

Meteorological Observations taken at

Edinburgh Castle

during the Month of

, 18

; Latitude

; Longitude

; Height above the Sea

Day of Week	Day of Month	At 9h. A.M., Local Time										At 3h. P.M., Local Time										At 9h. A.M., Local Time										GENERAL REMARKS
		Reading of				Wind		Amount of Cloud	Ozone Scale	Reading of				Wind		Amount of Cloud	Ozone Scale	Reading of Self-registering Thermometers *					Rain fallen in previous 24 hours									
		Barometer	Attached Therm.	Dry Bulb Therm.	Wet Bulb Therm.	By estimation				By Robinson's Anemometer	Barometer	Attached Therm.	Dry Bulb Therm.	Wet Bulb Therm.	By estimation			By Robinson's Anemometer	Max. in Air	Min. in Air	Diff. or Range of Temp.	Mean of Max. and Min. or approximate mean Temperature	Max. in Sun's Rays	Min. on Grass	On the Ground in.	ft. above Ground in.						
						Direction	Force 0-12 Miles								Direction												Force 0-12 Miles	Direction	Force 0-12 Miles	o	o	
in.	o	o	o	Direction	Force 0-12 Miles	0-10	Dr. Moffat	in.	o	o	o	Direction	Force 0-12 Miles	0-10	Dr. Moffat	o	o	o	o	o	o	o	o									
1	28.740	41	34.5	34.0	SE		A	28.700	42	33.6	34.0	SE		8	46.0	30.0	16.0	38.0	47.0	30.0	.000	.000	Agreeable c. 3 PM	Agreeable c.								
2	29.196	42	40.0	36.0	SE		A	29.050	44	41.5	40.0	SE		8	48.0	29.0	19.0	38.5	48.0	29.0	.100	.100	Do	Do								
3	29.100	44	41.5	39.0	S		4	29.042	48	44.0	39.6	S		6	49.0	34.5	14.5	41.7	49.0	34.5	.070	.170	Beautiful c.	Do								
4	28.960	46	42.4	44.2	SE		A	28.868	50	52.6	48.0	SE		10	54.0	34.8	19.2	44.4	51.0	34.0	.000	.000	Agreeable c.	Dull or								
5	29.320	44	36.5	33.0	SE		4	29.370	46	38.0	34.5	SE		0	40.8	31.1	9.7	35.9	48.0	30.0	.280	.260	Beautiful	Beautiful								
6	29.516	42	37.0	35.5	SE		4	29.466	46	40.2	36.8	SE		1	42.0	32.0	10.0	37.0	46.0	30.0	.000	.000	Do	Do								
7	29.806	42	36.5	35.0	SE		2	28.706	42	41.2	38.2	SE		7	45.0	33.8	9.2	38.4	48.5	30.5	.010	.070	Do	Dull								
8	28.370	44	36.0	35.5	SE		10	28.332	46	40.0	38.5	SE		10	41.0	30.5	10.5	35.7	47.0	29.0	.510	.500	Fall c.	Fall								
9	28.234	42	36.0	35.0	SE		3	28.308	44	38.0	36.8	SE		8	40.5	29.8	10.7	35.1	48.0	30.0	.000	.000	Agreeable	Agreeable								
10	28.712	42	32.2	32.0	SE		10	28.748	45	30.2	29.4	SE		0	39.5	30.5	11.0	34.0	41.5	29.0	.000	.000	Beautiful	Beautiful								
11	28.901	37	24.5	23.0	SE	2	175.9	0	28.858	38	27.5	26.2	SE	3	35.8	18.6	17.2	27.2	41.0	20.0	.000	.000	Beautiful	Agreeable								
12	29.274	38	24.5	23.5	SE	1	74.2	0	29.306	37	27.4	27.0	SE	2	45.9	0	41.0	20.0	30.9	42.0	23.0	.000	.000	Agreeable	Beautiful							
13	28.640	38	40.0	37.1	SE	4	413.1	A	28.682	42	46.0	40.5	SE	5	73.7	10	52.0	18.5	33.5	58.0	19.0	.000	.000	Agreeable	Dull							
14	28.830	44	44.4	43.0	SE	5	285.4	10	28.862	46	57.5	47.5	SE	5	12.9	10	53.5	38.0	15.5	45.7	58.2	34.0	.000	.000	Dull	Dull						
15	29.060	44	40.0	37.0	SE	4	680.0	A	29.154	48	39.4	36.6	SE	4	57.0	8	46.5	36.0	10.5	41.2	56.8	35.5	.160	.140	Shower	Shower						
16	29.050	44	41.0	39.5	SE	2	192.6	10	29.152	48	40.0	39.5	SE	2	27.7	10	42.0	31.5	10.5	36.4	44.4	32.0	.130	.120	Do	Dull						
17	29.442	44	40.0	38.2	SE	1	131.9	10	29.338	48	48.5	48.0	SE	1	74.1	10	50.5	31.1	19.4	41.1	49.5	31.0	.000	.000	Dull	Dull						
18	29.324	44	44.0	44.0	SE	3	329.1	A	29.190	50	48.5	45.0	SE	5	65.9	2	50.8	35.5	15.3	43.1	54.5	37.0	.020	.170	Agreeable	Agreeable						
19	28.812	50	42.0	40.5	SE	2	153.5	A	28.932	50	42.0	38.5	SE	2	20.8	6	50.0	39.0	11.0	44.5	57.4	36.0	.000	.000	Shower	Do						
20	28.824	46	42.5	41.0	SE	2	225.4	A	28.866	50	45.6	42.0	SE	2	37.6	6	47.5	33.5	12.0	41.5	48.0	35.0	.020	.020	Agreeable	Do						
21	28.988	44	41.0	40.5	SE	2	302.4	A	29.006	46	45.5	42.2	SE	2	31.2	8	56.8	30.0	16.0	38.8	48.5	29.8	.200	.180	Do	Do						
22	29.094	44	41.5	38.0	SE	4	176.6	4	29.106	46	44.0	40.2	SE	5	61.4	6	46.0	35.5	10.5	40.7	48.0	35.0	.020	.020	Do	Do						
23	29.736	44	41.8	40.2	SE	2	211.6	0	29.826	48	44.0	40.5	SE	2	24.0	4	45.5	33.8	11.7	39.6	49.0	31.0	.000	.000	Beautiful	Beautiful						
24	30.032	46	44.5	43.0	SE	2	297.0	2	30.046	48	45.0	45.0	SE	2	29.4	2	47.2	33.5	11.7	41.3	49.0	33.0	.000	.000	Do	Agreeable						
25	29.988	48	46.5	44.5	SE	4	305.3	2	29.988	48	48.1	46.0	SE	4	57.0	8	50.0	34.0	16.0	42.0	55.0	33.5	.000	.000	Agreeable c.	Do						
26	29.970	48	47.0	44.0	SE	3	157.0	10	29.940	50	46.5	45.8	SE	3	56.1	6	49.0	42.0	7.0	44.5	53.0	42.0	.000	.000	Dull	Do						
27	29.750	48	45.5	41.2	SE	4	315.6	6	29.750	50	45.8	42.0	SE	3	57.9	2	48.5	38.5	10.0	43.5	58.0	38.0	.000	.000	Beautiful	Do						
28	29.150	46	46.2	41.8	SE	3	244.4	2	29.062	48	46.0	45.0	SE	3	41.1	6	49.0	35.0	16.0	41.0	59.0	33.5	.000	.000	Agreeable	Beautiful						
29	28.906	42	32.5	32.0	SE	5	364.7	10	28.952	46	38.5	35.0	SE	5	73.0	6	45.0	27.5	17.5	36.2	54.8	27.0	.000	.000	Dull	Agreeable						
30	29.586	42	33.0	31.5	SE	3	308.5	0	29.582	46	35.5	33.0	SE	3	40.4	10	49.5	27.1	22.0	38.1	57.5	36.0	.000	.000	Beautiful	Shower						
31	29.016	46	42.0	40.8	SE	1	145.0	10	29.004	48	45.2	44.0	SE	1	22.6	10	48.5	28.5	20.0	38.5	52.0	28.0	.500	.520	Dull	Dull						
Sums	903.366	1560	1222.9	1154.0			59	547.9	20.2	33	903.112	1032	1302.5	1214.3		65	963.9	217	1	430.4	985.4	632.7	1211.4	1506.6	964.1	193.0	173.0					
Means	28.140	44	39.4	37.2			2.8	256.1	6.5	1.0	29.102	46	42.0	39.5		3.4	45.9	7.0		46.4	31.8	14.6	39.1	37.2	31.1	25	26					
Index errors & capillarity	-.025								-.025																							
Correction for Temp.	-.040								-.045																							
Means Corrected	29.075								29.062																							
Number of Columns	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24								

* The number of each thermometer must be inserted at the head of the column containing the observations made with it.

- The difference between the highest number in Columns 1 and 10 (89.64 on the $24'$) and the lowest number in the same Columns (28.20 on the $9'$) is 61.44 showing the approximate range of Atmospheric Pressure in the Month.
- The Mean of the numbers in Columns 1 and 10, shows the approximate Mean Pressure of the Atmosphere for the Month = 49.668
- Highest Reading in Column 19 = 28.20 on the $4'$ Lowest Reading in Column 20 = 18.5 on the $13'$ Difference = 9.5 being the range of Temperature in the Month.
- The Difference between the Means of the numbers in Columns 19 and 20 should be the same as the Mean of the numbers in Column 21, and shows the Mean daily range = 11.6
- The Mean of the numbers in Columns 19 and 20 should be the same as the Mean of the numbers in Column 22, and gives the approximate Mean Temperature of the Air for the Month = 59.1
- The highest number in Column 21 (28.20 on the $13'$) and the lowest number in the same Column (7.4 on the $26'$) show the greatest and least daily range of Temperature during the Month.
- The highest number in Column 22 (28.27 on the $16'$), and the lowest number in the same Column (27.2 on the $11'$) show the highest and lowest approximate mean daily Temperature of the Air for the Month.
- The mean of the numbers in Columns 8 and 17 = 6.74 give the Mean amount of Cloud for the Month.
- The Mean of the numbers in Columns 9 and 18 = 1.10 give the Mean amount of Ozone for the Month.
- Number of days on which Rain fell, from Col. 25 = 11 . Greatest fall of Rain in one day, on $11'$, from Col. 25, = $.284$. The sum of the numbers in Col. 25, or the fall of Rain in the month, on, or within a few inches of the surface of the soil = 1.7936 . The sum of the numbers in Col. 26, or the fall of Rain in the month, at 12.0 feet above the ground = 1.7356

Summary of the Wind.								
Number of Days								
N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm
1	✓		✓	1	6	3	11	.

The Mean of the numbers in Col. 7 will give the average velocity of the wind, or its horizontal movement in miles, in the 18 hours ending at 9 a.m. = 256 Miles.

The Mean of the numbers in Col. 16 will give the horizontal movement in the 6 hours ending at 3 p.m. = 417 Miles.

These sums will be the average daily velocity for the Month = 302 Miles.

Gales occurred on the

From the Mean of the numbers in columns 3 and 4, and those in 12 and 13,
the following hygrometrical results are to be calculated by Glaisher's
Hygrometrical Tables, Third Edition.

	At 9 a.m.	At 3 p.m.
The Temperature of the Dew-point	84.6	86.8
The Elastic Force of Vapour	19.9	22.6
The Weight of Vapour in a Cubic Foot of Air ..	3.5	2.5
The additional Weight of Vapour required to saturate a Cubic Foot of Air .....	.5	.6
The degree of Humidity (complete saturation = 100)	85	91.
The average Weight of a Cubic Foot of Air ...	559.6	536.9

Barometer No. 2 made by Heggen & Gaudin; inner diameter of tube one inch
 Compared with Standard at Greenwich
 Comparison made by J. G. Alden U. S. N.
 Correction for Index error
 Correction for Capillarity

Total Correction for Index error and Capillarity..... + 0.025

THERMOMETERS—

Dry Bulb, No. { made by Negretti & Zambra Index error
Wet " No. } 29 " "

SELF-REGISTERING

Maximum, No.	28	" "		" "	" "
Minimum, No.	1	" "		" "	" "
Maximum, No.	23	" "		" "	" "
Minimum, No.	16	" "		" "	" "

NOTE.—When the Index error is +, it must be deducted; when —, added, to the monthly means of the observations.

CONSTRUCTION OF RAIN GAUGE—

The Observations have been taken by

and have been verified by me on the following days.

GENERAL PRECAUTIONS AND RECOMMENDATIONS.

- 1st.—To preserve unimpaired the continuity of observations is of great importance; and all changes in the adjustment of instruments, in their position, mode of reading, or registering, should be carefully avoided, as much as possible.
- 2nd.—It is desirable that the observations be made by one person; and where this is not practicable, that the deputy to whom they are confided previously assure himself that his method of reading is identical with that of the principal observer; and both should satisfy themselves, by frequent examination of their accuracy, that they read alike.
- 3rd.—As far as possible, registers to be perfect, but if, from any cause, observations be lost, no attempt should be made to fill the blank so caused.
- 4th.—Observations to be made at stated and regular times.
- 5th.—Before taking the means of the numbers in each month, the observer is recommended to look down each column, to see that no evident error of entry has been made (an inch in the reading of the barometer is a common error); of thermometric readings, to see that the maximum and minimum readings have not been interchanged; and, before dividing the sums of the numbers, to enquire, in each column, that the days on which observations have been entered, so as to exclude error in the division, and to use throughout decimal arithmetic.

Meteorological Observations taken at

, during the Month of

18

; Latitude

: Longitude

; Height above the Sea

* The number of each thermometer must be inserted at the head of the column containing the observations made with it.

Signed

- Meteorological Observations taken at
Edinburgh Castle
during the month of February 18 68

Barometer No. 2 made by Ricetti & Pambou ; inner diameter of tube 0.4 inch
Compared with Standard at Greenwich
Comparison made by J. G. Glaisher F.R.S.
Correction for Index error
Correction for Capillarity

Dry Bulb, No. 1	made by	<i>Reggelli's</i>	<i>gambol</i>	index error
Wet, " No. 29	21	21	22	22
REGISTERING—				
Maximum, No. 20	22	22	22	22
Minimum, No. 1	21	21	21	21
Maximum, No. 25	22	22	22	22
Minimum, No. 16	22	22	22	22

NOTE.—When the Index error is +, it must be deducted; when —, added, to the monthly means of the observations.

CONSTRUCTION OF RAIN GAUGE—

The Observations have been taken by

and have been verified by me on the following days.

GENERAL PRECAUTIONS AND RECOMMENDATIONS.

- 1st.—To preserve unimpaired the coinity of observations is of great importance; and all changes in the adjustment of instruments, in their position, mode of reading, or registering, should be carefully avoided, as much as possible.
- 2nd.—It is desirable that the observations be made by one person; and where this is not practicable, that the deputy to whom they are confided previously assure himself that his method of reading is identical with that of the principal observer; and both should satisfy themselves, by frequent examination of their accuracy, that they read alike.
- 3rd.—As far as possible, registers to be perfect, but if, from any cause, observations be lost, no attempt should be made to fill the blank so caused.
- 4th.—Observations to be made at stated and regular times.
- 5th.—Before taking the means of the numbers in each month, the observer is recommended to look down each column, to see that no evident error of entry has been made (an inch in the reading of the barometer is a common error); of thermometer readings, to see that the maximum and minimum readings have not been interchanged; and, before dividing the sums of the numbers, to count, in each column, the days on which observations have been entered, so as to exclude error in the division, and to use throughout decimal arithmetic.

Meteorological Observations taken at *Edinburgh Castle*, during the Month of *March*, 18*66*; Latitude *55° 57' N*; Longitude *3° 11' W*; Height above the Sea *402 Feet*.

* The number of each thermometer must be inserted at the head of the column containing the observations made with it.

1. The difference between the highest number in Columns 1 and 10 (36.55 on the 18°) and the lowest number in the same Columns (20.46 on the 24°) is 16.09 showing the approximate range of Atmospheric Pressure in the Month.
2. The Mean of the numbers in Columns 1 and 10, shows the approximate Mean Pressure of the Atmosphere for the Month = 29.102
3. Highest Reading in Column 19 = 59.0 on the 29° Lowest Reading in Column 20 = 20.0 on the 22° Difference = 39.0 being the range of Temperature in the Month.
4. The Difference between the Means of the numbers in Columns 19 and 20 should be the same as the Mean of the numbers in Column 21, and shows the Mean daily range = 19.5
5. The Mean of the numbers in Columns 19 and 20 should be the same as the Mean of the numbers in Column 22, and gives the approximate Mean Temperature of the Air for the Month = 27.0
6. The highest number in Column 21 (22.5 on the 20°) and the lowest number in the same Column (9.0 on the 4°) show the greatest and least daily range of Temperature during the Month.
7. The highest number in Column 22 (49.2 on the 29°), and the lowest number in the same Column (10.7 on the 4°) show the highest and lowest approximate mean daily Temperature of the Air for the Month.
8. The mean of the numbers in Columns 8 and 17 = 7.1 give the Mean amount of Cloud for the Month.
9. The Mean of the numbers in Columns 9 and 18 = 1.5 give the Mean amount of Ozone for the Month.
- 10.—Number of days on which Rain fell, from Col. 25, = 11 . Greatest fall of Rain in one day, on 24 , from Col. 25, = 2.40 . The sum of the numbers in Col. 25, or the fall of Rain in the month, on, or within a few inches of the surface of the soil = 1.060 . The sum of the numbers in Col. 26, or the fall of Rain in the month, at 12.4 feet above the ground = 9.30

Summary of the Wind.								
Number of Days								
N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm
1	6		7	1	7	5	5	1

The Mean of the numbers in Col. 7 will give the average velocity of the wind, or its horizontal movement in miles, in the 18 hours ending at 9 a.m. = 211.6 Miles.
The Mean of the numbers in Col. 16 will give the horizontal movement in the 6 hours ending at 3 p.m. = 53.4 Miles.
These sums will be the average daily velocity for the Month = 265.2 Miles.
Gales occurred on the $18, 12, 16, 24$

From the Mean of the numbers in columns 3 and 4, and those in 12 and 13, the following hygrometrical results are to be calculated by Glaisher's Hygrometrical Tables, Third Edition.

	At 9 a.m.	At 3 p.m.
The Temperature of the Dew-point	54.6	55.3
The Elastic Force of Vapour	2.00	2.06
The Weight of Vapour in a Cubic Foot of Air ..	2.3	2.4
The additional Weight of Vapour required to saturate a Cubic Foot of Air	$.5$	$.7$
The degree of Humidity (complete saturation } =100)	84	81
The average Weight of a Cubic Foot of Air	542.1	539.8

Barometer No. 2 made by *Regeth & Gaudin*; inner diameter of tube 0.40 inch

Compared with Standard at *Glasgow*

Comparison made by *G. Glaisher L.R.S.*

Correction for Index error + 0.018

Correction for Capillarity - 0.007

Total Correction for Index error and Capillarity..... + 0.025

THERMOMETERS—

Dry Bulb, No. 7 made by *Regeth & Gaudin* Index error

Wet „ No. 29 „ „ „ „ „ „

SELF-REGISTERING—

Maximum, No. 20 „ „ „ „ „ „

Minimum, No. 1 „ „ „ „ „ „

Maximum, No. 23 „ „ „ „ „ „

Minimum, No. 16 „ „ „ „ „ „

NOTE.—When the Index error is +, it must be deducted; when —, added, to the monthly means of the observations.

CONSTRUCTION OF RAIN GAUGE—*Glaisher*

The Observations have been taken by

and have been verified by me on the following days.

GENERAL PRECAUTIONS AND RECOMMENDATIONS.

- 1st.—To preserve unimpaired the continuity of observations is of great importance; and all changes in the adjustment of instruments, in their position, mode of reading, or registering, should be carefully avoided, as much as possible.
- 2nd.—It is desirable that the observations be made by one person; and where this is not practicable, that the deputy to whom they are confided previously assure himself that his method of reading is identical with that of the principal observer; and both should satisfy themselves, by frequent examination of their accuracy, that they read alike.
- 3rd.—As far as possible, registers to be perfect, but if, from any cause, observations be lost, no attempt should be made to fill the blank so caused.
- 4th.—Observations to be made at stated and regular times.
- 5th.—Before taking the means of the numbers in each month, the observer is recommended to look down each column, to see that no evident error of entry has been made (an inch in the reading of the barometer is a common error); of thermometric readings, to see that the maximum and minimum readings have not been interchanged; and, before dividing the sums of the numbers, to count, in each column, the days on which observations have been entered, so as to exclude error in the division, and to use throughout decimal arithmetic.

Meteorological Observations taken at

Edinburgh

during the month of *March* 18*66*

Meteorological Observations taken at *Admbyh Lakto*, during the Month of *April*, 18*86*; Latitude *55° 57' N*; Longitude *5° 11' W*; Height above the Sea *402 Feet*

Day of Week	Day of Month	At 9h. A.M., Local Time										At 3h. P.M., Local Time										At 9h. A.M., Local Time										GENERAL REMARKS
		Reading of				Wind		Amount of Cloud	Ozone Scale	Dr. Moist	Reading of				Wind		Amount of Cloud	Ozone Scale	Dr. Moist	Reading of Self-registering Thermometers *						Rain fallen in previous 24 hours						
		Barometer	Attached Therm.	Dry Bulb Therm.	Wet Bulb Therm.	By estimation					By Robinson's Anemometer	Force 0-12	Miles	Barometer	Attached Therm.	Dry Bulb Therm.				Wet Bulb Therm.	By estimation		By Robinson's Anemometer	Force 0-12	Miles	Max. in Air	Min. in Air	Diff. or Range of Temp.	Mean of Max. and Min. or approximate mean Temperature	Max. in Sun's Rays	Min. on Grass		On the Ground in.	1/2 ft. above Ground in.
						Direction	Force 0-12	Direction	Force 0-12	Max. in Air							Min. in Air	Max. in Air	Min. in Air		Max. in Air	Min. in Air										
in.	o	o	o	Direction	Force 0-12	Miles	0-10	Dr. Moist	in.	o	o	o	Direction	Force 0-12	Miles	0-10	Dr. Moist	o	o	o	o	o	o	o	o	o	o	o				
✓	1	29.254	42	54.0	37.0	N.E.	4	324.8	10		29.216	44	53.5	37.5	E	3	542.2	10		53.0	50.8	22.2	41.9	70.0	50.0	500	500	Wet a. S. Pm. See a				
M	2	29.206	42	59.0	36.0	N.W.	3	154.5	8	3	29.264	44	43.0	41.5	N.W.	2	54.6	8	1	52.5	51.0	21.5	41.7	85.0	51.0	310	280	Agreeable a. Agreeable				
✓	3	29.236	44	58.8	37.5	N.W.	4	162.0	10										1	52.0	51.0	11.0	56.5	59.0	37.0	260	280	See a. Agreeable				
M	4	29.274	44	37.6	34.0	N.				2	29.404	48	42.0	34.0	N	4	61.5	8		45.0	50.8	14.2	37.9	65.0	51.0	500	500	Agreeable c. Agreeable				
✓	5	29.644	44	58.0	36.0	S.E.	5	333.9	6		29.636	48	42.0	38.5	N.E.	3	47.1	2		47.0	48.0	19.0	37.5	57.0	26.0	500	500	See c. See label				
✓	6	29.974	48	43.0	39.5	E.	3	176.5	6	1	29.978	50	41.0	39.2	E	5	95.8	8		47.0	52.0	15.0	39.5	80.0	52.0	450	450	See c. Showery				
✓	7	29.666	47	41.0	40.2	N.W.	4	390.9	8	3	29.708	50	39.0	39.0	N.W.	6	99.1	70		44.0	51.8	12.2	37.9	60.0	50.0	570	570	See. See West a.				
✓	8	29.750	44	40.5	39.2	S.E.	4	332.1	10		29.794	46	42.2	40.2	E	4	50.7	8		45.5	53.5	12.0	39.5	65.0	53.0	500	500	See a. Agreeable				
M	9	29.770	47	40.0	40.0	S.E.	3	110.1	10		29.704	50	42.5	41.5	S.E.	4	74.6	10		52.0	55.0	17.0	43.5	66.0	55.0	500	500	See a. Fog				
✓	10	29.368	48	42.5	41.0	S.E.	5	433.1	10		29.224	52	42.8	45.5	S.E.	4	62.4	10		50.0	58.0	15.0	42.5	70.0	58.0	530	530	See a. Agreeable				
M	11	29.216	46	43.0	43.0	N.W.	2	92.9	8		29.300	50	48.5	46.0	N.W.	3	53.1	8		50.0	56.5	13.5	43.2	68.0	56.0	530	530	Agreeable c. Agreeable				
✓	12	29.240	46	42.0	41.5	N.W.	2	95.8	8		29.356	50	49.0	47.0	S.E.	2	20.3	8		52.0	57.0	15.0	44.5	72.0	56.0	500	500	Agreeable c. Agreeable				
✓	13	29.120	52	43.5	41.6	N	3	88.0	6	1	29.138	54	51.0	47.5	N	4	51.5	8		57.5	53.0	24.5	45.2	90.0	52.0	500	500	Agreeable s.e. Agreeable				
✓	14	29.530	52	49.5	46.5	N	2	163.0	8		29.288	56	52.5	46.0	N	4	49.2	7		58.5	40.0	18.5	49.2	95.0	51.5	500	500	Agreeable Agreeable				
✓	15	29.550	52	53.0	47.0	N.W.	3	175.0	6		29.508	54	52.7	47.8	N.W.		40.9	7		56.0	47.0	19.0	46.5	78.5	56.0	200	200	Agreeable c. Agreeable				
M	16	29.056	50	47.0	47.0	N.	2	152.0	10		29.962	53	52.5	38.0	N	6	90.6	8		56.0	53.5	22.5	45.7	96.5	56.5	500	500	Wet do. Rain				
✓	17	29.102	52	49.5	48.0	N.W.	6	325.5	6		29.222	56	51.5	47.5	N.W.	8	132.8	8		53.5	40.0	13.5	46.7	77.5	40.0	550	520	Thin a. Agreeable				
✓	18	29.500	50	42.5	40.5	N	1	211.2	10		29.548	52	41.5	40.0	N	3	69.2	10		50.0	57.8	12.2	43.9	65.0	58.0	570	500	See a. See.				
✓	19	29.346	46	40.5	40.0	S.E.	1	137.5	10	1	29.238	52	47.0	44.0	S.E.	2	48.1	9		57.0	50.0	27.0	40.5	80.0	50.0	750	530	See West Agreeable				
✓	20	29.200	50	49.5	44.5	N.W.	3	205.2	5	3	29.268	54	51.2	45.5	N.W.	3	63.8	7	1	56.0	37.0	19.0	46.5	92.0	55.0	500	450	Beautiful Beautiful				
✓	21	29.626	52	53.2	48.5	Calcu	0	57.4	6		29.730	58	56.0	51.0	Calcu	0	10.4	7		60.0	55.0	25.0	47.5	91.0	51.0	500	500	Beautiful Beautiful				
✓	22	30.018	52	52.0	50.0	E	2	119.9	6		30.060	56	58.5	57.5	E	2	52.6	5		62.0	41.0	31.0	51.9	103.5	56.0	500	500	Beautiful Beautiful				
M	23	30.192	52	46.4	35.0	N.E.	1	58.4	8		30.158	53	47.0	44.5	N.E.	2	52.7	1	2	55.0	37.5	17.5	46.2	107.0	56.0	500	500	Beautiful Beautiful				
✓	24	30.044	50	45.5	41.5	N.E.	1	176.5	5		29.982	52	44.2	42.0	N.E.	3	64.5	2		54.5	34.0	20.5	44.2	100.0	53.5	500	500	Beautiful-c Beautiful				
✓	25	29.912	50	48.5	46.0	N.E.	2	237.0	5		29.822	54	49.2	45.0	N.E.	4	70.9	3		55.0	34.5	20.5	44.7	112.0	55.0	500	500	Beautiful-c Beautiful				
✓	26	29.790	52	46.5	44.0	N.E.	2	187.9	4		29.690	55	48.0	46.0	N.E.	3	77.8	1		55.0	34.5	20.5	44.7	100.0	56.0	500	500	Beautiful Beautiful				
✓	27	29.540	50	47.0	45.0	N.E.	1	161.8	4		29.550	54	50.0	47.0	N.E.		27.6	3		56.5	34.5	22.6	45.5	91.0	54.0	500	500	Beautiful Beautiful				
✓	28	29.192	50	39.8	39.5	N.E.	2	152.4	10		29.228	53	47.0	41.0	N.E.	2	27.9	6		50.0	36.0	14.5	43.2	80.0	56.0	550	500	Wet. See				
✓	29	29.566	50	44.0	40.0	N.E.	1	116.5	6	1	29.600	52	48.0	45.0	N.E.	2	50.8	6	1	50.0	50.0	20.0	41.0	84.0	29.0	550	550	Thin Thin				
M	30	29.568	50	46.0	38.2	Calcu	0	96.4	6	3	29.500	50	43.0	36.5	N.E.	2	51.4	2		57.5	27.0	24.5	39.2	94.0	34.0	500	550	Thin Beautiful				
	31																															
Sums		2985.532	454	1327.3	1247.7		73	5361.6	223	23	856.103	1506	1360.3	1267.7		94	1667.6	190	3	1569.5	1027.6	502.6	1299.4	2470.6	991.5	1580	1720					
Means		29.517	48	44.3	41.6		2.4	167.7	7.7	7	29.531	52	47.2	45.3		3.2	47.3	6.8	7	56.3	36.8	18.4	43.2	83.0	53.0	25	26					
Index errors & capillary		+ .025									+ .025																					
Correction for Temp.		- .052									- .062																					
Means Corrected		29.490									29.464																					
Number of Column..		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24							

* The number of each thermometer must be inserted at the head of the column containing the observations made with it.

Meteorological Observations taken at

Edinburgh Castle,

during the Month of

May

, 1866 ;

Latitude 55° 54' N ;

Longitude 3° 11' W ;

Height above the Sea 402 Feet

Day of Week	Day of Month	At 9h. A.M., Local Time										At 3h. P.M., Local Time										At 9h. A.M., Local Time										GENERAL REMARKS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		Reading of				Wind			Amount of Cloud 0-10	Ozone Scale Dr. Moffat	Reading of				Wind			Amount of Cloud 0-10	Ozone Scale Dr. Moffat	Reading of Self-registering Thermometers *						Rain fallen in previous 24 hours																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
		Barometer in.	Attached Therm. °	Dry Bulb Therm. °	Wet Bulb Therm. °	By estimation	Direction	Force 0-12			Miles	By Robinson's Anemometer	Amount of Cloud 0-10	Ozone Scale Dr. Moffat	Max. in Air °	Min. in Air °	Diff. or Range of Temp. °			Mean of Max. and Min. or approximate mean Temperature °	Max. in Sun's Rays °	Min. on Grass °	On the Ground in.	ft. above Ground in.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
									Barometer in.	Attached Therm. °								Dry Bulb Therm. °	Wet Bulb Therm. °						By estimation	Direction	Force 0-12	Miles	By Robinson's Anemometer	Amount of Cloud 0-10	Ozone Scale Dr. Moffat		Max. in Air °	Min. in Air °	Diff. or Range of Temp. °	Mean of Max. and Min. or approximate mean Temperature °	Max. in Sun's Rays °	Min. on Grass °	On the Ground in.	ft. above Ground in.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

* The number of each thermometer must be inserted at the head of the column containing the observations made with it.

Thunder-storms occurred on
 Thunder was heard, but Lightning was not seen on
 Lightning was seen, but Thunder was not heard on
 Solar Halos were seen on
 Lunar Halos were seen on
 Aurora Borealis was seen on
 Remarkable Rain fell on
 Snow fell on
 Hail fell on 1. 2. 29. 26
 Fog prevailed on 12. 17. 26

1. The difference between the highest number in Columns 1 and 10 (29.44 on the 21^{st}) and the lowest number in the same Columns (26.95 on the 11^{th}) is 2.49 showing the approximate range of Atmospheric Pressure in the Month.
2. The Mean of the numbers in Columns 1 and 10, shows the approximate Mean Pressure of the Atmosphere for the Month = 28.474
3. Highest Reading in Column 19 = 73.5 on the 24^{th} Lowest Reading in Column 20 = 27.0 on the 2^{nd} Difference = 46.5 being the range of Temperature in the Month.
4. The Difference between the Means of the numbers in Columns 19 and 20 should be the same as the Mean of the numbers in Column 21, and shows the Mean daily range = 21.6
5. The Mean of the numbers in Columns 19 and 20 should be the same as the Mean of the numbers in Column 22, and gives the approximate Mean Temperature of the Air for the Month = 48.4
6. The highest number in Column 21 (86.0 on the 25^{th}) and the lowest number in the same Column (12.0 on the 5^{th}) show the greatest and least daily range of Temperature during the Month.
7. The highest number in Column 22 (47.5 on the 24^{th}) and the lowest number in the same Column (36.5 on the 1^{st}) show the highest and lowest approximate mean daily Temperature of the Air for the Month.
8. The mean of the numbers in Columns 8 and 17 = 5.7 give the Mean amount of Cloud for the Month.
9. The Mean of the numbers in Columns 9 and 18 = 5.7 give the Mean amount of Ozone for the Month.
- 10.—Number of days on which Rain fell, from Col. 25, = 12 . Greatest fall of Rain in one day, on 11^{th} , from Col. 25, = $.420$. The sum of the numbers in Col. 25, or the fall of Rain in the month, on, or within a few inches of the surface of the soil = 1.640 . The sum of the numbers in Col. 26, or the fall of Rain in the month, at 12.0 feet above the ground = 1.440 .

Summary of the Wind.									From the Mean of the numbers in columns 3 and 4, and those in 12 and 13, the following hygrometrical results are to be calculated by Glaisher's Hygrometrical Tables, Third Edition.		
Number of Days									At 9 a.m.	At 3 p.m.	
N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm	The Temperature of the Dew-point		
3	5	2	4		3	2	11	1	39.6	41.8	
2	0	2	3		3	1	11	1	24.2	26.1	
The Mean of the numbers in Col. 7 will give the average velocity of the wind, or its horizontal movement in miles, in the 18 hours ending at 9 a.m. =									2.7	2.9	
The Mean of the numbers in Col. 10 will give the horizontal movement in the 6 hours ending at 3 p.m. =									1.5	1.6	
These sums will be the average daily velocity for the Month =									6.4	6.4	
Gales occurred on the									534.4	551.6	

Barometer No. made by ; inner diameter of tube inch
 Compared with Standard at
 Comparison made by
 Correction for Index error
 Correction for Capillarity

Total Correction for Index error and Capillarity.....

THERMOMETERS—

Dry Bulb, No. made by Index error
 Wet „ No. „ „ „ „

SELF-REGISTERING—

Maximum, No. „ „ „ „
 Minimum, No. „ „ „ „
 Maximum, No. „ „ „ „
 Minimum, No. „ „ „ „

NOTE.—When the Index error is +, it must be deducted; when —, added, to the monthly means of the observations.

CONSTRUCTION OF RAIN GAUGE—

The Observations have been taken by

and have been verified by me on the following days.

GENERAL PRECAUTIONS AND RECOMMENDATIONS.

- 1st.—To preserve unimpaired the continuity of observations is of great importance; and all changes in the adjustment of instruments, in their position, mode of reading, or registering, should be carefully avoided, as much as possible.
- 2nd.—It is desirable that the observations be made by one person; and where this is not practicable, that the deputy to whom they are confided previously assure himself that his method of reading is identical with that of the principal observer; and both should satisfy themselves, by frequent examination of their accuracy, that they read alike.
- 3rd.—As far as possible, registers to be perfect, but if, from any cause, observations be lost, no attempt should be made to fill the blank so caused.
- 4th.—Observations to be made at stated and regular times.
- 5th.—Before taking the means of the numbers in each month, the observer is recommended to look down each column, to see that no evident error of entry has been made (an inch in the reading of the barometer is a common error); of thermometric readings, to see that the maximum and minimum readings have not been interchanged; and, before dividing the sums of the numbers, to count, in each column, the days on which observations have been entered, so as to exclude error in the division, and to use throughout decimal arithmetic.

Meteorological Observations taken at

Edinburgh Castle

during the month of *May* 18*66*

1. The difference between the highest number in Columns 1 and 10 (99.86 on the 24°) and the lowest number in the same Columns (28.75 on the 16°) is 71.11 showing the approximate range of Atmospheric Pressure in the Month.
2. The Mean of the numbers in Columns 1 and 10, shows the approximate Mean Pressure of the Atmosphere for the Month = 29.402 .
3. Highest Reading in Column 19 = 84.00 on the 27° Lowest Reading in Column 20 = 35.6 on the 18° Difference = 48.4 being the range of Temperature in the Month.
4. The Difference between the Means of the numbers in Columns 19 and 20 should be the same as the Mean of the numbers in Column 21, and shows the Mean daily range = 28.2 .
5. The Mean of the numbers in Columns 19 and 20 should be the same as the Mean of the numbers in Column 22, and gives the approximate Mean Temperature of the Air for the Month = 54.5 .
6. The highest number in Column 21 (60.5 on the 24°) and the lowest number in the same Column (28.0 on the 18°) show the greatest and least daily range of Temperature during the Month.
7. The highest number in Column 22 (71.0 on the 27°), and the lowest number in the same Column (46.6 on the 18°) show the highest and lowest approximate mean daily Temperature of the Air for the Month.
8. The mean of the numbers in Columns 8 and 17 = 7.5 give the Mean amount of Cloud for the Month.
9. The Mean of the numbers in Columns 9 and 18 = 1.2 give the Mean amount of Ozone for the Month.
- 10.—Number of days on which Rain fell, from Col. 25, = 18 , Greatest fall of Rain in one day, on 8 from Col. 25, = 3.00 . The sum of the numbers in Col. 25, or the fall of Rain in the month, on, or within a few inches of the surface of the soil = 17.50 . The sum of the numbers in Col. 26, or the fall of Rain in the month, at 2.2 feet above the ground = 1.416 .

Summary of the Wind.								
Number of Days								
N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm
2	2	5	2		6	2	7	2
4	5	3	3	2	2	2	4	1

The Mean of the numbers in Col. 7 will give the average velocity of the wind, or its horizontal movement in miles, in the 18 hours ending at 9 a.m. = 160.1 Miles.
The Mean of the numbers in Col. 16 will give the horizontal movement in the 6 hours ending at 3 p.m. = 51.6 Miles.
These sums will be the average daily velocity for the Month = 211.5 Miles.
Gales occurred on the

From the Mean of the numbers in columns 3 and 4, and those in 12 and 13, the following hygrometrical results are to be calculated by Glaisher's Hygrometrical Tables, Third Edition.

	At 9 a.m.	At 3 p.m.
The Temperature of the Dew-point	50.9	50.2
The Elastic Force of Vapour	377	372
The Weight of Vapour in a Cubic Foot of Air ..	4.2	4.1
The additional Weight of Vapour required to saturate a Cubic Foot of Air	1.2	1.7
The degree of Humidity (complete saturation = 100)	71	71
The average Weight of a Cubic Foot of Air	525.5	522.7

Barometer No. made by ; inner diameter of tube inch

Compared with Standard at

Comparison made by

Correction for Index error = 0.012

Correction for Capillarity = 0.005

Total Correction for Index error and Capillarity = 0.027

THERMOMETERS—

Dry Bulb, No. made by

Wet „ No. „ „

SELF-REGISTERING—

Maximum, No. „ „

Minimum, No. „ „

Maximum, No. „ „

Minimum, No. „ „

NOTE.—When the Index error is +, it must be deducted; when —, added, to the monthly means of the observations.

CONSTRUCTION OF RAIN GAUGE—

The Observations have been taken by

and have been verified by me on the following days.

GENERAL PRECAUTIONS AND RECOMMENDATIONS.

- 1st.—To preserve unimpaired the continuity of observations is of great importance; and all changes in the adjustment of instruments, in their position, mode of reading, or registering, should be carefully avoided, as much as possible.
- 2nd.—It is desirable that the observations be made by one person; and where this is not practicable, that the deputy to whom they are confided previously assure himself that his method of reading is identical with that of the principal observer; and both should satisfy themselves, by frequent examination of their accuracy, that they read alike.
- 3rd.—As far as possible, registers to be perfect, but if, from any cause, observations be lost, no attempt should be made to fill the blank so caused.
- 4th.—Observations to be made at stated and regular times.
- 5th.—Before taking the means of the numbers in each month, the observer is recommended to look down each column, to see that no evident error of entry has been made (an inch in the reading of the barometer is a common error); of thermometric readings, to see that the maximum and minimum readings have not been interchanged; and, before dividing the sums of the numbers, to count, in each column, the days on which observations have been entered, so as to exclude error in the division, and to use throughout decimal arithmetic.

Meteorological Observations taken at

Edinburgh Castle

during the month of *June* 18 *66*

, 1866; Latitude $55^{\circ} 57' \frac{1}{2}''$ N; Longitude $3^{\circ} 11'$ W; Height above the Sea 402 Feet

* The number of each thermometer must be inserted at the head of the column containing the observations made with it.

Signed

1. The difference between the highest number in Columns 1 and 10 (29.86 on the 1^{st}) and the lowest number in the same Columns (28.74 on the 3^{rd}) is 1.12 showing the approximate range of Atmospheric Pressure in the Month.
2. The Mean of the numbers in Columns 1 and 10, shows the approximate Mean Pressure of the Atmosphere for the Month = 29.434 .
3. Highest Reading in Column 19 = 85.0 on the 1^{st} Lowest Reading in Column 20 = 44.0 on the 2^{nd} Difference = 41.0 being the range of Temperature in the Month.
4. The Difference between the Means of the numbers in Columns 19 and 20 should be the same as the Mean of the numbers in Column 21, and shows the Mean daily range = 16.8 .
5. The Mean of the numbers in Columns 19 and 20 should be the same as the Mean of the numbers in Column 22, and gives the approximate Mean Temperature of the Air for the Month = 57.4 .
6. The highest number in Column 21 (116.0 on the 2^{nd}) and the lowest number in the same Column (50.5 on the 2^{nd}) show the greatest and least daily range of Temperature during the Month.
7. The highest number in Column 22 (71.4 on the 1^{st}), and the lowest number in the same Column (50.2 on the 5^{th}) show the highest and lowest approximate mean daily Temperature of the Air for the Month.
8. The mean of the numbers in Columns 8 and 17 = 6.7 give the Mean amount of Cloud for the Month.
9. The Mean of the numbers in Columns 9 and 18 = 1.1 give the Mean amount of Ozone for the Month.
- 10.—Number of days on which Rain fell, from Col. 25, = 14 . Greatest fall of Rain in one day, on 1^{st} , from Col. 25, = 2.2 . The sum of the numbers in Col. 25, or the fall of Rain in the month, on, or within a few inches of the surface of the soil = 4.100 . The sum of the numbers in Col. 26, or the fall of Rain in the month, at 220 feet above the ground = 3.730 .

Summary of the Wind.								
Number of Days								
N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm
1	5	3	4		4	4	6	2
5	4	4	6		3	4	6	

The Mean of the numbers in Col. 7 will give the average velocity of the wind, or its horizontal movement in miles, in the 18 hours ending at 9 a.m. = 161.5 Miles.

The Mean of the numbers in Col. 16 will give the horizontal movement in the 6 hours ending at 3 p.m. = 58.2 Miles.

These sums will be the average daily velocity for the Month = 211.7 Miles.

Gales occurred on the 9^{th} & 10^{th} .

Barometer No. 2 made by *Reynolds & Zambra*; inner diameter of tube 9.40 inch

Compared with Standard at *Greenwich*

Comparison made by *J. Glaisher F.R.S.*

Correction for Index error $+ 0.012$

Correction for Capillarity $- 0.027$

Total Correction for Index error and Capillarity $- 0.025$

THERMOMETERS—

Dry Bulb, No. made by

Wet „ No. „

Index error

SELF-REGISTERING—

Maximum, No. „

Minimum, No. „

Maximum, No. „

Minimum, No. „

„ „

„ „

„ „

„ „

NOTE.—When the Index error is +, it must be deducted; when —, added, to the monthly means of the observations.

CONSTRUCTION OF RAIN GAUGE—

The Observations have been taken by

and have been verified by me on the following days.

GENERAL PRECAUTIONS AND RECOMMENDATIONS.

- 1st.—To preserve unimpaired the continuity of observations is of great importance; and all changes in the adjustment of instruments, in their position, mode of reading, or registering, should be carefully avoided, as much as possible.
- 2nd.—It is desirable that the observations be made by one person; and where this is not practicable, that the deputy to whom they are confided previously assure himself that his method of reading is identical with that of the principal observer; and both should satisfy themselves, by frequent examination of their accuracy, that they read alike.
- 3rd.—As far as possible, registers to be perfect, but if, from any cause, observations be lost, no attempt should be made to fill the blank so caused.
- 4th.—Observations to be made at stated and regular times.
- 5th.—Before taking the means of the numbers in each month, the observer is recommended to look down each column, to see that no evident error of entry has been made (an inch in the reading of the barometer is a common error); of thermometric readings, to see that the maximum and minimum readings have not been interchanged; and, before dividing the sums of the numbers, to count, in each column, the days on which observations have been entered, so as to exclude error in the division, and to use throughout decimal arithmetic.

Meteorological Observations taken at

Edinburgh Castle

during the month of *July* 18*88*

Meteorological Observations taken at *Edinburgh Castle*, during the Month of *August*, 18*86*; Latitude *55° 57' N*; Longitude *3° 11' W*; Height above the Sea *202 feet*

Day of Week	Day of Month	At 9h. A.M., Local Time										At 3h. P.M., Local Time										At 9h. A.M., Local Time										GENERAL REMARKS
		Reading of				Wind		Amount	Ozone Scale	Dr. Meffat	of Cloud	Reading of				Wind		Amount	Ozone Scale	Dr. Meffat	of Cloud	Reading of Self-registering Thermometers *				Rain fallen in previous 24 hours						
		Barometer	Attached Therm.	Dry Bulb Therm.	Wet Bulb Therm.	By estimation	By Robinson's Anemometer					Barometer	Attached Therm.	Dry Bulb Therm.	Wet Bulb Therm.	By estimation	By Robinson's Anemometer					Max. in Air	Min. in Air	Diff. or Range of Temp.	Mean of Max. and Min. or approximate mean temperature	Max. in Sun's Rays	Min. on Grass					
		in.	°	°	°	Direction	Force 0-12	Miles	0-10	0-10	0-10	in.	°	°	°	Direction	Force 0-12	Miles	0-10	0-10	0-10	°	°	°	°	°	°	°	°	in.	1/2 ft. above Ground in.	
W	1	29.486	56	58.0	50.5	SE	2	175.1	4	1	29.372	56	57.5	53.5	SE	6	183.5	6	1	60.0	44.5	17.5	52.2	41.0	57.0	16.0	57.0	0.00	Beautiful c	Beautiful		
Th	2	29.146	56	55.5	55.5	E	2	203.7	10	1	29.226	56	55.5	55.0	SE	6	179.1	10	1	59.0	50.0	7.2	54.6	50.0	55.0	5.0	55.0	0.20	Dull	Dull		
F	3	29.120	56	57.0	54.5	WNW	4	210.0	10	1	29.078	58	58.0	52.0	W	6	192.9	6	1	65.0	50.0	15.0	57.5	49.5	50.0	0.50	50.0	0.50	Dull	Fine c		
S	4	29.020	56	55.0	53.0	W	5	206.3	10	1	20.000	56	60.0	53.0	W	7	108.3	4	1	64.0	47.0	17.0	55.5	46.0	50.0	0.50	50.0	0.50	Dull	Fine c		
Th	5	29.184	58	58.0	50.5	WNW	5	294.9	6	4	29.202	58	61.0	54.0	SE	6	196.6	6	1	65.0	45.0	20.0	55.0	44.5	50.0	0.50	50.0	0.50	Fine c	Fine		
F	6	29.112	56	52.5	40.5	WNW	2	174.7	10	1	20.076	56	53.0	48.0	SE	2	144.6	11	1	61.0	45.0	16.0	53.0	43.5	50.0	0.00	50.0	0.00	Dull	Dull		
S	7	29.076	56	52.0	52.0	WNW	2	152.0	10	1	20.042	56	58.0	55.0	SE	2	149.4	8	1	62.0	44.0	18.0	53.0	44.0	50.0	0.20	50.0	0.20	Dull	Agreeable		
Th	8	29.034	56	55.0	50.5	W	4	227.5	7	1	20.076	56	56.0	52.0	SE	3	153.1	10	1	60.0	44.5	15.5	52.2	41.0	50.0	0.00	50.0	0.00	Agreeable	Dull		
F	9	29.088	54	51.2	50.0	WNW	2	110.0	9	1	29.098	56	58.0	54.5	WNW	2	148.8	11	1	65.0	46.0	19.0	55.5	44.5	50.0	0.20	50.0	0.20	Dull	Dull		
S	10	29.208	58	59.5	53.5	WNW	2	121.5	6	1	29.300	56	56.5	53.5	WNW	2	139.8	11	1	64.0	43.0	21.0	53.8	41.0	50.0	0.00	50.0	0.00	Fine c	Shower		
Th	11	29.658	56	53.5	49.0	WNW	1	194.9	7	1	29.618	56	56.5	51.5	WNW	1	23.1	10	1	57.0	46.5	12.5	52.7	46.0	50.0	0.20	50.0	0.20	Agreeable	Dull		
F	12	29.560	56	55.5	53.0	SE	1	124.5	10	1	29.520	56	58.0	55.0	SE	1	17.8	11	1	62.5	48.0	14.5	53.2	47.0	50.0	0.50	50.0	0.50	Dull	Dull		
S	13	29.532	56	56.0	53.8	SE	1	118.9	10	1	29.500	58	59.0	55.5	SE	2	31.3	10	1	60.5	48.0	12.5	54.0	46.0	50.0	0.10	50.0	0.10	Dull	Dull		
Th	14	29.336	58	54.5	52.0	WNW	2	106.9	8	1	29.402	60	65.0	57.2	WNW	1	33.4	8	1	60.5	51.0	17.5	54.7	49.5	50.0	0.20	50.0	0.20	Agreeable	Beautiful		
F	15	29.484	58	57.0	57.0	WNW	4	109.1	4	1	29.458	58	57.0	52.0	WNW	4	52.8	8	1	62.0	47.0	15.0	54.5	45.0	50.0	0.00	50.0	0.00	Beautiful c	Dull		
S	16	29.124	55	46.0	45.0	WNW	2	166.6	8	1	29.050	56	48.5	47.0	WNW	3	42.5	9	1	62.0	47.5	24.5	54.7	50.0	50.0	0.00	50.0	0.00	Agreeable	Dull		
Th	17	29.260	56	59.5	53.5	WNW	3	141.0	6	2	29.320	56	55.5	52.0	WNW	4	52.8	8	1	64.5	43.0	21.5	53.7	42.0	50.0	0.10	50.0	0.10	Beautiful	Shower		
F	18	29.464	56	54.0	49.5	WNW	2	115.9	8	1	29.430	56	56.5	50.5	WNW	2	47.9	8	1	64.0	42.0	22.0	53.0	39.5	50.0	0.50	50.0	0.50	Beautiful	Agreeable		
S	19	29.420	58	56.0	52.0	WNW	2	109.7	8	1	29.404	58	58.0	52.5	WNW	2	46.6	8	1	60.0	44.0	22.0	53.0	44.0	50.0	0.00	50.0	0.00	Fine c	Fine c		
Th	20	29.428	58	55.5	53.0	WNW	2	103.2	10	1	29.444	60	58.5	57.0	SE	4	60.3	10	1	65.0	45.0	20.0	53.0	45.0	50.0	0.00	50.0	0.00	Agreeable	Fine c		
F	21	29.578	58	54.2	52.0	SE	3	106.0	10	2	29.600	60	60.0	56.5	SE	3	53.0	7	1	62.5	52.0	10.5	57.2	52.0	50.0	0.00	50.0	0.00	Dull	Fine c		
S	22	29.1652	58	53.0	51.5	SE	2	102.2	10	1	29.000	58	55.0	53.5	SE	4	61.9	7	1	60.0	49.0	11.0	54.5	49.0	50.0	0.00	50.0	0.00	Dull	Dull		
Th	23	29.656	58	55.0	53.5	SE	2	149.8	10	1	29.632	59	61.5	58.0	SE	3	49.2	10	1	64.5	47.0	17.5	55.7	44.0	50.0	0.10	50.0	0.10	Agreeable	Dull		
F	24	29.604	58	53.8	57.5	SE	2	120.8	10	1	29.600	60	61.0	59.5	SE	3	53.7	8	1	60.0	52.5	12.5	58.7	51.0	50.0	0.20	50.0	0.20	Dull	Agreeable		
S	25	29.880	60	59.0	57.0	S	1	88.4	10	1	29.500	60	63.0	59.0	S	2	59.8	6	1	57.0	50.0	17.0	58.5	47.0	50.0	0.70	50.0	0.70	Dull	Agreeable		
Th	26	29.460	60	53.0	60.0	WNW	4	178.3	1	2	29.428	62	70.0	63.0	WNW	5	16.8	1	1	62.0	51.0	21.0	61.5	51.0	50.0	0.50	50.0	0.50	Beautiful c	Beautiful		
F	27	29.218	61	59.0	56.0	W	3	257.7	8	4	29.202	62	61.0	56.0	WNW	3	48.9	7	1	67.0	52.5	14.5	59.7	52.0	50.0	0.10	50.0	0.10	Dull	Agreeable		
S	28	29.270	60	55.5	53.5	W	1	107.9	10	1	29.242	60	57.5	54.5	SE	3	41.8	10	1	61.5	47.0	14.5	54.2	43.0	50.0	0.00	50.0	0.00	Dull	Dull		
Th	29	29.210	58	54.0	52.5	SE	4	238.7	10	1	29.200	58	56.0	54.0	SE	5	73.0	10	1	61.0	50.5	10.5	55.7	51.0	50.0	0.00	50.0	0.00	Dull	Dull		
F	30	29.238	58	57.5	52.5	WNW	2	128.9	5	1	29.282	58	60.0	53.0	WNW	2	23.5	4	1	60.0	44.0	22.0	55.0	42.0	50.0	0.50	50.0	0.50	Beautiful c	Beautiful		
S	31	29.344	58	60.0	53.0	WNW	2	91.5	8	2	29.278	58	58.6	52.5	WNW	2	20.6	10	1	60.0	45.0	19.0	54.5	41.0	50.0	0.00	50.0	0.00	Fine	Dull		
Sums	.....	908.166	1776	1701.2	1655.3		76	5149.4	255	28	904.121	1790	1808.1	1683.0		101	1602.3	257		1770.8	1452.3	518.5	1711.9		1412.0	2.695	2.400				
Means	.....	29.508	57.4	55.8	52.8		2.4	165.9	2.2	9	29.496	58	58.3	54.3		3.2	51.7	2.3		25.5	46.8	16.7	55.1		46.3	25	26				
Index errors & capillary		-.005									-.025																					
Correction for Temp.		-.075									-.078																					
Means Corrected		29.408									29.413																					
Number of Column..		1	2	3	4	5	6	7	8	9		10	11	12	13	14	15	16	17	18	19	20	21	22	23	24						
Thunder-storms occurred on Lightning was heard, but Lightning was not seen on Solar Halos were seen on Lunar Halos were seen on Aurora Borealis was seen on Remarkable Rain fell on Snow fell on Hail fell on Fog prevailed on 20. 21. 22.																																

1. The difference between the highest number in Columns 1 and 10 (29.616 on the 11^{th}) and the lowest number in the same Columns (28.521 on the 11^{th}) is $.195$, showing the approximate range of Atmospheric Pressure in the Month.
2. The Mean of the numbers in Columns 1 and 10, shows the approximate Mean Pressure of the Atmosphere for the Month = 29.200
3. Highest Reading in Column 19 = 72.0 on the 26^{th} Lowest Reading in Column 20 = 37.5 on the 16^{th} Difference = 34.5 being the range of Temperature in the Month.
4. The Difference between the Means of the numbers in Columns 19 and 20 should be the same as the Mean of the numbers in Column 21, and shows the Mean daily range = 16.7
5. The Mean of the numbers in Columns 19 and 20 should be the same as the Mean of the numbers in Column 22, and gives the approximate Mean Temperature of the Air for the Month = 55.1
6. The highest number in Column 21 (64.5 on the 16^{th}) and the lowest number in the same Column (47.2 on the 2^{nd}) show the greatest and least daily range of Temperature during the Month.
7. The highest number in Column 22 (61.5 on the 26^{th}), and the lowest number in the same Column (47.7 on the 16^{th}) show the highest and lowest approximate mean daily Temperature of the Air for the Month.
8. The mean of the numbers in Columns 8 and 17 = 8.2 give the Mean amount of Cloud for the Month.
9. The Mean of the numbers in Columns 9 and 18 = $.9$ give the Mean amount of Ozone for the Month.
- 10.—Number of days on which Rain fell, from Col. 25, = 25 . Greatest fall of Rain in one day, on 2^{nd} , from Col. 25, = $.552$. The sum of the numbers in Col. 25, or the fall of Rain in the month, on, or within a few inches of the surface of the soil = 2.671 . The sum of the numbers in Col. 26, or the fall of Rain in the month, at 120 feet above the ground = 2.400 .

Summary of the Wind.								
Number of Days								
N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm
1	2	3	4	1	2	3	18	-
-	4	1	6	1	5	2	14	-

The Mean of the numbers in Col. 7 will give the average velocity of the wind, or its horizontal movement in miles, in the 18 hours ending at 9 a.m. = 165.6 Miles.

The Mean of the numbers in Col. 16 will give the horizontal movement in the 6 hours ending at 3 p.m. = 51.7 Miles.

These sums will be the average daily velocity for the Month = 217.1 Miles.

Gales occurred on the $3, 4, 5$.

From the Mean of the numbers in columns 3 and 4, and those in 12 and 13, the following hygrometrical results are to be calculated by Glaisher's Hygrometrical Tables, Third Edition.

	At 9 a.m.	At 3 p.m.
The Temperature of the Dew-point	49.9	50.6
The Elastic Force of Vapour	$.362$	$.370$
The Weight of Vapour in a Cubic Foot of Air ..	14.1	14.1
The additional Weight of Vapour required to saturate a Cubic Foot of Air	1.0	1.3
The degree of Humidity (complete saturation = 100)	81.8	76
The average Weight of a Cubic Foot of Air	524.0	521.2

Barometer No. 2 made by *Vergo's Standard*; inner diameter of tube $.460$ inch

Compared with Standard at *Greenwich*

Comparison made by *J. Glaisher & Co.*

Correction for Index error

Correction for Capillarity

Total Correction for Index error and Capillarity

THERMOMETERS—

Dry Bulb, No. made by Index error

Wet „ No. „ „ „ „

SELF-REGISTERING—

Maximum, No. „ „ „ „

Minimum, No. „ „ „ „

Maximum, No. „ „ „ „

Minimum, No. „ „ „ „

NOTE.—When the Index error is +, it must be deducted; when —, added, to the monthly means of the observations.

CONSTRUCTION OF RAIN GAUGE—

The Observations have been taken by

and have been verified by me on the following days.

GENERAL PRECAUTIONS AND RECOMMENDATIONS.

- 1st.—To preserve unimpaired the continuity of observations is of great importance; and all changes in the adjustment of instruments, in their position, mode of reading, or registering, should be carefully avoided, as much as possible.
- 2nd.—It is desirable that the observations be made by one person; and where this is not practicable, that the deputy to whom they are confided previously assure himself that his method of reading is identical with that of the principal observer; and both should satisfy themselves, by frequent examination of their accuracy, that they read alike.
- 3rd.—As far as possible, registers to be perfect, but if, from any cause, observations be lost, no attempt should be made to fill the blank so caused.
- 4th.—Observations to be made at stated and regular times.
- 5th.—Before taking the means of the numbers in each month, the observer is recommended to look down each column, to see that no evident error of entry has been made (an inch in the reading of the barometer is a common error); of thermometric readings, to see that the maximum and minimum readings have not been interchanged; and, before dividing the sums of the numbers, to count, in each column, the days on which observations have been entered, so as to exclude error in the division, and to use throughout decimal arithmetic.

Meteorological Observations taken at

Edinburgh Castle
during the month of *August* 18*66*

Meteorological Observations taken at

Edinburgh Castle, during the Month of September, 1886; Latitude 55° 57' N; Longitude 3° 11' W; Height above the Sea 1602 Feet.

Day of Week	Day of Month	At 9h. A.M., Local Time										At 3h. P.M., Local Time										At 9h. A.M., Local Time										Rain fallen in previous 24 hours		GENERAL REMARKS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
		Reading of				Wind		Amount of Cloud	Ozone Scale	Reading of				Wind		Amount of Cloud	Ozone Scale	Reading of Self-registering Thermometers *					Rain fallen in previous 24 hours																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
		Barometer	Attached Therm.	Dry Bulb Therm.	Wet Bulb Therm.	By estimation				Barometer	Attached Therm.	Dry Bulb Therm.	Wet Bulb Therm.	By estimation				By Robinson's Anemometer	Diff. or Range of Temp.	Mean of Max. and Min. or approximate mean Temperature	Max. in Sun's Rays	Min. on Grass	On the Ground in.	10ft. above Ground in.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
						Direction	Force 0-12 Miles							Direction	Force 0-12 Miles	Direction									Force 0-12 Miles																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
		in.	o	o	o	Direction	Force 0-12 Miles	0-10	Dr. Moist Scale	in.	o	o	o	Direction	Force 0-12 Miles	0-10	Dr. Moist Scale	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	

* The number of each thermometer must be inserted at the head of the column containing the observations made with it.

1. The difference between the highest number in Columns 1 and 10 (69.78 on the 20°) and the lowest number in the same Columns (44.4 on the 14°) is 25.38 showing the approximate range of Atmospheric Pressure in the Month.
2. The Mean of the numbers in Columns 1 and 10, shows the approximate Mean Pressure of the Atmosphere for the Month = 59.669
3. Highest Reading in Column 19 = 66.4 on the 10° Lowest Reading in Column 20 = 47.0 on the 22° Difference = 19.4 being the range of Temperature in the Month.
4. The Difference between the Means of the numbers in Columns 19 and 20 should be the same as the Mean of the numbers in Column 21, and shows the Mean daily range = 18.9
5. The Mean of the numbers in Columns 19 and 20 should be the same as the Mean of the numbers in Column 22, and gives the approximate Mean Temperature of the Air for the Month = 57.9
6. The highest number in Column 21 (55.0 on the 14°) and the lowest number in the same Column (39 on the 22°) show the greatest and least daily range of Temperature during the Month.
7. The highest number in Column 22 (57.6 on the 11°), and the lowest number in the same Column (47.7 on the 22°) show the highest and lowest approximate mean daily Temperature of the Air for the Month.
8. The mean of the numbers in Columns 8 and 17 = 7.8 give the Mean amount of Cloud for the Month.
9. The Mean of the numbers in Columns 9 and 18 = 9 give the Mean amount of Ozone for the Month.
- 10.—Number of days on which Rain fell, from Col. 25, = 21 . Greatest fall of Rain in one day, on 29 , from Col. 25, = 1.475 . The sum of the numbers in Col. 25, or the fall of Rain in the month, on, or within a few inches of the surface of the soil = 34.54 . The sum of the numbers in Col. 26, or the fall of Rain in the month, at 20 feet above the ground = 3.160

Summary of the Wind.									
Number of Days									
N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm	
1			2	1	18	3	3	4	
1	3		3	3	14	2	3	1	

The Mean of the numbers in Col. 7 will give the average velocity of the wind, or its horizontal movement in miles, in the 18 hours ending at 9 a.m. = 82.0 Miles.

The Mean of the numbers in Col. 16 will give the horizontal movement in the 6 hours ending at 3 p.m. = 41.9 Miles.

These sums will be the average daily velocity for the Month = 195.9 Miles.

Gales occurred on the 17.20 21.25

From the Mean of the numbers in columns 3 and 4, and those in 12 and 13, the following hygrometrical results are to be calculated by Glaisher's Hygrometrical Tables, Third Edition.

	At 9 a.m.	At 3 p.m.
The Temperature of the Dew-point	47.9	48.5
The Elastic Force of Vapour	32.2	34.2
The Weight of Vapour in a Cubic Foot of Air ..	5.7	3.8
The additional Weight of Vapour required to saturate a Cubic Foot of Air	$.9$	1.2
The degree of Humidity (complete saturation = 100)	80.6	75.2
The average Weight of a Cubic Foot of Air	524.1	521.2

Barometer No. made by ; inner diameter of tube inch

Compared with Standard at

Comparison made by

Correction for Index error

Correction for Capillarity

Total Correction for Index error and Capillarity.....

THERMOMETERS—

Dry Bulb, No. made by Index error

Wet „ No. „ „ „

SELF-REGISTERING—

Maximum, No. „ „ „

Minimum, No. „ „ „

Maximum, No. „ „ „

Minimum, No. „ „ „

NOTE.—When the Index error is +, it must be deducted; when —, added, to the monthly means of the observations.

CONSTRUCTION OF RAIN GAUGE—

The Observations have been taken by

and have been verified by me on the following days.

GENERAL PRECAUTIONS AND RECOMMENDATIONS.

- 1st.—To preserve unimpaired the continuity of observations is of great importance; and all changes in the adjustment of instruments, in their position, mode of reading, or registering, should be carefully avoided, as much as possible.
- 2nd.—It is desirable that the observations be made by one person; and where this is not practicable, that the deputy to whom they are confided previously assure himself that his method of reading is identical with that of the principal observer; and both should satisfy themselves, by frequent examination of their accuracy, that they read alike.
- 3rd.—As far as possible, registers to be perfect, but if, from any cause, observations be lost, no attempt should be made to fill the blank so caused.
- 4th.—Observations to be made at stated and regular times.
- 5th.—Before taking the means of the numbers in each month, the observer is recommended to look down each column, to see that no evident error of entry has been made (an inch in the reading of the barometer is a common error); of thermometric readings, to see that the maximum and minimum readings have not been interchanged; and, before dividing the sums of the numbers, to count, in each column, the days on which observations have been entered, so as to exclude error in the division, and to use throughout decimal arithmetic.

Metereological Observations taken at

Edinburgh Castle
during the month of September 1886

Meteorological Observations taken at

Columbus, Ohio, during the Month of October, 1866; Latitude 39° 57' N; Longitude 82° 54' W; Height above the Sea 400 feet.

Day of Week	Day of Month	At 9h. A.M., Local Time										At 3h. P.M., Local Time										At 9h. A.M., Local Time										Rain fallen in previous 24 hours		GENERAL REMARKS	
		Reading of				Wind		Amount	Ozone Scale	of Cloud	Dr. Moffat	Reading of				Wind		Amount	Ozone Scale	of Cloud	Dr. Moffat	Reading of Self-registering Thermometers *													
		Barometer	Attached Therm.	Dry Bulb Therm.	Wet Bulb Therm.	By estimation						By Robinson's Anemometer.	Direction	Force 0-12	Miles	Barometer	Attached Therm.					Dry Bulb Therm.	Wet Bulb Therm.	By estimation		By Robinson's Anemometer	Direction	Force 0-12	Miles	Max. in Air	Min. in Air	Diff. or Range of Temp.	Mean of Max. and Min. or approximate mean Temperature.		Max. in Sun's Rays	Min. on Grass
						0-10	Dr. Moffat											0-10						Dr. Moffat	Max. in Air										
		in.	o	o	o	Direction	Force 0-12	Miles	0-10	Dr. Moffat	in.	o	o	o	Direction	Force 0-12	Miles	0-10	Dr. Moffat	Max. in Air	Min. in Air	Diff. or Range of Temp.	Mean of Max. and Min. or approximate mean Temperature.	Max. in Sun's Rays	Min. on Grass	On the Ground in.	ft. above Ground in.								
M	1	29.876	54	50.0	50.0	SE	2		10		29.834	55	54.5	52.8	SE	1		10		58.0	44.0	14.0	49.5	41.0	0.30	0.20			Dull, hazy 3 P.M. Sun misty						
M	2	29.820	54	50.0	49.5	SE	1		10		29.760	55	53.5	50.5	SE	1		10		54.0	48.6	7.2	50.4	46.0	0.50	0.20			3°						
M	3	29.778	54	52.0	52.0	SE	1		10		29.740	55	53.5	53.5	SE	1		10		56.0	47.0	9.0	51.5	47.0	0.60	0.50			3°						
M	4	29.790	54	52.5	52.5	SE	1		10		29.818	56	52.0	51.8	SE	1		10		54.0	48.5	5.5	51.2	49.0	0.30	0.30			3°						
M	5	29.786	55	52.5	51.0	SE	1		10		30.038	56	52.0	51.0	SE	1		10		55.0	48.0	7.0	51.5	48.0	0.20	0.20			3°						
M	6	30.150	55	51.2	49.5	SE	1		10		30.134	57	55.0	52.0	SE	2		10		57.0	48.0	9.0	52.5	48.0	0.00	0.00			3°						
M	7	30.086	55	53.8	50.5	SE	1		10		30.104	57	56.5	52.5	SE	2		10		58.0	47.0	11.0	52.7	42.0	0.00	0.00			Agreeable						
M	8	30.062	54	54.0	51.0	SE	2		0		30.032	57	56.0	52.0	SE	2		0		59.5	45.5	14.0	52.5	41.5	0.00	0.00			Beautiful						
M	9	29.982	52	48.0	46.5	NE	1		10		29.918	52	47.5	44.0	NE	1		10		52.0	40.0	12.0	46.0	40.0	0.00	0.00			Dull						
M	10	29.872	52	47.0	45.5	NE	1		10		29.838	54	48.5	46.0	NE	1		10		53.5	44.5	9.0	49.0	46.0	0.00	0.00			Agreeable						
M	11	29.806	52	47.5	45.0	NE	1		10		29.784	54	50.0	49.0	SE	1		10		53.0	42.0	11.0	47.5	37.0	0.00	0.00			Dull						
M	12	29.652	52	49.0	47.0	SE	1		10		29.870	54	51.0	47.5	SE	2		10		53.0	48.0	5.0	49.0	44.0	0.00	0.00			Agreeable						
M	13	29.450	52	49.5	47.5	NE	2		10		29.486	52	48.0	46.0	NE	2		10		51.0	44.5	6.5	47.7	42.0	0.00	0.00			Dull						
M	14	29.604	50	41.5	38.5	NE	1		0		29.680	52	46.0	41.5	NE	1		6		48.0	34.5	13.5	41.2	32.0	0.00	0.00			Beautiful						
M	15	29.652	48	47.0	44.5	NE	3		0		29.650	47	48.0	45.0	NE	3		5		57.0	36.0	21.0	43.5	34.0	0.00	0.00			Beautiful						
M	16	29.802	48	45.0	43.0	NE	1		0		29.850	47	47.0	43.5	NE	2		5		52.0	37.5	14.5	44.7	33.0	0.00	0.00			3°						
M	17	29.612	48	47.0	42.0	SE	1		0		29.682	52	53.0	47.0	SE	2		2		54.0	39.0	15.0	46.5	36.5	0.00	0.00			3°						
M	18	29.518	50	50.0	47.5	SE	3		10		29.452	54	55.0	50.0	SE	3		10		58.0	36.0	22.0	47.0	36.0	0.00	0.00			Dull						
M	19	29.500	54	57.0	55.0	SE	2		0		29.506	54	60.5	57.0	SE	3		0		62.5	41.0	21.5	51.7	41.6	0.00	0.00			Beautiful						
M	20	29.754	55	56.5	52.5	SE	2		0		29.768	59	59.0	54.0	SE	2		4		61.0	49.0	12.0	55.0	48.0	0.00	0.00			Agreeable						
M	21	29.596	56	56.5	54.0	SE	2		0		29.500	59	59.5	55.5	SE	2		6		62.0	50.0	12.0	56.0	49.0	0.00	0.00			Agreeable						
M	22	29.462	56	52.0	50.5	SE	2		10		29.522	58	53.5	50.5	SE	1		20		62.0	50.0	12.0	56.0	49.0	0.00	0.00			Dull						
M	23	29.500	54	50.0	47.5	SE	0		0		29.550	58	52.8	49.5	SE	0		0		57.5	41.5	16.0	49.5	38.0	0.00	0.00			Agreeable						
M	24	29.230	54	49.5	47.5	SE	3		10		29.228	56	50.0	46.5	SE	0		10		57.0	41.0	16.0	49.0	40.0	0.00	0.00			Dull						
M	25	29.338	48	41.5	40.0	NE	1		0		29.350	53	40.5	38.5	NE	1		6		46.5	35.5	11.0	41.0	34.0	0.00	0.00			Agreeable						
M	26	29.574	46	40.5	38.5	SE	1		4		29.510	52	38.0	44.5	SE	0		0		52.0	32.0	20.0	42.0	31.0	0.00	0.00			Beautiful						
M	27	29.462	50	58.2	49.5	SE	2		10		29.416	54	51.5	49.5	SE	2		0		56.0	37.5	18.5	46.7	34.0	0.00	0.00			Dull						
M	28	29.562	50	47.0	43.0	NE	2		0		29.608	50	48.5	43.0	NE	4		2		48.5	39.5	9.0	44.0	38.0	0.00	0.00			Beautiful						
M	29	29.580	48	47.8	45.0	SE	6		0		29.494	52	49.0	46.5	SE	0		10		53.0	34.0	19.0	46.0	36.0	0.00	0.00			Dull						
M	30	29.040	52	51.5	50.5	NE	2		9		29.550	54	46.5	43.0	NE	2		6		54.5	40.5	14.0	47.5	41.0	0.00	0.00			3°						
M	31	29.470	50	44.0	42.0	SE	2		10		29.486	52	48.0	43.5	SE	2		10		52.0	37.0	15.0	45.5	34.5	0.00	0.00			Dull						
Sums		919.716	1612	1531.0	1467.3		50		229	23	919.568	1686	1557.1	1490.3		66		236	1	1700.5	1700.5	1592.2	1504.0		1286.5	1325	1150								
Means		29.668	52	49.4	47.4		1.6		7.2	7	29.663	54	52.2	48.3		2.1		2.6		54.8	42.2	12.6	48.5		40.5	25	26								
Index errors & capillarity		+ .025									- .025																								
Correction for Temp.		-.062									-.067																								
Means Corrected		29.581									29.671																								
Number of Columns		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24										

Thunder-storms occurred on

Thunder was heard, but Lightning was not seen on

Lightning was seen, but Thunder was not heard on

Solar Halos were seen on

Lunar Halos were seen on

Aurora Borealis was seen on

Remarkable Rain fell on

Snow fell on

Hail fell on

Fog prevailed on

* The number of each thermometer must be inserted at the head of the column containing the observations made with it.

1. The difference between the highest number in Columns 1 and 10 (on the 6th) and the lowest number in the same Columns (on the 20th) is 1.118 showing the approximate range of Atmospheric Pressure in the Month.
2. The Mean of the numbers in Columns 1 and 10, shows the approximate Mean Pressure of the Atmosphere for the Month = 29.576
3. Highest Reading in Column 19 = 62.5 on the 18th. Lowest Reading in Column 20 = 32.0 on the 16th. Difference = 30.5 being the range of Temperature in the Month.
4. The Difference between the Means of the numbers in Columns 19 and 20 should be the same as the Mean of the numbers in Column 21, and shows the Mean daily range = 12.6
5. The Mean of the numbers in Columns 19 and 20 should be the same as the Mean of the numbers in Column 22, and gives the approximate Mean Temperature of the Air for the Month = 48.5
6. The highest number in Column 21 (22.0 on the 18th) and the lowest number in the same Column (5.5 on the 16th) show the greatest and least daily range of Temperature during the Month.
7. The highest number in Column 22 (66.2 on the 22nd), and the lowest number in the same Column (41.0 on the 25th) show the highest and lowest approximate mean daily Temperature of the Air for the Month.
8. The mean of the numbers in Columns 8 and 17 = 7.4 give the Mean amount of Cloud for the Month.
9. The Mean of the numbers in Columns 9 and 18 = 7.7 give the Mean amount of Ozone for the Month.
- 10.—Number of days on which Rain fell, from Col. 25, = 17. Greatest fall of Rain in one day, on 30th, from Col. 25, = .26. The sum of the numbers in Col. 25, or the fall of Rain in the month, on, or within a few inches of the surface of the soil = 32.5. The sum of the numbers in Col. 26, or the fall of Rain in the month, at 100 feet above the ground = 1.150

Summary of the Wind.									
Number of Days									
N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm	
4	1	6	1	1	1	4	2	2	2
6	2	7	1	1	1	3	3	—	—

The Mean of the numbers in Col. 7 will give the average velocity of the wind, or its horizontal movement in miles, in the 18 hours ending at 9 a.m. = 2 Miles.
The Mean of the numbers in Col. 16 will give the horizontal movement in the 6 hours ending at 3 p.m. = 2 Miles.
These sums will be the average daily velocity for the Month = 2 Miles.
Gales occurred on the

From the Mean of the numbers in columns 3 and 4, and those in 12 and 13, the following hygrometrical results are to be calculated by Glaisher's Hygrometrical Tables, Third Edition.

	At 9 a.m.	At 3 p.m.
The Temperature of the Dew-point	45.2	45.4
The Elastic Force of Vapour	30.2	30.4
The Weight of Vapour in a Cubic Foot of Air ..	1.4	1.4
The additional Weight of Vapour required to saturate a Cubic Foot of Air .....	.6	.6
The degree of Humidity (complete saturation = 100)	16.4	16.6
The average Weight of a Cubic Foot of Air	557.9	558.8

Barometer No. made by ; inner diameter of tube inch

Compared with Standard at

Comparison made by

Correction for Index error + 0.018

Correction for Capillarity - 0.007

Total Correction for Index error and Capillarity..... + 0.025

THERMOMETERS—

Dry Bulb, No. made by

Index error

Wet „ No. „ „

„ „

SELF-REGISTERING—

Maximum, No. „ „

„ „

Minimum, No. „ „

„ „

Maximum, No. „ „

„ „

Minimum, No. „ „

„ „

NOTE.—When the Index error is +, it must be deducted; when —, added, to the monthly means of the observations.

CONSTRUCTION OF RAIN GAUGE—

The Observations have been taken by

and have been verified by me on the following days.

GENERAL PRECAUTIONS AND RECOMMENDATIONS.

- 1st.—To preserve unimpaired the continuity of observations is of great importance; and all changes in the adjustment of instruments, in their position, mode of reading, or registering, should be carefully avoided, as much as possible.
- 2nd.—It is desirable that the observations be made by one person; and where this is not practicable, that the deputy to whom they are confided previously assure himself that his method of reading is identical with that of the principal observer; and both should satisfy themselves, by frequent examination of their accuracy, that they read alike.
- 3rd.—As far as possible, registers to be perfect, but if, from any cause, observations be lost, no attempt should be made to fill the blank so caused.
- 4th.—Observations to be made at stated and regular times.
- 5th.—Before taking the means of the numbers in each month, the observer is recommended to look down each column, to see that no evident error of entry has been made (an inch in the reading of the barometer is a common error); of thermometric readings, to see that the maximum and minimum readings have not been interchanged; and, before dividing the sums of the numbers, to count, in each column, the days on which observations have been entered, so as to exclude error in the division, and to use throughout decimal arithmetic.

Metecological Observations taken at

Edinburgh Castle

during the month of *October* 18*66*

Meteorological Observations taken at

Edinburgh Castle,

during the Month of

November, 1864,

Latitude 55° 57' N;

Longitude 3° 11' W;

Height above the Sea 402 Feet

Day of Week	Day of Month	At 9h. A.M., Local Time										At 3h. P.M., Local Time										At 9h. A.M., Local Time										Rain fallen in previous 24 hours		GENERAL REMARKS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
		Reading of				Wind		Amount	Ozone Scale	Of Cloud	Dr. Moffat	Reading of				Wind		Amount	Ozone Scale	Of Cloud	Dr. Moffat	Reading of Self-registering Thermometers *				Max. in Sun's Rays	Min. on Grass																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
		Barometer	Attached Therm.	Dry Bulb Therm.	Wet Bulb Therm.	By estimation						Barometer	Attached Therm.	Dry Bulb Therm.	Wet Bulb Therm.	By estimation						Barometer	Min. in Air	Diff. or Range of Temp.	Mean of Max. and Min. or approx. mean Temperature.			Max. in Air	Min. in Grass																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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* The number of each thermometer must be inserted at the head of the column containing the observations made with it.

1. The difference between the highest number in Columns 1 and 10 (49.16 on the 28°) and the lowest number in the same Columns (28.17 on the 25°) is 20.99 showing the approximate range of Atmospheric Pressure in the Month.
2. The Mean of the numbers in Columns 1 and 10, shows the approximate Mean Pressure of the Atmosphere for the Month = 29.287
3. Highest Reading in Column 19 = 56.0 on the 1° . Lowest Reading in Column 20 = 28.0 on the 17° . Difference = 28.0 being the range of Temperature in the Month.
4. The Difference between the Means of the numbers in Columns 19 and 20 should be the same as the Mean of the numbers in Column 21, and shows the Mean daily range = 14.0
5. The Mean of the numbers in Columns 19 and 20 should be the same as the Mean of the numbers in Column 22, and gives the approximate Mean Temperature of the Air for the Month = 41.4
6. The highest number in Column 21 (49.5 on the 23°) and the lowest number in the same Column (28.0 on the 18°) show the greatest and least daily range of Temperature during the Month.
7. The highest number in Column 22 (48.5 on the 23°), and the lowest number in the same Column (28.7 on the 18°) show the highest and lowest approximate mean daily Temperature of the Air for the Month.
8. The mean of the numbers in Columns 8 and 17 = 6.6 give the Mean amount of Cloud for the Month.
9. The Mean of the numbers in Columns 9 and 18 = 9 give the Mean amount of Ozone for the Month.
10. Number of days on which Rain fell, from Col. 25, = 18 . Greatest fall of Rain in one day, on 16° , from Col. 25, = 980 . The sum of the numbers in Col. 25, or the fall of Rain in the month, on, or within a few inches of the surface of the soil = 2.890 . The sum of the numbers in Col. 26, or the fall of Rain in the month, at 720 feet above the ground = 2.560

Summary of the Wind.									
Number of Days									
N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm	
1	2	3	4	5	6	7	8	9	10

The Mean of the numbers in Col. 7 will give the average velocity of the wind, or its horizontal movement in miles, in the 18 hours ending at 9 a.m. Miles.
The Mean of the numbers in Col. 16 will give the horizontal movement in the 6 hours ending at 3 p.m. Miles.
These sums will be the average daily velocity for the Month = Miles.
Gales occurred on the $5, 6, 7, 8$.

From the Mean of the numbers in columns 3 and 4, and those in 12 and 13, the following hygrometrical results are to be calculated by Glaisher's Hygrometrical Tables, Third Edition.

	At 9 a.m.	At 3 p.m.
The Temperature of the Dew-point	38.4	38.6
The Elastic Force of Vapour	2.83	2.84
The Weight of Vapour in a Cubic Foot of Air ..	2.6	2.7
The additional Weight of Vapour required to saturate a Cubic Foot of Air	$.5$	$.5$
The degree of Humidity (complete saturation = 100)	84	82.4
The average Weight of a Cubic Foot of Air	540.1	539.2

Barometer No. made by ; inner diameter of tube inch

Compared with Standard at

Comparison made by

Correction for Index error

Correction for Capillarity

Total Correction for Index error and Capillarity

THERMOMETERS—

Dry Bulb, No. made by

Wet „ No. „

SELF-REGISTERING—

Maximum, No. „

Minimum, No. „

Maximum, No. „

Minimum, No. „

Index error

„ „

„ „

„ „

„ „

„ „

NOTE.—When the Index error is +, it must be deducted; when —, added, to the monthly means of the observations.

CONSTRUCTION OF RAIN GAUGE—

The Observations have been taken by

and have been verified by me on the following days.

GENERAL PRECAUTIONS AND RECOMMENDATIONS.

- 1st.—To preserve unimpaired the continuity of observations is of great importance; and all changes in the adjustment of instruments, in their position, mode of reading, or registering, should be carefully avoided, as much as possible.
- 2nd.—It is desirable that the observations be made by one person; and where this is not practicable, that the deputy to whom they are confided previously assure himself that his method of reading is identical with that of the principal observer; and both should satisfy themselves, by frequent examination of their accuracy, that they read alike.
- 3rd.—As far as possible, registers to be perfect, but if, from any cause, observations be lost, no attempt should be made to fill the blank so caused.
- 4th.—Observations to be made at stated and regular times.
- 5th.—Before taking the means of the numbers in each month, the observer is recommended to look down each column, to see that no evident error of entry has been made (an inch in the reading of the barometer is a common error); of thermometric readings, to see that the maximum and minimum readings have not been interchanged; and, before dividing the sums of the numbers, to count, in each column, the days on which observations have been entered, so as to exclude error in the division, and to use throughout decimal arithmetic.

Meteorological Observations taken at

Edinburgh Castle

during the month of *November* 18*66*

Day of Week	Day of Month	At 9h. A.M., Local Time										At 3h. P.M., Local Time										At 9h. A.M., Local Time										GENERAL REMARKS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
		Reading of				Wind		Amount	Ozone Scale	Dr. Moffat	of Cloud	Reading of				Wind		Amount	Ozone Scale	Dr. Moffat	of Cloud	Reading of Self-registering Thermometers *				Rain fallen in previous																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		Barometer	Attached Therm.	Dry Bulb Therm.	Wet Bulb Therm.	By estimation						Barometer	Attached Therm.	Dry Bulb Therm.	Wet Bulb Therm.	By estimation						By Robinson's Anemometer	of Cloud	Max. in Air	Min. in Air	Diff. or Range of Temp.	Mean of Max. and Min. or approximate mean Temperature.	Max. in Sun's Rays	Min. on Grass	24 hours																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
						Direction	Force 0-12 Miles									Direction	Force 0-12 Miles													On the Ground in.	24h. above Ground in.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
		in.	o	o	o			0-10	Dr. Moffat		in.	o	o	o			0-10	Dr. Moffat		o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o</

* The number of each thermometer must be inserted at the head of the column containing the observations made with it.

Signed

Thunder-storms occurred on
Thunder was heard, but Lightning was not seen on
Lightning was seen, but Thunder was not heard on
Solar Halos were seen on
Lunar Halos were seen on
Aurora Borealis was seen on
Remarkable Rain fell on
Snow fell on
Hail fell on
Fog prevailed on

1. The difference between the highest number in Columns 1 and 10 (29.99 on the 22) and the lowest number in the same Columns (28.41 on the 7) is 1.58 showing the approximate range of Atmospheric Pressure in the Month.
2. The Mean of the numbers in Columns 1 and 10, shows the approximate Mean Pressure of the Atmosphere for the Month = 29.203
3. Highest Reading in Column 19 = 57.0 on the 20 Lowest Reading in Column 20 = 27.0 on the 1 Difference = 30.0 being the range of Temperature in the Month.
4. The Difference between the Means of the numbers in Columns 19 and 20 should be the same as the Mean of the numbers in Column 21, and shows the Mean daily range = 14.7
5. The Mean of the numbers in Columns 19 and 20 should be the same as the Mean of the numbers in Column 22, and gives the approximate Mean Temperature of the Air for the Month = 41.0
6. The highest number in Column 21 (23.5 on the 20) and the lowest number in the same Column (2.0 on the 5) show the greatest and least daily range of Temperature during the Month.
7. The highest number in Column 22 (69.2 on the 18) and the lowest number in the same Column (31.0 on the 31) show the highest and lowest approximate mean daily Temperature of the Air for the Month.
8. The mean of the numbers in Columns 8 and 17 = 7.5 give the Mean amount of Cloud for the Month.
9. The Mean of the numbers in Columns 9 and 18 = 7.5 give the Mean amount of Ozone for the Month.
- 10.—Number of days on which Rain fell, from Col. 25, = 21 . Greatest fall of Rain in one day, on 27 , from Col. 25, = 89.0 . The sum of the numbers in Col. 25, or the fall of Rain in the month, on, or within a few inches of the surface of the soil = 2.2 in. The sum of the numbers in Col. 26, or the fall of Rain in the month, at 12 feet above the ground = 2.07 .

Summary of the Wind.								
Number of Days								
N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm
1	4	1	3		10		11	1
1	4	1	4		9	1	11	1

The Mean of the numbers in Col. 7 will give the average velocity of the wind, or its horizontal movement in miles, in the 18 hours ending at 9 a.m. = 356.2 Miles.

The Mean of the numbers in Col. 16 will give the horizontal movement in the 6 hours ending at 3 p.m. = 372 Miles.

These sums will be the average daily velocity for the Month = 314.4 Miles.

Gales occurred on the

From the Mean of the numbers in columns 3 and 4, and those in 12 and 13, the following hygrometrical results are to be calculated by Glaisher's Hygrometrical Tables, Third Edition.

	At 9 a.m.	At 3 p.m.
The Temperature of the Dew-point	36.9	37.7
The Elastic Force of Vapour	1.19	1.27
The Weight of Vapour in a Cubic Foot of Air ..	2.5	2.6
The additional Weight of Vapour required to saturate a Cubic Foot of Air	$.5$	$.5$
The degree of Humidity (complete saturation = 100)	81.6	85
The average Weight of a Cubic Foot of Air	540.6	538.9

Barometer No. made by ; inner diameter of tube inch

Compared with Standard at

Comparison made by

Correction for Index error + 0.012

Correction for Capillarity - 0.007

Total Correction for Index error and Capillarity..... + 0.025

THERMOMETERS—

Dry Bulb, No. made by Index error

Wet „ No. „ „ „

SELF-REGISTERING—

Maximum, No. „ „ „

Minimum, No. „ „ „

Maximum, No. „ „ „

Minimum, No. „ „ „

NOTE.—When the Index error is +, it must be deducted; when —, added, to the monthly means of the observations.

CONSTRUCTION OF RAIN GAUGE—

The Observations have been taken by

and have been verified by me on the following days.

GENERAL PRECAUTIONS AND RECOMMENDATIONS.

- 1st.—To preserve unimpaired the continuity of observations is of great importance; and all changes in the adjustment of instruments, in their position, mode of reading, or registering, should be carefully avoided, as much as possible.
- 2nd.—It is desirable that the observations be made by one person; and where this is not practicable, that the deputy to whom they are confided previously assure himself that his method of reading is identical with that of the principal observer; and both should satisfy themselves, by frequent examination of their accuracy, that they read alike.
- 3rd.—As far as possible, registers to be perfect, but if, from any cause, observations be lost, no attempt should be made to fill the blank so caused.
- 4th.—Observations to be made at stated and regular times.
- 5th.—Before taking the means of the numbers in each month, the observer is recommended to look down each column, to see that no evident error of entry has been made (an inch in the reading of the barometer is a common error); of thermometric readings, to see that the maximum and minimum readings have not been interchanged; and, before dividing the sums of the numbers, to count, in each column, the days on which observations have been entered, so as to exclude error in the division, and to use throughout decimal arithmetic.

Meteorological Observations taken at

Edinburgh Castle

during the month of December 1866.