	W
"	16	9 a.m.	W	1	SW	1	W
"	20	8 a.m.	W b S	1	WSW	5	W
"	21	9 a.m.	NW	1	SW	2	W
"	22	8 a.m.	SW b S	1	WSW	1	SW
April	3	7-30 a.m.	SE	1	W b S	0	SE
"	11	8 a.m.	E	1	NE	2	NE
"	14	9 a.m.	SW	1	SE	2	W
"	16	10 a.m.	NW	2	WSW	2	SW
"	22	5-45 p.m.	NW	2	S b W	2	SE
"	27	9 p.m.	N	2	NE	3	NE
"	29	4 p.m.	W	2	W b S	3	W
May	10	9 a.m.	SE	2	NE	1	NE
"	14	9 a.m.	N	2	NW b N	1	N
"	16	9 a.m.	E b N	2	SW	1	SE
"	19	9 a.m.	NW	3	NW	4	N
"	20	9 a.m.	N	2	N b W	2	NW
"	21	9 a.m.	N	2	NW	1	NW
"	28	10 a.m.	NW	2	NW	5	W b S
June	2	8 p.m.	S	2	SW b S	0	S
"	3	8 a.m.	S	2	ENE	2	S b W
"	4	8 a.m.	N	2	N	0	N
"	10	8 p.m.	W	2	W b S	0	W
"	19	8 a.m.	SE	2	E	2	SE
"	23	8 p.m.	W	2	W b N	0	W
"	24	8 p.m.	NW	2	N	1	NW
"	27	9 p.m.	E	1	ENE	1	E
"	30	8 p.m.	E	2	SW b W	1	E

## OBSERVATIONS OF UPPER CLOUDS (Continued).

Date. 1902.	G. M. T.	Cloud.		Wind.		Direction of Lower Clouds.	
		Direction.	Velocity (0-6.)	Direction.	Force. (0-12)		
July	2	8 p.m.	N	1	W	0	N
"	11	9 p.m.	NW	2	WSW	1	—
"	13	9 a.m.	W	1	SW	2	—
"	14	8 a.m.	NW	2	W	0	SW
"	15	8 a.m.	W	2	SW	1	SW
"	16	10 a.m.	S b W	3	SW	1	SW
"	17	2 p.m.	SW	2	W	3	W
"	30	2 p.m.	W	3	WSW	3	NW
August	9	8 a.m.	W	3	W	3	W
"	11	8 a.m.	NW	2	NW	2	NW
"	12	4 p.m.	NW	2	WSW	2	W
"	29	8 a.m.	S	2	SW	0	S
"	31	8 a.m.	NE	1	E	2	NE
September	2	7-30 a.m.	SW	2	S b W	3	S
"	24	4 p.m.	S	2	NW	1	—
"	25	10 a.m.	SW	1	N b E	0	—
"	26	4 p.m.	NW	3	W	1	—
"	27	8 a.m.	NW	2	N	0	—
"	29	8 a.m.	E b S	3	NNE	0	—
October	7	8 a.m.	N	2	NNE	1	NW
"	15	Noon.	N	3	SW b W	5	SW
"	16	8-30 a.m.	NW	2	WNW	5	W
"	17	3 p.m.	NW	2	WNW	2	W
"	18	9 a.m.	N	1	NNE	1	N b E
"	20	6 p.m.	W	2	WNW	1	SW
"	21	4 p.m.	E	2	W	3	SW
"	22	2 p.m.	NW	1	W b N	4	W
"	22	8 p.m.	W	1	W	0	W
"	26	8 a.m.	SW	1	SW	3	—
"	27	Noon.	S	2	S b W	1	NW
November	5	7-30 a.m.	NE	2	E	3	S
"	6	9 a.m.	E	2	NNE	0	—
"	11	9 a.m.	SW	1	ESE	2	S
"	22	8 a.m.	NE	1	SE b E	1	SE b S
December	9	8-30 a.m.	NW	1	NE	3	NE
"	19	9 a.m.	NNW	2	W b N	2	W

## OBSERVATIONS OF EARTH-MAGNETISM.

ABSOLUTE measures of Horizontal Magnetic Force have been made once each month, by the method of Vibration and Deflection.

In these observations the same Magnet has been employed from the beginning of the series in March. 1863. The weight of the Magnet with its stirrup is 825 grains, and its length 3·94 inches nearly. Its moment of inertia, measured by the method of vibrations, with and without a known increase of the moment, is 5·27303 to the English foot—second—grain units, at the temperature 35° Fahr., and its rate of increase is 0·00073 for increase of 10°

The temperature corrections have been obtained from the formula  $q(t^\circ - 32^\circ) + q'(t^\circ - 32^\circ)^2$  where  $t^\circ$  is the observed temperature and 32° Fahr. the adopted standard temperature. The values of the co-efficient  $q$  and  $q'$  are respectively 0·0001128 and 0·000000436.

The induction co-efficient  $\mu$  is 0·000244.

The correction for error of graduation of the Deflection bar at 1·0 foot is + 0·00004ft. at 1·3 + 0·000064 ft.

The observed times of vibration are entered in the Table without corrections.

The time of one vibration has been obtained each month from the mean of twelve determinations of the time of 100 vibrations.

The angles of deflection are each the mean of two sets or readings with one exception.

In deducing from these observations the ratio and product of the magnetic moment  $m$  of the magnet, and the earth's horizontal magnetic intensity  $X$ , the induction and temperature corrections have always been applied, and the observed time of vibration has been corrected for the effect of torsion of the suspending thread; but no correction has been required for the rate of the chronometer, or for the arc of vibration, the former having been always under 1·5<sup>s</sup> and the latter never over 50'.

The average deflection of the magnet caused by a twist of the torsion circle through 90° has been about 8·3 of arc.

In the calculations of the ratio  $\frac{m}{X}$ , the third and subsequent

terms of the series  $1 + \frac{P}{r^2} + \frac{Q}{r^4} + \&c.$ , have always been omitted.

The value of the constant P was found to be  $-0.00349$ .

The Vertical and Total Forces are deduced from the measures of the Horizontal Force, and the Angle of Inclination or Dip.

All the computations are in English foot—second—grain units; and in the final table the results are given also in C. G. S. units, in parallel columns.

The Dip, or angle between the direction of total force, and that of its horizontal component, has been measured with Barrow's Circle, once each month by two needles, always when possible on the days of vibration and deflection observations.

The Declination has been observed at the beginning of each week, usually on Mondays at 4 p.m. and is quoted as the angle between the horizontal direction of force and the Astronomical Meridian, measured from the North Point.

The Differential Instruments, or Photo-Magnetographs, are of the same pattern as those at the Kew Observatory, except that the radial distances between the centres of the magnets and the surfaces of the respective cylinders are shorter, and the clock is not provided with an automatic light-cut-off, for the time scale. The "cut-offs" are made by hand at the hours 0, 2, 20, and 22 of the astronomical day, to furnish two time marks at each end of the day's curves, the changes being made between 10-30 and 11 a.m., civil time.

The scale value of the Bifilar horizontal force torsion balance, has remained very constant at  $0.00051$  C. G. S. for one centimetre, during the last eleven years.

The scale value of the Unifilar Declination Magnet is  $11.28$  arc per centimetre.

The corrections for diurnal range, employed in the tables, are taken from the Kew Reports 1891-1901.

## OBSERVATIONS OF DECLINATION AND DIP.

1902 MONTH	G.M.T. CIVIL DAY	WEST DECLINATION		MAGNETIC DIP.		
		Observations.	Monthly Mean.	Needle	DIP.	G.M.T. CIVIL DAY
	D. H. M.	° ' "	° ' "		° ' "	D. H. M.
Jan.	8 16 0	18 7.6	18 7.1	1 3	68 41.1 68 47.5	17 11 40 ,, 12 20
	13 16 0	18 6.5				
	20 16 0	18 6.6				
	27 16 0	18 7.7				
Feb.	3 16 0	18 7.1	18 5.0	1 3	68 42.8 68 45.6	17 11 10 ,, 11 48
	10 16 0	18 4.4				
	17 16 5	18 2.1				
	25 16 0	18 6.2				
March	3 16 0	18 5.1	18 5.7	1 3	68 42.9 68 49.9	18 11 15 ,, 11 48
	10 16 0	18 4.7				
	17 16 0	18 6.5				
	24 16 0	18 5.9				
April	31 16 0	18 6.1	18 4.2	1 3	68 44.3 68 55.3	14 12 15 ,, 12 48
	7 16 0	18 5.1				
	14 16 0	18 1.8				
	21 16 0	18 4.1				
May	28 16 0	18 5.9	18 4.5	1 3	68 46.4 68 53.6	16 11 30 ,, 12 13
	5 16 0	18 5.4				
	12 16 5	18 3.2				
	19 16 0	18 6.8				
June	26 16 5	18 2.6	18 4.7	1 3	68 46.4 68 52.4	17 11 15 ,, 11 48
	2 16 20	18 2.2				
	9 16 0	18 6.6				
	17 16 0	18 1.2				
July	23 16 0	18 8.2	18 3.8	1 3	68 53.1 68 59.0	14 11 15 ,, 11 48
	30 16 10	18 5.2				
	7 16 0	18 4.9				
	14 16 0	18 0.3				
	21 16 0	18 5.5				
	28 16 0	18 4.6				

## OBSERVATIONS OF DECLINATION AND DIP.

(Continued.)

1902 MONTH	G.M.T.		WEST DECLINATION		Needle	MAGNETIC DIP.		G.M.T. CIVIL DAY
	CIVIL DAY		Observations.	Monthly Mean.		DIP.		
	D. H. M.		° ' "	° ' "		° ' "	D. H. M.	
Aug.	5 16 10		18 5.2	18 3.7	1	68 45.8	19 11 15	
	11 16 0		18 5.1					
	18 16 10		18 3.6					
	25 16 0		18 0.7					
Sept.	15 16 0		18 3.7	18 3.8	1	68 44.1	17 11 59	
	22 16 5		18 4.1					
	29 16 0		18 3.6					
Oct.	6 16 0		18 2.4	18 2.4	1	68 37.5	17 12 3	
	14 16 0		18 2.1					
	20 16 0		18 3.4					
	27 16 10		18 1.6					
Nov.	3 16 0		18 2.1	18 3.8	1	68 37.8	12 11 57	
	10 16 0		18 3.9					
	17 16 0		18 4.8					
	24 16 0		18 4.5					
Dec.	2 16 0		18 4.4	18 3.0	1	68 37.5	16 10 15	
	9 16 0		18 3.5					
	15 16 0		18 3.1					
	22 16 0		18 4.7					
	29 16 0		17 59.4		3	68 45.6	10 58	
Yearly Mean				18 4.3		68 46.2		



OBSERVATIONS OF VIBRATIONS AND DEFLECTIONS  
FOR ABSOLUTE MEASURE OF MAGNETIC FORCE.

1902. Month.	G. M. T. (Civil Day)	Temp.	Time of one vibration	G. M. T.	Temp.	Observed Deflection at 1.0 ft. at 1.3 ft.	Value of m.
	D. H. M.	°	S.	D. H. M.	°	° /	
Jan.	17 9 40	45.4	6.0325	17 { 10 36 10 37	48.5 48.7	11 32.4 5 14.0	0.37892
Feb.	17 9 25	32.8	6.0296	17 { 10 17 10 19	37.9 38.2	11 33.2 5 14.5	0.37873
Mar.	18 9 38	50.4	6.0269	18 { 10 30 10 32	51.3 51.1	11 33.6 5 14.8	0.37966
Apr.	14 10 41	52.3	6.0347	14 { 11 27 11 28	53.5 53.9	11 34.8 5 15.0	0.37968
May	16 9 48	48.1	6.0275	16 { 10 38 10 38	49.3 49.4	11 33.9 5 14.8	0.37965
June	17 9 35	53.0	6.0288	17 { 10 27 10 27	53.8 54.0	11.34.4 5 14.7	0.37979
July	14 9 21	59.3	6.0333	14 { 10 23 10 23	60.0 60.0	11 34.0 5 14.5	0.37983
Aug.	19 9 27	59.8	6.0384	19 { 10 23 10 38	59.8 60.5	11 34.0 5 14.2	0.37955
Sept.	17 9 48	56.1	6.0274	17 { 10 40 10 40	57.5 58.0	11 33.7 5 14.2	0.37992
Oct.	17 10 0	61.9	6.0303	17 { 10 58 10 58	63.5 63.6	11 32.7 5 14.8	0.37991
Nov.	12 9 49	56.4	6.0328	12 { 10 57 10 55	57.4 57.6	11 33.3 5 14.7	0.37953
Dec.	17 11 41	53.1	6.0245	17 { 12 32 12 33	54.3 54.5	11 32.1 5 13.7	0.37952

## MAGNETIC INTENSITY.

BRITISH UNITS.				C. G. S. UNITS.		
1902	Horizontal Force.	Vertical Force.	Total Force.	Horizontal Force.	Vertical Force.	Total Force.
Jan. ...	3·7668	9·6807	10·3878	0·17368	0·44635	0·47895
Feb. ..	3·7660	9·6775	10·3844	0·17364	0·44621	0·47880
Mar. ...	3·7656	9·6944	10·4000	0·17362	0·44699	0·47952
April ...	3·7591	9·7060	10·4076	0·17332	0·44752	0·47992
May ...	3·7654	9·7246	10·4283	0·17362	0·44838	0·48082
June ...	3·7625	9·7119	10·4153	0·17348	0·44779	0·48022
July ...	3·7612	9·7648	10·4641	0·17343	0·45023	0·48247
Aug. ...	3·7595	9·7051	10·4079	0·17335	0·44748	0·47988
Sept. ...	3·7656	9·6766	10·3835	0·17362	0·44616	0·47876
Oct. ...	3·7641	9·6355	10·3446	0·17356	0·44427	0·47696
Nov. ...	3·7622	9·6310	10·3398	0·17347	0·44406	0·47674
Dec. ...	3·7718	9·6706	10·3801	0·17391	0·44589	0·47860
Means	3·7642	9·6899	10·3953	0·17356	0·44678	0·47930

# HORIZONTAL MAGNETIC DIRECTION.

Horizontal Magnetic Direction, west of north, (from daily measures of the continuous curves.)

	Mean of the highest daily readings.	Mean of the lowest daily readings.	Means of $\alpha$ and $\beta$ .	Means of daily readings at 4a.m. & 4p.m.	Differences	Difference of $\alpha$ and $\beta$ , or Mean daily range.	Highest reading of the month.	Lowest reading of the month.	Monthly range.
	(a)	(b)	(c)	(d)	$d-c$ .		18°+	17°+	
1902	18°+	17°+	18°+				18°+	17°+	
January	9.1	62.6	5.9	6.5	0.6	'	14.8	40.8	34.0
February	8.9	61.2	5.1	5.2	0.1	'	12.3	49.8	22.5
March	9.6	60.9	5.3	4.8	-0.5	'	14.8	55.3	19.5
April	10.6	59.6	4.8	4.9	0.1	'	25.8	50.8	35.0
May	9.2	59.4	4.3	4.5	0.2	'	13.3	49.8	23.5
June	9.2	58.6	3.9	4.1	0.2	'	12.2	55.8	16.4
July	8.1	57.7	2.9	3.2	0.3	'	12.1	50.8	21.3
August	9.6	57.3	3.5	2.3	-1.2	'	12.8	35.8	37.0
September	7.6	57.7	2.7	1.9	-0.8	'	11.8	49.6	22.2
October	7.1	57.7	2.4	2.3	-0.1	'	10.8	49.8	21.0
November	5.1	58.1	1.6	2.3	0.7	'	10.3	46.3	24.0
December	4.4	59.7	2.1	2.2	0.1	'	6.8	54.8	12.0
Means ..	8.2	59.2	3.7	3.7	0.0	'	13.1	49.1	24.0

Correction for diurnal range

Mean for the year

-0.3  
18° 3' .4

# HORIZONTAL MAGNETIC FORCE.

Horizontal Magnetic Force in C. G. S. units (from daily measures of the continuous curves.)

The figures in the columns are entered to the unit 10 C. G. S.

1902.	Mean of the highest daily readings.	Mean of the lowest daily readings.	Means of $a$ and $b$ .	Means of daily readings 4a.m. & 4p.m.	Differences of $a$ and $b$ or Mean daily Range.	Highest reading of the Month.	Lowest reading of the Month.	Monthly Range.
	(a)	(b)	(c)	(d)	$d-c$	17000 +	17000 +	0 +
January -	383	362	373	377	4	393	303	90
February -	384	364	374	377	3	403	353	50
March -	385	356	371	377	6	411	338	73
April -	385	343	364	373	9	418	248	170
May -	391	355	373	380	7	403	338	65
June -	393	346	370	379	9	418	321	97
July -	386	341	364	374	10	423	323	100
August -	379	326	353	368	15	408	301	107
September -	376	338	357	365	8	408	318	90
October -	378	341	360	370	10	393	298	95
November -	379	355	367	371	4	413	326	87
December -	385	369	377	378	1	398	343	55
Means -	384	350	367	374	7	407	317	90

Correction for diurnal range — 00003

Mean Horizontal Force for the year 0-17371 C.G.S. units.

## DATES OF MAGNETIC DISTURBANCES, 1902.

The disturbances are divided generally into three classes, *small*, *moderate*, and *greater*; these are indicated by the initial letters of the classes, and the letter *c* denotes *calm*. Very great disturbances are marked *vg*. The days are reckoned astronomically from noon to noon.

Month.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	
Day 1	c	s	c	s	c	s	c	c	c	c	c	c	
2	c	c	c	s	c	c	c	c	s	c	s	c	
3	c	c	c	s	c	c	c	c	s	c	c	c	
4	c	c	c	s	s	s	c	c	c	c	c	c	
5	c	c	c	c	s	c	c	c	c	c	c	c	
6	c	c	s	s	s	s	c	c	c	c	s	c	
7	c	m	s	c	c	c	c	c	c	c	c	c	
8	e	s	s	s	H	c	c	c	c	c	c	c	
9	c	s	c	s	H	c	s	s	c	c	c	s	
10	c	s	c	H	c	s	c	s	c	c	c	s	
11	c	s	H	H	c	s	s	c	c	m	c	s	
12	c	c	s	c	c	s	s	c	s	c	c	s	
13	c	s	s	s	c	s	c	c	c	c	c	c	
14	c	s	c	c	s	s	c	c	c	c	s	c	
15	m	c	s	c	c	s	c	c	c	c	c	c	
16	s	s	c	s	c	c	c	s	c	c	c	c	
17	s	c	s	s	s	s	c	c	s	c	c	c	
18	s	c	c	c	s	c	c	c	s	c	c	c	
19	c	c	c	s	s	c	c	c	s	c	c	c	
20	c	s	c	H	c	c	c	c	s	c	c	c	
21	c	s	s	s	c	s	c	H	c	c	s	c	
22	c	c	s	s	c	s	c	s	s	c	s	s	
23	c	c	c	c	c	c	s	s	s	s	m	s	
24	s	m	H	c	c	s	m	c	c	m	m	s	
25	c	m	H	c	c	s	s	c	c	c	m	c	
26	s	s	c	c	c	s	s	c	c	c	s	s	
27	c	c	c	c	c	s	c	c	c	s	c	s	
28	s	c	c	c	c	s	c	c	c	s	c	c	
29	c		s	c	s	m	c	c	s	c	c	c	
30	s		c	c	s	s	c	c	c	s	c	c	
31	c		c		s		c	s		m		c	
Totals	c s m g vg	23 7 1 0 0	13 12 3 0 0	18 10 3 1 0	14 13 2 1 0	19 10 18 1 0 0	11 18 8 1 1 0	22 8 1 1 0 0	23 7 10 0 0 0	20 10 0 0 0 0	22 6 3 0 0 0	21 6 3 0 0 0	22 9 0 0 0 0

## DATES OF SOLAR DRAWINGS.

The figures express, in decimals of a day, the Greenwich Civil time at which the drawing was made.

1902.	January	February	March	April	May	June	July	August	September	October	November	December
1	.38	.42	.44		.42	.48	.71	.46	.55	.38	.36	
2		.38	.42	.40	.47	.54	.34		.47	.40		.51
3			.48	.37	.35	.52		.33	.64		.53	.51
4					.42		.42	.47	.39	.35	.47	.43
5	.39		.51	.41	.37	.40	.43		.38	.38	.42	.38
6			.53		.33	.42			.44		.42	.39
7			.66		.49				.37	.38		
8				.38	.33			.35	.36		.39	.38
9	.48	.43	.45	.39	.52	.40	.44	.45				
10		.39		.38	.39			.29	.39	.34 & .40	.36	.51
11	.43	.45	.35	.38	.34				.45			.44
12	.41	.42	.54	.42	.46	.48	.48	.46		.53		
13	.43		.54	.34	.31	.37	.37			.47		
14			.38			.40	.44			.52		
15			.35	.48	.33		.45		.73	.38	.36	.43
16			.68	.65	.42	.75	.45	.39	.39	.44	.42	
17			.38	.40	.33	.42	.42	.73	.47	.38	.38	.39
18			.51	.34	.38	.42		.47		.40	.46	
19				.38	.38	.67	.57	.47		.40	.40	
20					.38	.35		.53		.41		
21			.34			.51	.39		.38		.51	
22			.44	.33	.52	.33	.39	.77				
23			.38	.41		.33	.39	.42	.34			
24			.34	.38	.33	.41	.44	.47	.33		.41	.40
25	.48		.40	.45	.40	.35	.41	.34	.42	.41		
26	.42	.46	.43	.34	.42	.46	.41	.84	.39			
27				.34	.48	.34	.45	.47	.36	.35		.47
28	.54	.39	.67	.34	.39	.37	.49	.35	.44			.41
29	.42		.53	.52		.37		.48				.47
30	.43		.47		.39	.36						.41
31	.46		.47		.71	.36		.47		.38		.40

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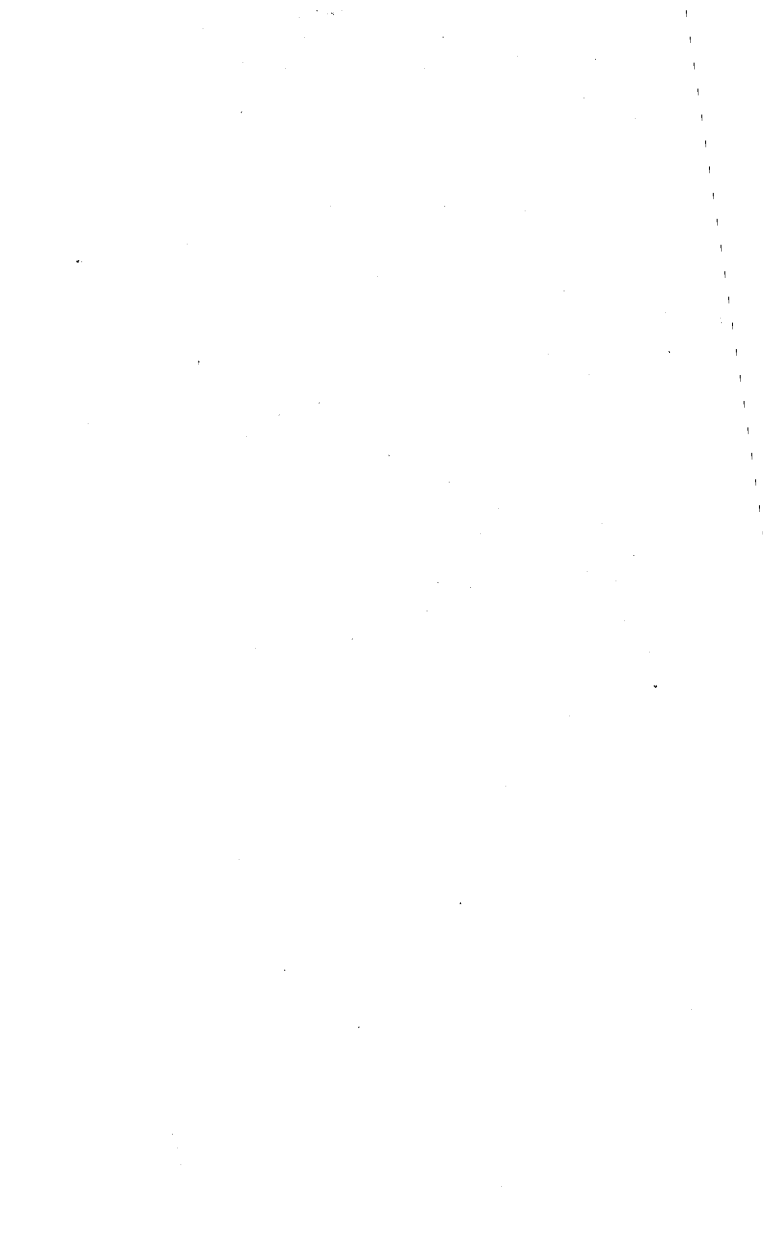
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Sul Clima di Napoli. Dal medesimo -	„



APPENDIX

RESULTS

OF

METEOROLOGICAL OBSERVATIONS

TAKEN AT

ST. IGNATIUS' COLLEGE, MALTA,

BY THE

REV. J. F. DOBSON, S.J.

1902.

# ST. IGNATIUS' COLLEGE, MALTA.

Lat. 35° 55' N.

Long. 14° 29' E.

Barometer Readings reduced to 32° F. at sea level.

## METEOROLOGICAL REPORT.

JANUARY, 1902.

Results of Observations taken during the Month.	Mean for the last 19 years.
Mean Reading of the Barometer . . . inches	30·222
Highest ,, on the 9th ,,	30·494
Lowest ,, on the 31st ,,	29·823
Range of Barometer Readings ,,	0·671
Highest Reading of a Max. Therm. on the 31st	61·3
Lowest Reading of a Min. Therm. on the 30th	45·3
Range of Thermometer Readings .....	19·0
Greatest Range in 24 hours on the 30th .....	17·0
Mean of all the Highest Readings .....	60·2
Mean of all the Lowest Readings .....	48·8
Mean Daily Range.....	11·4
Mean Temperature (deduced from Max. & Min.)	53·8
Mean Temperature (deduced from Dry Bulb.)	54·3
Adopted Mean Temperature .....	54·1
Mean Temperature of Evaporation .....	49·8
Mean Temperature of Dew Point .....	46·6
Mean elastic force of Vapour .....inches	0·318
Mean weight of Vapour in a cub. ft. of air grains	3·6
Mean additional weight required for saturation,,	0·9
Mean degree of Humidity.....	79
Mean weight of a cubic foot of air ...grains	545·4
Fall of Rain .....	0·812
Number of days on which rain fell.....	6
Mean amount of Cloud (an overcast sky = 10)	3·9
Total number of miles of wind indicated.....	7479
Mean Velocity of Wind per hour.....miles	10·1
	30·053
	30·428
	29·580
	0·848
	65·1
	41·3
	23·8
	18·1
	59·0
	48·7
	10·3
	53·3
	53·2
	53·3
	48·8
	45·7
	0·307
	3·5
	0·9
	80
	542·6
	3·580
	13
	5·2
	8516
	11·4

## ST. IGNATIUS' COLLEGE, MALTA.

FEBRUARY, 1902.

Results of Observations taken during the Month.	Mean for the last 19 years
Mean Reading of the Barometer.....inches 29·966	30·084
Highest „ on the 6th „ 30·171	30·336
Lowest „ on the 22nd „ 29·660	29·624
Range of Barometer Readings..... „ 0·511	0·712
Highest Reading of Max. Therm. on the 15th 67·4	67·1
Lowest Reading of a Min. Therm. on the 17th 40·4	41·5
Range of Thermometer Readings ..... 27·0	25·6
Greatest Range in 24 hours on the 18th..... 20·5	19·2
Mean of all the Highest Readings..... 62·8	60·5
Mean of all the Lowest Readings ..... 50·2	49·4
Mean Daily Range..... 12·6	11·1
Mean Temperature (deduced from Max. & Min.) 55·5	53·9
Mean Temperature (deduced from Dry Bulb) 56·9	54·3
Adopted Mean Temperature ..... 56·2	54·1
Mean Temperature of Evaporation ..... 52·8	49·8
Mean Temperature of Dew Point ..... 50·7	47·0
Mean elastic force of Vapour .....inches 0·370	0·323
Mean weight of Vapour in a cub. ft. of air grains 4·1	3·6
Mean additional weight required for saturation,, 0·8	0·8
Mean degree of Humidity ..... 84	82
Mean weight of a cubic foot of air....grains 538·2	540·8
Fall of rain .....inches 2·210	2·151
Number of days on which rain fell..... 8	9
Mean amount of Cloud (an overcast sky=10) 4·8	4·9
Total number of miles of wind indicated.... 7317	7959
Mean Velocity of Wind per hour.....miles 10·9	11·8

## ST. IGNATIUS' COLLEGE, MALTA.

MARCH, 1902.

Results of Observations taken during the Month.		Mean for the last 1 <sup>4</sup> years
Mean Reading of the Barometer.....inches	29·978	29·991
Highest            ,,            on the 14th   ,,	30·275	30·249
Lowest            ,,            on the 8th    ,,	29·624	29·512
Range of Barometer Readings .....	0·651	0·737
Highest Reading of a Max. Therm. on the 2nd	72·5	74·2
Lowest Reading of a Min. Therm. on the 17th	45·0	43·4
Range of Thermometer Readings .....	27·5	30·8
Greatest Range in 24 hours on the 24th ....	17·9	22·1
Mean of all the Highest Readings.....	62·9	63·4
Mean of all the Lowest Readings .....	51·7	50·9
Mean Daily Range.....	11·2	12·5
Mean Temperature (deduced from Max & Min.)	56·6	56·3
Mean Temperature (deduced from Dry Bulb)	56·0	55·5
Adopted Mean Temperature .....	56·3	55·9
Mean Temperature of Evaporation .....	52·2	51·8
Mean Temperature of Dew Point .....	48·8	48·6
Mean elastic force of Vapour .....	0·345	0·343
Mean weight of Vapour in a cub.ft. of air grains	3·9	3·8
Mean additional weight required for saturation,,	1·2	1·1
Mean degree of Humidity .....	78	79
Mean weight of a cubic foot of air.... grains	538·1	537·2
Fall of rain..... inches	0·755	1·018
Number of days on which Rain fell .....	8	7
Mean amount of Cloud (an overcast sky=10)	4·1	4·4
Total number of miles of wind indicated....	9960	8179
Mean Velocity of Wind per hour .....	13·4	11·0

## ST. IGNATIUS' COLLEGE, MALTA.

APRIL, 1902.

Results of Observations taken during the Month.		Mean for the last 19 years.
Mean Reading of the Barometer..... inches	29·955	29·963
Highest „ on the 21st „	30·260	30·272
Lowest „ on the 7th „	29·623	29·561
Range of Barometer Readings..... „	0·637	0·711
Highest Reading of a Max. Therm. on the 4th	78·4	77·2
Lowest Reading of a Min. Therm. on the 2nd	49·2	47·9
Range of Thermometer Readings .....	29·2	29·3
Greatest Range in 24 hours on the 2nd.....	20·0	22·1
Mean of all the Highest Readings.....	68·5	67·3
Mean of all the Lowest Readings.....	56·8	54·3
Mean Daily Range .....	12·2	13·0
Mean Temperature (deduced from Max.& Min.)	61·4	59·8
Mean Temperature (deduced from Dry Bulb)	60·5	59·3
Adopted Mean Temperature ..	61·0	59·5
Mean Temperature of Evaporation .. ....	57·5	55·5
Mean Temperature of Dew Point.....	54·9	52·1
Mean elastic force of Vapour.....inches	0·431	0·391
Mean weight of Vapour in a cub.ft.of air grains	4·8	4·4
Mean additional weight required for saturation,,	1·0	1·3
Mean degree of Humidity.....	82	78
Mean weight of a cubic foot of air .. grains	532·1	531·7
Fall of Rain .....	1·327	1·004
Number of Days on which rain fell .....	6	5
Mean amount of Cloud (an overcast sky=10)	3·9	4·4
Total number of miles of wind indicated ....	6870	8341
Mean Velocity of Wind per hour .....	9·5	11·6



## ST. IGNATIUS' COLLEGE, MALTA.

MAY, 1902.

Results of Observations taken during the Month.	Mean for the last 19 years.
Mean Reading of the Barometer inches 30.032	29.984
Highest ,, on the 4th ,, 30.214	30.179
Lowest ,, on the 14th ,, 29.756	29.632
Range of Barometer Readings ..... 0.458	0.547
Highest Reading of a Max. Therm. on the 4th 76.9	81.5
Lowest Reading of a Min. Therm. on the 11th 48.9	53.3
Range of Thermometer Readings ..... 28.0	28.2
Greatest Range in 24 hours on the 4th ..... 24.3	23.2
Mean of all the Highest Readings ..... 70.4	72.5
Mean of all the Lowest Readings ..... 56.9	58.4
Mean Daily Range ..... 13.5	14.1
Mean Temperature (deduced from Max. & Min.) 62.6	64.4
Mean Temperature (deduced from Dry Bulb) 62.0	63.8
Adopted Mean Temperature ..... 62.3	64.1
Mean Temperature of Evaporation ..... 57.4	60.0
Mean Temperature of Dew Point ..... 52.9	56.5
Mean elastic force of Vapour ..... inches 0.401	0.457
Mean weight of Vapour in a cub.ft. of air grains 4.5	5.0
Mean additional weight required for saturation,, 1.9	1.7
Mean degree of Humidity ..... 74	76
Mean weight of a cubic foot of air ..... grains 531.5	527.0
Fall of Rain..... inches 0.520	0.676
Number of days on which Rain fell ..... 2	4
Mean amount of Cloud (an overcast sky=10) 3.9	3.7
Total number of miles of wind indicated..... 7540	7478
Mean Velocity of Wind per hour... .....miles 10.1	10.0

## ST. IGNATIUS' COLLEGE, MALTA.

JUNE, 1902.

Results of Observations taken during the Month.	Mean for the last 19 years.	
Mean Reading of the Barometer.....inches	30·000	30·017
Highest „ on the 29th „	30·198	30·174
Lowest „ on the 10th „	29·797	29·797
Range of Barometer Readings .....	0·401	0·377
Highest Reading of a Max. Therm. on the 11th	90·9	90·9
Lowest Reading of a Min. Therm. on the 20th	56·5	58·4
Range of Thermometer Readings .....	34·4	32·5
Greatest Range in 24 hours on the 20th.....	23·7	25·3
Mean of all the Highest Readings .....	79·1	80·8
Mean of all the Lowest Readings .....	63·9	64·8
Mean Daily Range .....	15·2	16·0
Mean Temperature (deduced from Max. & Min.)	70·8	72·0
Mean Temperature (deduced from Dry Bulb)	69·7	71·2
Adopted Mean Temperature .....	70·3	71·6
Mean Temperature of Evaporation .....	64·3	66·0
Mean Temperature of Dew Point .....	58·7	61·8
Mean elastic force of Vapour.....inches	0·494	0·552
Mean weight of Vapour in a cub. ft. of air grains	5·6	6·0
Mean additional weight required for saturation.,	2·4	2·4
Mean degree of Humidity .....	70	72
Mean weight of cubic foot of air ....grains	522·5	519·7
Fall of Rain .....	0·0	0·110
Number of days on which Rain fell .....	0	1
Mean amount of Cloud (an overcast sky=10)	2·4	2·2
Total number of miles of wind indicated.....	7090	6260
Mean Velocity of Wind per hour.....miles...	9·8	8·7

## ST. IGNATIUS' COLLEGE, MALTA.

JULY, 1902

Results of Observations taken during the Month.	Mean for the last 19 years.	
Mean Reading of the Barometer . . . . inches	30·043	30·004
Highest                    "            on the 5th        "	30·207	30·146
Lowest                    "            on the 11th     "	29·887	29·840
Range of Barometer Readings . . . . . "	0·320	0·306
Highest Reading of a Max. Therm. on the 25th	99·7	97·8
Lowest Reading of a Min. Ther. on the 1st & 5th	64·9	64·2
Range of Thermometer Readings . . . . .	34·8	33·6
Greatest Range in 24 hours on the 25th . . . . .	26·8	26·9
Mean of all the Highest Readings . . . . .	89·9	87·1
Mean of all the Lowest Readings . . . . .	70·9	70·1
Mean Daily Range . . . . .	19·0	17·0
Mean Temperature (deduced from Max. & Min.)	79·9	78·0
Mean Temperature (deduced from Dry Bulb)	78·2	77·1
Adopted Mean Temperature . . . . .	79·1	77·6
Mean Temperature of Evaporation . . . . .	71·7	70·5
Mean Temperature of Dew Point . . . . .	66·8	65·8
Mean elastic force of Vapour . . . . . inches	0·657	0·636
Mean weight of Vapour in a cub. ft. of air grains	6·0	6·8
Mean additional weight required for saturation, ,	3·5	3·4
Mean degree of Humidity . . . . .	67	67
Mean weight of a cubic foot of air . . . . grains	513·9	511·5
Fall of Rain . . . . . inches	0·0	0·028
Number of days on which Rain fell . . . . .	0	1
Mean amount of Cloud (an overcast sky=10)	0·5	0·8
Total number of miles of wind indicated . . . .	4237	5632
Mean Velocity of Wind per hour . . . . . miles	5·7	7·6

## ST. IGNATIUS' COLLEGE, MALTA.

AUGUST, 1902.

Results of Observations taken during the Month.	Mean for the last 19 years.	
Mean Reading of the Barometer .... inches	30·032	30 013
Highest ,, on the 1st ,,	30·184	30·158
Lowest ,, on the 22nd ,,	29·904	29·867
Range of Barometer Readings .....	0·280	0·291
Highest Reading of a Max. Therm. on the 10th	99·3	95·4
Lowest Reading of a Min. Therm. on the 15th	64·9	65·3
Range of Thermometer Readings .....	34·4	30·1
Greatest Range in 24 hours on the 7th .....	22·5	24·9
Mean of all the Highest Readings .....	88·9	87 0
Mean of all the Lowest Readings .....	71·3	70·8
Mean Daily Range.....	17·6	16·2
Mean Temperature (deduced from Max. & Min.)	79·3	78 0
Mean Temperature (deduced from Dry Bulb)	79·0	77·8
Adopted Mean Temperature .....	79·2	77·9
Mean Temperature of Evaporation .....	71·5	71·3
Mean Temperature of Dew Point .....	66·1	66·9
Mean Elastic force of Vapour .....inches	0·641	0 661
Mean weight of Vapour in a cubieft. of air grains	6·7	7·0
Mean additional weight required for saturation,,	3·7	3·1
Mean degree of Humidity .....	65	68
Mean weight of a cubic foot of air .... grains	513·3	512·7
Fall of Rain .....	0·0	0·087
Number of days on which Rain fell.....	0	1
Mean amount of Cloud (an overcast sky=10)	0·6	1·1
Total number of miles of wind indicated....	5135	5480
Mean Velocity of Wind per hour .....	6·9	7·4

ST. IGNATIUS' COLLEGE, MALTA.  
SEPTEMBER, 1902.

Result of Observations taken during the Month.	Mean for the last 19 years.	
Mean Reading of the Barometer . . . . inches	30·027	30·060
Highest „ on the 21st „	30·168	30·253
Lowest „ on the 28th „	29·669	29·827
Range of Barometer Readings . . . . . „	0·499	0·426
Highest Reading of a Max. Therm. on the 4th	91·6	92·5
Lowest Reading of a Min. Therm. on the 30th	63·2	62·8
Range of Thermometer Readings . . . . .	28·4	29·4
Greatest Range in 24 hours on the 4th . . . . .	21·8	23·4
Mean of all the Highest Readings . . . . .	84·1	83·4
Mean of all the Lowest Readings . . . . .	70·6	68·9
Mean Daily Range . . . . .	13·5	14·5
Mean Temperature (deduced from Max. & Min.)	76·4	75·3
Mean Temperature (deduced from Dry Bulb)	75·8	74·8
Adopted Mean Temperature . . . . .	76·1	75·1
Mean Temperature of Evaporation . . . . .	70·9	69·5
Mean Temperature of Dew Point . . . . .	67·2	65·8
Mean elastic force of Vapour . . . . . inches	0·666	0·635
Mean weight of Vapour in a cub. ft. of air grains	7·2	6·8
Mean additional weight required for saturation,,	2·4	2·6
Mean degree of Humidity . . . . .	75	73
Mean weight of a cubic foot of air . . . . grains	516·3	516·8
Fall of rain . . . . . inches	2·584	0·898
Number of Days on which rain fell . . . . .	4	4
Mean amount of Cloud (an overcast sky=10)	2·8	2·4
Total number of miles of wind indicated . . . .	4690	5569
Mean Velocity of Wind per hour . . . . . miles	6·5	7·7

## ST. IGNATIUS' COLLEGE, MALTA.

OCTOBER, 1902.

Results of Observations taken during the Month.	Mean for the last 19 years.	
Mean Reading of the Barometer .... inches	30.038	30.048
Highest " on the 13th "	30.257	30.269
Lowest " on the 31st "	29.673	29.754
Range of Barometer Readings..... "	0.584	0.515
Highest Reading of a Max. Therm. on the 11th	82.9	87.2
Lowest Reading of a Min. Therm. on the 27th	55.2	55.9
Range of Thermometer Readings .....	27.7	31.3
Greatest Range in 24 hours on the 1st .....	18.6	19.9
Mean of all the Highest Readings.....	76.0	77.2
Mean of all the Lowest Readings .....	65.2	64.5
Mean Daily Range.....	10.8	12.7
Mean Temperature (deduced from Max. & Min.)	69.7	69.8
Mean Temperature (deduced from Dry Bulb)	68.8	69.1
Adopted Mean Temperature .....	69.3	69.5
Mean Temperature of Evaporation .....	65.2	64.8
Mean Temperature of Dew Point .....	62.6	61.3
Mean elastic force of Vapour .....inches	0.568	0.543
Mean weight of Vapour in a cub. ft. of air grains	6.1	5.9
Mean additional weight required for saturation.,	1.8	1.8
Mean degree of Humidity .....	80	77
Mean weight of a cubic foot of air....grains	524.2	523.0
Fall of Rain.....inches	6.352	3.073
Number of days on which Rain fell .....	9	8
Mean amount of Cloud (an overcast sky=10)	4.7	4.1
Total number of miles of wind indicated....	7850	6577
Mean Velocity of Wind per hour .....miles	10.6	8.8

ST. IGNATIUS' COLLEGE, MALTA.  
NOVEMBER, 1902.

Results of Observations taken during the Month.	Mean for the last 19 years.	
Mean Reading of the Barometer . . . inches	29·996	30·075
Highest           ,,           on the 4th           ,,	30·177	30·321
Lowest           ,,           on the 30th           ,,	29·625	29·691
Range of Barometer Readings        ,,	0·552	0·630
Highest Reading of a Max. Therm on the 2nd	78·0	76·8
Lowest Reading of a Min. Therm. on the 24th	47·8	50·1
Range of Thermometer Readings	30·2	26·7
Greatest Range in 24 hours on the 20th	18·6	18·3
Mean of all the Highest Readings.....	67·2	69·0
Mean of all the Lowest Readings	55·5	58·0
Mean Daily Range.....	11·7	11·0
Mean Temperature (deduced from Max. & Min.)	60·3	62·5
Mean Temperature (deduced from Dry Bulb)	60·5	62·0
Adopted Mean Temperature	60·4	62·3
Mean Temperature of Evaporation	56·2	57·7
Mean Temperature of Dew Point	53·0	54·5
Mean elastic force of Vapour        inches	0·403	0·426
Mean weight of Vapour in a cub. ft. of air grains	4·5	4·8
Mean additional weight required for saturation,,	1·3	1·3
Mean degree of Humidity	78	80
Mean weight of a cubic foot of air    grains	533·7	531·7
Fall of Rain.....inches	7·017	3·438
Number of days on which Rain fell	10	11
Mean amount of Cloud (an overcast sky=10)	3·5	5·1
Total number of miles of wind indicated....	6840	6761
Mean Velocity of Wind per hour        miles	9·5	9·4

ST. IGNATIUS' COLLEGE, MALTA.  
DECEMBER, 1902.

Results of Observations taken during the Month.	Mean for the last 19 years.
Mean Reading of the Barometer . . . . . inches	30·068
Highest                    "            on the 26th    "    "	30·404
Lowest                    "            on the 1st     "    "	29·468
Range of Barometer Readings . . . . .    "	0·936
Highest Reading of a Max. Therm. on the 1st	67·0
Lowest Reading of a Min. Therm. on the 26th	41·0
Range of Thermometer Readings . . . . .	26·0
Greatest Range in 24 hours on the 2nd . . . . .	14·9
Mean of all the Highest Readings . . . . .	60·3
Mean of all the Lowest Readings . . . . .	50·7
Mean Daily Range . . . . .	9·6
Mean Temperature (deduced from Max & Min.)	54·8
Mean Temperature (deduced from Dry Bulb)	55·6
Adopted Mean Temperature . . . . .	55·2
Mean Temperature of Evaporation . . . . .	51·1
Mean Temperature of Dew Point . . . . .	47·6
Mean elastic force of Vapour . . . . . inches	0·330
Mean weight of Vapour in a cub. ft. of air grains	3·9
Mean additional weight requir for saturation,,	1·1
Mean degree of Humidity . . . . .	76
Mean weight of a cubic foot of air .. grains	540·7
Fall of Rain . . . . . inches	3·227
Number of days on which Rain fell . . . . .	13
Mean amount of Cloud (an overcast sky = 10)	5·0
Total number of miles of wind indicated . . . . .	9075
Mean Velocity of Wind per hour . . . . . miles	12·2



ST. IGNATIUS' COLLEGE, MALTA.  
**Summary of Observations, 1902.**

Results of Observations taken during the Year.	Mean for the last 19 years.
Mean Reading of the Barometer .....inches 30·029	30·032
Highest       ,,       on Jan. 9th       ,,       30·494	30·508
Lowest       ,,       on December 1st   ,,       29·468	29·389
Range of Barometer Readings       ,,       1·026	1·119
Highest Reading of a Max. Therm. on July 25th 99·7	100·0
Lowest Reading of a Min. Therm. on Feb. 17th 40·4	40·4
Range of Thermometer Readings ..... 59·3	59·6
Greatest Range in 24 hours on the 25th July 26·8	28·4
Mean of all the Highest Readings..... 72·5	72·5
Mean of all the Lowest Readings..... 59·3	59·2
Mean Daily Range..... 13·2	13·3
Mean Temperature (deduced from Max. & Min.) 65·1	65·0
Mean Temperature (deduced from Dry Bulb) 64·8	64·5
Adopted Mean Temperature ..... 65·0	64·8
Mean Temperature of Evaporation .. ..... 60·0	59·9
Mean Temperature of Dew Point ..... 56·3	56·3
Mean elastic force of Vapour .....inches 0·454	0·454
Mean weight of Vapour in a cub. ft. of air grains 5·1	5·1
Mean additional weight required for saturation,, 1·8	1·8
Mean degree of Humidity ..... 75	76
Mean weight of a cubic foot of air.... grains 529·2	527·8
Total fall of rain in the year ..... inches 24·834	20·141
Number of days on which Rain fell ..... 66	77
Mean amount of Cloud (an overcast sky = 10) 3·3	3·6
Total number of miles of wind indicated.... 84083	84961
Mean Velocity of Wind per hour..... miles 9·6	9·7

SINCE MAY, 1883.

The Maximum monthly mean height of the Barometer was

January, 1898, and was .....inches 30·347

The Minimum       ,,       ,,       in January, 1886, and was 29·844

The Maximum yearly mean height of the Barometer was in 1897, and was.....inches	30·058
The Minimum „ „ in 1890, and was.....	29·996
The greatest monthly range of the Barometer was in January, 1886, and was .....inches	1·201
The least „ „ in August, 1883, and was „	0·188
The highest reading of the Barometer was on January 29th 1898, and was.....inches	30 638
The lowest „ „ on January 17th, 1886, and was	29·155
Extreme range .....inches	1·483
The highest temperature was on August 11th, 1896, and was	104·8
The lowest „ „ February 19th, 1895.....	34·2
The highest mean temperature of a month, was in August, 1885, and was .....	83·2
The lowest „ „ „ February, 1891 ..	49·5
The greatest monthly mean weight of vapour } in a cubic foot of air ..... grains }	August, 1885 7·9
The least „ January and February, 1891, and was grs.	3·0
The highest observed Dew point was on August 30th, 1885, and was .....	78 7
The lowest „ „ February 19th, 1895, and was	27·9
The greatest fall of rain in a month was in December, 1889, and was .....	inches 8·952
The greatest number of days on which rain fell in one month, January, 1889 .....	24
The greatest fall of rain in one year in 1898 and was inches	29·178
The smallest „ „ „ 1895 .... „	11·384
The greatest number of rainy days in a year was in 1894 and was	90
The least „ „ „ „ 1888 „	59
The highest temperature registered in sunshine was on the 3rd July, 1901, and was .....	162·9
The lowest temperature registered on ground was on the 19th February, 1895, and was .....	31·7
The highest observed sea temperature was on the 5th August, 1887, and was .....	85·0
The lowest „ „ 30th January, 1895, and was	55·5
The smallest mean amount of cloud observed in one month was in August, 1890, and was .....	0·0
The greatest „ „ in January, 1894, and was	7·2

ST. IGNATIUS' COLLEGE, MALTA.

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NOTES FOR THE SEPARATE MONTHS.

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JANUARY.

In Sunshine, the highest reading was  $119\cdot5^{\circ}$  on the 2nd.  
 On Ground, the lowest reading was  $38\cdot9^{\circ}$  on the 29th.  
 The Sea has averaged  $61\cdot0^{\circ}$ .  
 Thunderstorms passed on the 15th.  
 Lightning was seen on the 3rd and 16th.  
 Hail fell on the 15th.  
 Total Rainfall since last June,  $13\cdot947$  inches ; the average of  
 19 years,  $15\cdot190$  inches.

FEBRUARY.

In Sunshine, the highest reading was  $121\cdot7^{\circ}$  on the 6th.  
 On Ground, the lowest reading was  $34\cdot1^{\circ}$  on the 17th.  
 The Sea has averaged  $59\cdot9^{\circ}$ .  
 Thunderstorms passed on the 16th, and 22nd.  
 Lightning was seen on the 8th and 18th.  
 Total Rainfall since last June,  $16\cdot157$  inches ; the average  
 of 19 years,  $17\cdot341$  inches.

MARCH.

In Sunshine, the highest reading was  $123\cdot4^{\circ}$  on the 23rd.  
 On Ground, the lowest reading was  $38\cdot4^{\circ}$  on the 17th.  
 The Sea has averaged  $61\cdot0^{\circ}$ .  
 Thunderstorms passed on the 7th and 8th.  
 Total Rainfall since last June,  $16\cdot912$  inches ; the average of  
 19 years,  $18\cdot359$  inches.

**APRIL.**

In Sunshine, the highest reading was 138·0° on the 23rd.  
On Ground, the lowest reading was 43·4° on the 2nd.  
The Sea has averaged 63·4°.  
Thunderstorm passed on the 7th.  
Total Rainfall since last June, 18·239 inches ; the average of  
19 years, 19·363 inches.

**MAY.**

In Sunshine, the highest reading was 139·0° on the 16th.  
On Ground, the lowest reading was 43·6° on the 11th.  
The Sea has averaged 66·8°.  
Thunderstorm passed on the 25th.  
Total Rainfall since last June, 18·759 inches ; the average of  
19 years, 20·039 inches.

**JUNE.**

In Sunshine, the highest reading was 140·1° on the 27th.  
On Ground, the lowest reading was 51·4° on the 20th.  
The Sea has averaged 70·4°.  
Thunderstorm passed on the 27th.  
Total Rainfall since last June, 18·759 inches ; the average of  
19 years, 20·149 inches.

**JULY.**

In Sunshine, the highest reading was 147·1° on the 25th.  
On Ground, the lowest reading was 60·1° on the 5th.  
The sea has averaged 79·0°.  
Total Rainfall since last June 0·0 inches ; the average of 19  
years, 0·028 inches.

## AUGUST.

In Sunshine, the highest reading was 148·3° on the 10th.

On Ground, the lowest reading was 60·2° on the 26th.

The Sea has averaged 81·2°.

Lightning was seen on the 23rd and 24th.

Total Rainfall since last June 0·0 inches ; the average of 19 years, 0·115 inches.

## SEPTEMBER.

In Sunshine, the highest reading was 141·0° on the 17th.

On Ground, the lowest reading was 58·9° on the 30th.

The Sea has averaged 76·7°.

Thunderstorms passed on the 20th, 21st, 25th, 26th, 27th, and 28th.

Lightning was seen on the 5th, 23rd, and 24th.

Hail fell on the 28th.

Total Rainfall since last June, 2·584 inches ; the average of 19 years, 1·013 inches.

## OCTOBER.

In Sunshine, the highest reading was 136·1° on the 15th.

On Ground, the lowest reading was 50·9° on the 27th.

The Sea has averaged 73·5°.

Thunderstorms passed on the 5th, 30th, and 31st.

Lightning was seen on the 24th, 25th, and 26th.

Hail fell on the 30th.

Total Rainfall since last June 8·936 inches ; the average of 19 years, 4·086 inches.

## NOVEMBER.

In Sunshine, the highest reading was 124·5° on the 8th.

On Ground, the lowest reading was 41·9 on the 24th.

The Sea has averaged 66·4°.

Thunderstorms passed on the 7th, 8th, 15th, 16th, 17th, 23rd, 27th and 28th.

Lightning was seen on the 2nd, 3rd, 20th and 30th.

Total Rainfall since last June 15·953 inches ; the average of 19 years, 7·524 inches.

### DECEMBER.

In Sunshine, the highest reading was  $109\cdot6^{\circ}$  on the 9th.

On Ground, the lowest reading was  $38\cdot5^{\circ}$  on the 21st.

The Sea has averaged  $63\ 9^{\circ}$ .

Thunderstorms passed on the 4th, 5th and 6th.

Lightning was seen on the 8th and 9th.

Hail fell on the 6th and 24th.

Total Rainfall since last June,  $19\cdot180$  inches ; the average of  
19 years,  $11\cdot687$  inches.

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### NOTES FOR THE YEAR.

In Sunshine, the highest reading was  $148\cdot3^{\circ}$  on the 10th Aug.

On Ground, the lowest reading was  $34\cdot1^{\circ}$  on the 17th February.

The Sea has averaged  $68\cdot6^{\circ}$ .

Thunderstorms passed on 28 days.

Lightning was seen on 18 days.

Hail fell on 5 days.

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#### Corrigenda—

In Report for 1901, p. 73. Mean Velocity of Wind per hour  
(Mean for last 18 years) should be  $9\cdot7$  not  $9\cdot9$ .

J. F. DOBSON, S.J.