

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at 7 Morton St. Leith, County of Edinburgh, in Lat. 55° 54' N, Long. 3° 10' W. Distance from Sea half mile.
Height of Cistern of the Barometer above Mean Sea-level 70 feet, above Ground 37 feet. During the MONTH of January 1884.
The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER. No. —				WIND.				RAIN.		CLOUDS.				THERMOMETERS under Ground.				SEA.	OZONE.	GENERAL REMARKS. As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc. Mention the hour at which Storms, including Thunder and Lightning, began and ended.	Days of Month.
		8 h. A.M.		8 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.		8 h. A.M.		8 h. P.M.		No. of hours in which it fell.	Amount in inches.	9 A.M.		P.M.		9 h. A.M.							
		Barometer.	At- tached Ther- mometer	Barometer.	At- tached Ther- mometer	Max. No.	Min. No.	Max. in Sun's rays	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	Direction.	Force.	Direction.	Force.			Velocity (0—10), and Direction.	Amount, (0—10), and Species.	Velocity (0—10), and Direction.	Amount, (0—10), and Species.	No. 1. 3 inches.	No. 2. 12 inches.	No. 3. 23 inches.					
		* No. 733.	inches.	°	inches.	°	°	°	°	°	°	°	°	°	°	°	°			°	°	°	°	°	°	°	°				
1		30.454	49.0	30.267	49.0	39.4	36							S.E.	1.5	S.E.	1.5												1		
2		30.086	48.0	30.002	46.5	36	28.1							S.E.	0.5	W	0.5												2		
3		29.912	44.0	30.004	45.0	40	28.1							E	1.5	S.E.	1.5												3		
4		30.062	45.3	30.046	46.2	49.5	38							S.E.	2.0	S.E.	1.0												4		
5		29.761	47.7	29.406	50.3	50.8	30.9							S.E.	1.5	S.W.	3.5												5		
6		29.302	49.0	29.490	50.0	49.7	42.6							W.S.W.	4.0	W	3.5												6		
7		29.694	48.6	29.884	48.9	47.6	38.9							W	2.0	W.N.W.	1.5												7		
8		29.784	48.0	29.866	50.0	52.2	47.2							S.W.	1.5	W.S.W.	2.0												8		
9		29.754	52.0	29.954	52.0	54.1	43.4							S.W.	2.5	W	2.5												9		
10		29.916	51.3	29.870	51.2	48.7	35.2							W.S.W.	3.0	W.S.W.	3.0												10		
11		29.602	48.0	29.777	47.0	38.8	35.7							W	2.0	W.N.W.	2.0												11		
12		30.262	45.5	30.288	46.0	46.7	39.2							W.N.W.	1.5	W	2.0												12		
13		30.252	47.0	30.233	48.0	49.4	44							W	3.0	W	3.0												13		
14		30.129	48.9	30.340	50.1	51	46.1							W	2.0	W	2.0												14		
15		30.434	50.0	30.522	52.0	49.8	46							W	2.0	W	1.5												15		
16		30.510	52.0	30.512	51.5	48.4	43.2							W	1.5	W	2.0												16		
17		30.440	51.0	30.430	52.0	49.4	44.3							W	1.5	W	1.5												17		
18		30.388	52.0	30.324	52.0	50.7	45.8							W	1.5	W.S.W.	2.0												18		
19		30.278	52.5	30.240	53.0	51.0	46.2							W.S.W.	2.0	S.W.	3.5												19		
20		29.960	52.5	29.912	52.0	49	42							W.S.W.	4.0	W.S.W.	4.0												20		
21		30.108	50.0	29.908	50.5	52.5	43.6							W	3.0	W.S.W.	3.5												21		
22		29.694	51.0	29.512	50.5	46.4	39							W	3.0	W	1.5												22		
23		29.402	49.5	28.758	49.0	46.3	32.5							S.S.E.	1.0	W	3.5												23		
24		29.480	46.1	29.414	44.9	41.2	34.8							W.N.W.	2.0	W	3.5												24		
25		29.068	44.0	29.056	42.5	38	32							W.S.W.	2.0	W.S.W.	2.0												25		
26		28.890	41.5	29.536	44.0	41.1								S.W.	1.5	S	4.5												26		
27		28.184	41.0	28.554	39.5	41.1	27.8							W.S.W.	5.0	W.S.W.	4.5												27		
28		29.092	39.5	29.521	40.5	39.6	34.5							W	1.5	W	2.0												28		
29		29.498	41.0	29.314	44.5	40.8	35							S.E.	1.0	W	2.5												29		
30		29.258	44.5	29.520	44.5	41.6	34.5							W.S.W.	2.0	W	3.5												30		
31		29.592	44.3	29.364	44.7	41.8	39.3							W	1.5	E	0.5												31		
Sums.		923.246	147.47	922.024	148.78	188.6	25.9																								
Means.		29.782	47.6	29.743	48.0	46.1	38.5																								
† Total Corrections for Barometer Means.		+ .004		+ .004																											
† Corrections for Diurnal Range.																															
"Cor- rected Means."		29.786	47.6	29.747	48.0																										
No. 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	25	26	27	28	29	30

BAROMETER, "corrected Mean" at 8 A.M., minus the Correction†† for Temp. (Col. 2), = 29.786.....
Corrected Mean" of Barometer at 8 P.M., minus the Correction†† for Temp. (Col. 4), = 29.747.....
Mean at Station, corrected, and at 32°..... = 29.715
Correction for height, 70 feet above Mean Sea-level,..... = .077
Mean, reduced to 32°, and Sea-level,..... = 29.792
Highest Reading, corrected for Capillarity, on the 15 th,..... = 30.526
Lowest Do. Do. do on the 26 th,..... = 27.540
Difference, or Monthly Range,..... = 2.986

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the th,..... = 54.1
Lowest in Month, corrected for Index errors, on the th,..... = 27.8
Difference, or Monthly Range,..... = 26.3
"Corrected Mean" of all the Highest, (Col. 5),..... = 46.1
"Corrected Mean" of all the Lowest, (Col. 6),..... = 38.5
Difference, or Mean Daily Range,..... = 7.6
** Calculated Mean Temperature of Month,..... = 42.3
S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the th,..... =
"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun,..... =
Lowest at Night, Black Bulb, (corrected for Index errors), on the th,..... =
"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass,..... =
Difference of above Means or Range ("exposed"),..... =

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11),..... =
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12),..... =
†† Computed Temperature of Dew-Point,..... =
†† Do. Elastic Force of Vapour,..... =
†† Do. Weight of Vapour in a Cubic Foot of Air, ... =
†† Relative Humidity, (Saturation = 100),..... =
RAIN fell on 19 Days; Amount in Inches,..... = 3.62
WIND. SUMMARY.
Direction. N N.E. E S.E. S S.W. W N.W. Mean or Variable. Mean Force. Mean Velocity in miles per day.
A.M. 1 4 2 3 21 2.08
P.M. 2 2 1 2 23 1 2.40
Mean. 0 0 1 3 2 2 22 1 0 2.26 = 5.11 26

* Each instrument tested at the Office in Edinburgh bears the stamp "S.M.S.," and a number to be entered in the Heading; or the Number and Initials of the Maker may be here given.
† Embracing corrections for capillarity. Scale correct.
†† Practically, though not absolutely a minus correction.
‡ These "Hygrometrical Deductions" are calculated from Glaisher's Hygrometrical Tables, Second Edition only.
§ While the Diurnal Range is unknown, the Arithmetical Mean of Cols. 5 and 6 will be entered as the "Calculated Mean Temperature."
|| Observations not taken under the conditions specified in the Directions on the other side, or noted at the Top of each column, must be marked as such by the observer, in each Schedule. See over.

* Standard Barometer on Fortin's principle, 0.50 inch tube, Adair's thermometer No 733. Verified at Kew December 1883. Correction including capillary action + .004 inch. Scale correct.
G.P. Range on the 5th. = 19.9
Observations made and Return verified by
(Signed) George Redpath
The Max and Min Temp and rainfall are by James Dolan

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *7 Morton Street, Leith*, County of *Edinburgh*, in Lat. *55° 59' N*, Long. *3° 10' W*, Distance from Sea *half* mile.
Height of Cistern of the Barometer above Mean Sea-level *70* feet, above Ground *37* feet. During the MONTH of *February* 188*4*.
The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER. No. —				WIND.				RAIN.		CLOUDS.				THERMOMETERS under Ground.			SEA.	OZONE.	GENERAL REMARKS. As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc. Mention the hour at which Storms, including Thunder and Lightning, began and ended.	Days of Month.													
		8 h. A.M.		8 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.		8 h. A.M.		8 h. P.M.		Readings of the H.Cup Anemometer. No. —	No. of hours in which it fell.	Amount in inches.	9 A.M.		P.M.		SUNSHINE. Hours.	9 h. A.M.					Temperature of Well at depth of feet. No.	Temperature at 1 fathom, and Density.	0—10.	9 A.M. 9 P.M.									
		Barometer.	Attached Thermometer.	Barometer.	Attached Thermometer.	Max. No.	Min. No.	Max. No.	Min. No.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	Direction.	Force.	Direction.	Force.				Velocity (0—10), and Direction.	Amount (0—10), and Species.	Velocity (0—10), and Direction.	Amount (0—10), and Species.		No. 8 inches.									No. 12 inches.	No. 22 inches.							
		inches.	°	inches.	°	°	°	°	°	°	°	°	°	°	°	°	°				°	°	°	°		°									°	°	°	°	°	°	°	°	°
		1	29.306	45.2	29.682	45.7	41	32.5																														Overcast, c.h.r.; egs. 3 to 6 p.m.	1				
2	30.120	43.7	30.224	42.0	37.5	31.8																										Fine; hazy p.m.	2										
3	29.991	42.5	29.992	42.5	40	45.5																										Dull and cloudy.	3										
4	30.078	48.6	30.054	50.0	57.8	47.5																										Mild, dull and cloudy.	4										
5	30.078	51.7	30.060	52.0	50.1	46.6																										Dull and cloudy; drizzle at times	5										
6	29.995	52.0	29.874	52.0	48.6	38.7																										Dull and cloudy.	6										
7	29.992	50.7	30.078	50.0	43.5	31.4																										Fine; sunny; h. night	7										
8	29.822	48.3	29.844	48.6	49	38																										h. morning and night	8										
9	29.092	50.0	28.784	51.0	53.8	35.5																										r. H. Bar. at 8 p.m. 28.807 sea level.	9										
10	28.878	48.7	28.968	47.0	41.8	36.3																										Sqs. r.	10										
11	29.196	44.6	29.427	44.7	49.7	31.7																										Fine; sunny at times.	11										
12	29.340	45.7	29.393	48.2	51.4	42																										Very squally	12										
13	29.586	49.0	29.852	51.0	52.3	42.2																										Squally; showers.	13										
14	29.914	51.0	30.248	51.0	49.1	35.7																										Sqs. and r. early a.m.; fine afterwards.	14										
15	30.222	50.0	30.264	49.0	49	35.8																										Cloudy and dull. Bar. 8 p.m. 30.290 sea level.	15										
16	30.241	47.8	30.088	47.0	41.2	36.5																										Fine; cloudy; li. sh.	16										
17	29.996	46.3	29.902	46.7	43	37.7																										Fine; cloudy.	17										
18	29.838	46.3	29.800	46.7	42.2	33.5																										Overcast; li. r. a.m.; cloudy p.m.	18										
19	29.720	45.0	29.586	45.8	45.9	32.3																										Very cloudy; li. sh. soft h. r.	19										
20	29.495	46.3	29.306	48.0	51	40.2																										Fine a.m.; variable, showers p.m.	20										
21	29.350	46.9	29.426	48.0	45.8	36.5																										Heavy egs. 2 till 5 a.m.; day sunny; showers.	21										
22	29.307	47.7	29.400	48.3	42.7	34.8																										Overcast, r. a.m.; then fine	22										
23	29.300	48.0	29.216	48.5	42.8	37.3																										Fine a.m.; cloudy; li. sh. p.m.	23										
24	29.490	47.8	29.656	48.0	46.5	37.1																										Fine; sunny.	24										
25	29.728	46.0	29.835	47.2	45.7	37.6																										Fine; sunny; sh. h. and shift 4 p.m.	25										
26	29.932	46.6	29.988	47.7	42.2	36.7																										Cloudy; fine	26										
27	30.002	47.4	30.036	48.0	41.8	35.7																										Fine; cloudy.	27										
28	30.060	47.2	29.974	46.3	37.6	28.0																										Cloudy; li. snow sh. p.m.	28										
29	29.934	44.3	29.964	45.0	36.4	31.8																										h. fr. fine; sunny.	29										
30																																					30						
31																																						31					
Sums.		862.003	137.46	862.621	138.89	164.0	102.9							7	9			4															NOTATION USED IN GENERAL REMARKS.										
Means.		29.728	47.4	29.742	47.9	45.7	37.0							1.78	1.63			13	4.19													a. denotes aurora. m. denotes meteor. ci. cirrus. m. m. cirro-cumulus. n. nimbus. ci-s. cirro-stratus. r. rain. cu. cumulus. h. r. heavy rain. cu-s. cumulo-stratus. c. h. r. continued heavy rain. d. dew. s. stratus. f. fog. sc. scud. fr. frost. s. sleet. h. fr. hoar-frost. s. snow. h. haze. sol. solar halo. h. d. heavy dew. sq. squall. hl. hail. sq. squall. l. lightning. t. thunder. li. cl. light clouds. t. s. thunder storm. li. sh. light showers. w. wind. lu. co. lunar corona. g. gale of wind. lu. lu. lunar halo. g. gale of wind.											
† Total Corrections for Instrumental Errors.		+ .004		+ .004																													TABLE FOR ESTIMATING FORCE OF WIND.										
‡ Corrections for Diurnal Range.																																		Estimated Force, 0—6. Common Designation. Estimated Force, 0—6. Common Designation. Estimated Force, 0—6. Common Designation.									
"Corrected Means."		29.728	47.4	29.742	47.9																												0	Calm	1.5	Light breeze	4	Blowing hard					
No. 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	25	26	27	28	29	30	0.5	Very light air	2	Fresh breeze	5	Blowing a gale						
																																1	Light air	3	Very fresh	6	Violent gale						

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction†† = *29.678*
for Temp. (Col. 2), = *29.728* - .050.)
Corrected Mean" of Barometer at 9 P.M., minus the Correction†† = *29.698*
for Temp. (Col. 4), = *29.742* - .044.)
Mean at Station, corrected, and at 32°, = *29.688*
Correction for height, *70* feet above Mean Sea-level, = + .077
Mean, reduced to 32°, and Sea-level, = *29.765*
Highest Reading, corrected for Index error, on the *15*th, = *30.213*
Lowest Do. Do., on the *9*th, = *28.730*
Difference, or Monthly Range, = *1.483*

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the *th*, = *53.8*
Lowest in Month, corrected for Index errors, on the *th*, = *28.0*
Difference, or Monthly Range, = *25.8*
"Corrected Mean" of all the Highest, (Col. 5), = *45.7*
"Corrected Mean" of all the Lowest, (Col. 6), = *37.0*
Difference, or Mean Daily Range, = *8.7*
** Calculated Mean Temperature of Month, = *41.4*
S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the *th*, =
"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, =
Lowest at Night, Black Bulb, (corrected for Index errors), on the *th*, =
"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, =
Difference of above Means or Range ("exposed"), =

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), =
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), =
†† Computed Temperature of Dew-Point, =
†† Do. Elastic Force of Vapour, =
†† Do. Weight of Vapour in a Cubic Foot of Air, ... =
†† Relative Humidity, (Saturation = 100), =
RAIN fell on *3* Days; Amount in Inches, = *1.19*
WIND. SUMMARY.
Direction. N NE E SE S SW W NW
A.M. *2* *5* *4* *7* *2* *8* *1* *1.78*
P.M. *1* *1* *5* *3* *7* *1* *10* *1* *1.63*
Mean. *1* *1* *5* *3* *7* *2* *9* *1* *0* *1.70* = *2.89* *26*

* Each instrument tested at the Office in Edinburgh bears the stamp "S.M.S.," and a number to be entered in the Heading; or the Number and Initials of the Tester may be here given.
† Enveloping corrections for both capillarity and Index Errors.
‡ The Diurnal Range for Scotland is as yet unknown.
†† These "Hygrometrical Deductions" are calculated from Glaisher's Hygrometrical Tables, Second Edition only.
‡‡ While the Diurnal Range is unknown, the Arithmetical Mean of Cols. 5 and 6 will be entered as the "Calculated Mean Temperature."
Any Observations not taken under the conditions specified in the Directions on the other side, or noted at the Top of each column, must be marked as such by the observer, in each Schedule. See over.

G.P. Range on the 9th = 18.3

(Signed) *George Redpath* H.R.

Observations made and Return verified by

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at

Leith

County of

Edinburgh

in Lat.

55° 59' N.

Long.

3° 10' W.

Distance from Sea

half

miles.

Height of Cistern of the Barometer above Mean Sea-level

feet, above Ground

feet.

During the MONTH of

March

1884.

The Hours of Observation are of Greenwich Time.

* With the exception of those thus marked * all the 9 a.m. Barometric observations were made with a 4 inch Fort Marine Barometer; all the 9 p.m. and those marked * with a Fortin Standard No. 733.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETER.				HYGROMETER.				WIND.				RAIN.				CLOUDS.				THERMOMETERS under Ground.				SEA.		OZONE.		GENERAL REMARKS.		Days of Month.
		at 32° and Sea-level.		Read Daily, at 9 P.M.		No.		No.		No.		No.		No.		No.		No.		No.		No.		No.		No.		No.								
		9 h. A.M.		9 h. P.M.		Protected in Shade, Above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.		9 h. A.M.		9 h. P.M.		Readings of the H. Cup Anemometer.		No. of hours in which it fell.		9 A.M.		P.M.		9 h. A.M.		Temperature of Well at each of 30 fathoms.		Temperature of Surface and Wind.		9 A.M. 9 P.M.				
		Barometer.	Attached Thermometer.	Barometer.	Attached Thermometer.	Max.	Min.	Max.	Min.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	Direction.	Force.	Direction.	Force.	No.	Amount in inches.	Velocity (0-10), and Direction.	Amount (0-10), and Direction.	Velocity (0-10), and Direction.	Amount (0-10), and Direction.	No. 3 inches.	No. 12 inches.	No. 22 inches.	No. 30 fms.	Temperature of Surface and Wind.	9 A.M. 9 P.M.							
		inches.	inches.	inches.	inches.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.				
	1	29.999	30.096	36.7	31.8	32.5	32.0	36.7	35.0	5.6	1.5	5.6	1.0	0.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Snowstorm early on; overcast	1			
*	2	30.155	30.057	44.8	36.6	36.6	34.7	36.9	34.7	5.5	1.5	5.5	1.5	—	2.5	8.6	2.5	5.7	—	—	—	—	—	—	—	—	—	—	—	—	Bright sunshine	2				
	3	29.681	29.519	39.4	31.3	35.5	32.5	38.7	37.5	5.6	2.0	5.6	2.0	0.8	—	6.5	—	0	—	—	—	—	—	—	—	—	—	—	—	—	Overcast; after 3 p.m. 2; 9 p.m. clear	3				
	4	29.709	29.662	40.0	34.7	36.6	35.8	38.5	37.7	5.5	1.7	5.5	1.5	2.4	—	10	—	10	—	—	—	—	—	—	—	—	—	—	—	—	Overcast; afternoon C. h. r.	4				
	5	29.869	30.078	47.8	37.2	40.1	37.5	40.2	38.7	5.5	1.7	5.5	1.0	0.8	—	0	1.5	15.1	—	—	—	—	—	—	—	—	—	—	—	—	3 p.m. sunny	5				
	6	30.057	29.881	55.0	40.2	46.1	43.8	46.5	44.0	5	2.0	5.5	2.0	—	—	9.6	—	10	—	—	—	—	—	—	—	—	—	—	—	—	Am. fine; evening cloudy; 9 p.m. sh.	6				
	7	29.751	29.774	47.3	43.5	45.9	43.0	43.5	43.0	5.5	1.5	5.5	1.5	0.6	—	10.5	—	10	—	—	—	—	—	—	—	—	—	—	—	—	6 cloudy; evening mod. r.	7				
	8	29.676	29.462	44.2	35.3	40.3	39.7	35.3	34.7	Var.	1.0	Var.	1.0	2.4	2.5	10.4	—	0	—	—	—	—	—	—	—	—	—	—	—	—	Overcast; 11 till 7 p.m.; then clear	8				
*	9	29.378	29.280	47.2	34.6	39.0	36.4	38.7	36.4	5.5	2.5	5.5	2.5	—	—	9.5	—	9.5	—	—	—	—	—	—	—	—	—	—	—	—	7 p.m.	9				
	10	29.082	29.231	42.0	33.5	35.3	34.3	35.8	34.5	5.5	2.5	5.5	2.0	2.0	—	10.4	—	10.4	—	—	—	—	—	—	—	—	—	—	—	—	Am. and clear before 8 a.m.; then fine; 9 p.m. hill mist	10				
	11	29.387	29.466	45.0	31.6	36.0	33.5	38.5	37.2	5.6	1.0	5.6	2.0	0.5	—	0	2.5	9.5	—	—	—	—	—	—	—	—	—	—	—	—	2 p.m.	11				
	12	29.528	29.610	47.2	36.9	40.9	38.5	41.5	39.6	5	1.5	5.5	2.5	0.1	—	4.5	—	10	—	—	—	—	—	—	—	—	—	—	—	—	Mostly fine; some sh.	12				
	13	29.720	29.686	52.8	39.1	47.3	45.2	51.7	49.2	5	2.5	5	3.0	—	—	2.5	—	10.5	—	—	—	—	—	—	—	—	—	—	—	—	Cloudy	13				
	14	29.740	29.766	56.0	49.1	52.0	49.0	51.5	49.2	5.5	3.0	5.5	3.5	—	—	4.5	—	10.5	—	—	—	—	—	—	—	—	—	—	—	—	Am. sunny; fine overcast; slight sh.	14				
	15	29.906	29.971	56.8	48.7	50.5	48.7	51.7	48.8	5	2.0	5	1.0	0.1	—	2.5	—	9.5	—	—	—	—	—	—	—	—	—	—	—	—	2 p.m.	15				
*	16	29.970	29.928	69.4	42.7	52.0	49.5	48.5	46.2	5.5	1.5	5.5	2.5	—	—	2.5	—	10.5	—	—	—	—	—	—	—	—	—	—	—	—	2 p.m.	16				
	17	29.913	29.844	59.7	43.5	46.3	45.0	49.5	45.9	5.6	1.5	5.6	1.5	—	—	1.5	—	10.5	—	—	—	—	—	—	—	—	—	—	—	—	2 p.m. evening shower v.	17				
	18	29.738	29.724	56.0	42.5	48.3	45.1	43.5	40.6	5.5	2.5	5.5	2.5	0.8	—	3.5	—	9.5	—	—	—	—	—	—	—	—	—	—	—	—	Am. fine; fine; logs v. & h. sh.	18				
*	19	29.821	29.499	54.0	41.8	46.5	43.0	48.4	45.7	5.5	3.0	5.5	3.5	1.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Am. sunny; fine cloudy; evening sh.	19				
*	20	29.175	29.571	50.5	37.6	41.2	39.3	37.6	37.0	5.5	4.5	5.5	4.5	0.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Am. heavy sqs; sh.; fine variable; equally	20				
*	21	29.867	29.971	49.1	36.5	41.4	37.6	39.4	35.7	5.5	4.5	5.5	4.5	—	—	—	—	0	—	—	—	—	—	—	—	—	—	—	—	—	Mostly fine; slight h. sh. at 1 p.m.	21				
	22	29.914	29.931	49.0	35.3	40.5	39.4	41.7	39.5	5.5	4.5	5.5	4.5	—	—	2.0	—	9.5	—	—	—	—	—	—	—	—	—	—	—	—	2 p.m. 6 a.m. and 1 p.m. slight sh.	22				
*	23	30.084	30.130	48.2	38.7	42.4	39.7	43.5	41.0	5.5	4.5	5.5	4.5	—	—	2.5	—	10.5	—	—	—	—	—	—	—	—	—	—	—	—	Overcast 9 a.m.; then fine	23				
	24	30.155	30.102	55.1	34.5	43.5	40.9	41.7	39.5	5.5	4.5	5.5	4.5	—	—	2.5	—	10.5	—	—	—	—	—	—	—	—	—	—	—	—	2 p.m. rather heavy	24				
	25	30.127	30.191	54.0	39.7	43.5	41.3	41.3	39.5	5.5	4.5	5.5	4.5	—	—	1.0	—	4.5	—	—	—	—	—	—	—	—	—	—	—	—	Thick haze 6 till 8 a.m.; fine cloudy	25				
	26	30.294	30.321	41.6	31.2	38.3	36.5	36.5	35.7	5.5	2.5	5.5	2.5	—	—	2.5	—	4.5	—	—	—	—	—	—	—	—	—	—	—	—	Cloudy	26				
	27	30.308	30.244	42.0	36.3	40.7	37.6	38.3	36.5	5.5	2.0	5.5	2.0	—	—	1.5	—	4.5	—	—	—	—	—	—	—	—	—	—	—	—	2 p.m. cloudy; slight h. sh. at 9 p.m.	27				
	28	30.181	30.162	40.9	35.6	39.0	36.8	36.8	36.3	5.5	2.0	5.5	2.0	—	—	—	—	4.5	—	—	—	—	—	—	—	—	—	—	—	—	Cloudy; 6 p.m. sh. sh.	28				
	29	30.136	30.000	42.0	34.1	38.5	36.8	38.3	36.1	5.5	1.0	5.5	1.0	—	—	—	—	8.5	—	—	—	—	—	—	—	—	—	—	—	—	Sunny till 11 a.m.; then cloudy	29				
*	30	29.840	29.643	42.8	38.2	40.4	36.6	40.0	37.3	5.5	2.0	5.5	2.0	—	—	1.5	—	8	—	—	—	—	—	—	—	—	—	—	—	—	Cloudy; thick haze at 8 a.m.	30				
	31	29.427	29.438	49.1	33.2	43.0	39.8	33.2	32.2	5.5	3.0	5.5	3.0	0.1	—	2.5	—	10.5	—	—	—	—	—	—	—	—	—	—	—	—	Cloudy; 4 p.m. shower; 9 p.m. clear	31				
NOTATION USED IN GENERAL REMARKS.																																				
a. denotes aurora. m. denotes meteor.																																				
ci. " cirrus. ms. " meteora.																																				
ci.-cu. " cirro-cumulus. n. " nimbus.																																				
ci.-s. " cirro-stratus. r. " rain.																																				
cu. " cumulus. h. r. " heavy rain.																																				
cu.-s. " cumulo-stratus. c. h. r. " continued heavy rain.																																				
d. " dew. s. " stratus.																																				
f. " fog. sc. " scud.																																				
fr. " frost. s. " sleet.																																				
h.-fr. " hoar-frost. s. " snow.																																				
h. " haze. sol. h. " solar halo.																																				
h. d. " heavy dew. sq. " squall.																																				
hl. " hail. sqs. " squalls.																																				
li. " lightning. t. " thunder.																																				
li. cl. " light clouds. t. s. " thunder storm.																																				
li. sh. " light showers. w. " wind.																																				
lu. cov. " lunar corona. g. " gale of wind.																																				
lu. h. " lunar halo.																																				
TABLE FOR ESTIMATING FORCE OF WIND.																																				
Estimated Force, 0-6. Common Designation. Estimated Force, 0-6. Common Designation. Estimated Force, 0-6. Common Designation.																																				
0 0.5 1' Calm Very light air Light air 1.5 2' 3' Light breeze Fresh breeze Very fresh 4 5 6 Blowing hard Blowing a gale Violent gale																																				
No. 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 25 26 27 28 29 30																																				

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction for Temp. (Col. 2), = 29.825

Corrected Mean" of Barometer at 9 P.M., minus the Correction for Temp. (Col. 4), = 29.814

Mean at Station, corrected, and at 32°, = 29.742

Correction for height, 70 feet above Mean Sea-level, = .077

Mean, reduced to 32°, and Sea-level, = 29.819

Highest Reading, corrected for Index error, on the 26th, = 30.321

Lowest Do. Do., at 9 a.m. on the 10th, = 29.082

Difference, or Monthly Range, = 1.239

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 16th, = 69.4

Lowest in Month, corrected for Index errors, on the 26th, = 31.2

Difference, or Monthly Range, = 38.2

"Corrected Mean" of all the Highest, (Col. 5), = 48.6

"Corrected Mean" of all the Lowest, (Col. 6), = 37.6

Difference, or Mean Daily Range, = 11.0

* Calculated Mean Temperature of Month, = 43.1

S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 16th, = 122.6

"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, = 122.6

Lowest at Night, Black Bulb, (corrected for Index errors), on the 10th, = 31.2

"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, = 31.2

Difference of above Means or Range ("exposed"), = 91.4

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 41.6

Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 39.6

† Computed Temperature of Dew-Point, = 37.1

† Do. Elastic Force of Vapour, = 2.22

† Do. Weight of Vapour in a Cubic Foot of Air, = 2.56

† Relative Humidity, (Saturation = 100), = 85

RAIN fell on 14 Days; Amount in Inches, = 1.50

WIND.		SUMMARY.									
Direction.		N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.
A.M.		1	7	3	9	1	8	2	1.98		
P.M.		1	3	7	8	1	7	1	3	1.74	
Mean.		1	0.5	5	8	1	8	1	2	1.86	3.46

Observations made and
Return verified by

(Signed)

Robert & George Rappaport

H. R.
H. R.

41.6
39.6
37.1
2.22
2.56
85
1.50

OBSERVATIONS,

In selecting instruments, the following points require attention :—

A knowledge of the Temperature of the Sea is not only in itself, but in its relations to that of our island, a most important and a most interesting branch of Meteorology. The Council therefore recommended that the Temperature of the Sea be carefully taken by a properly constructed apparatus, from boats or from the shore, at least twice a day, at the same hour, and in the same place, if this be practicable, from the ends of piers and rocks round the coast, where it is not influenced by that of river water, and as little influenced as possible by currents sweeping along the coast, and thus acquiring the temperature of the land, either greatly heated by the sun or cooled by nocturnal radiation. At or near the time of high

EDINBURGH, December 1882.

FOREST TREES.		In flower.	First buds	First appear.	In leaf.	Directed of leaves.	CROPS mentioning variety.	Sowing or planting.	Appearing or above ground.	In leaf or flower.	First Q or late
Alder,	...						Barley,				
Ash,	...						Bare or Bigger,				
Beech,	...						Oats,				
Birch,	...						Wheat,				
Elm,	...						Beans,				
Larch,	...						Pease,				
Lime,	...						Potatoes,				
Oak,	...						Turmps,				
Sycamore or Plane,	...						Rye Grass,				

[illegible]

BOOK POST.

Leitch
Nov-1884

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Leith, County of Edinburgh, in Lat. 55° 59' N, Long. 3° 10' W, Distance from Sea half miles.

Height of Cistern of the Barometer above Mean Sea-level _____ feet, above Ground _____ feet.

During the MONTH of April 1884

The Hours of Observation are of Greenwich Time.

The Hours of Observation are of Greenwich Time.

*all the 9 am. Barometric Observations except those marked * were made with a Klot Marine; all the 8.45 pm. observations and those marked * with a Fortin Standard No. 733.*

ELECTRICITY.	Days of Month.	BAROMETER. <i>at 32° am Sea-level.</i>				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER. <i>No. 33,648</i>				WIND.				RAIN.				CLOUDS.				THERMOMETERS under Ground.				SEA.	OZONE.	GENERAL REMARKS. As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc. <i>Mention the hour at which Storms, including Thunder and Lightning, begin and end.</i>	Days of Month.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
		9 h. A.M.		<i>8.45</i> h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.		9 h. A.M.		9 h. P.M.		Readings of the H.Cup Anemometer.		No. of hours in which it fell.		9 A.M.		I.M.		9 h. A.M.		Temperature of WELL, at depth of feet No.	Temperature at 1 fathom, and Density,					9 A.M. 9 P.M.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
		Barometer. * No.	Attach- ed Ther- mometer No.	Barometer. No.	Attach- ed Ther- mometer No.	Max. No.	Min. No.	Max. in Sun's rays No.	Min. on Grass. No.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	Direc- tion.	Force.	Direc- tion.	Force.	No. 9 h. A.M.	Amount in inches.	Velocity (0-10), and Direc- tion.	Amount (0-10), and Species.	Velocity (0-10), and Direc- tion.	Amount (0-10), and Species.	9 h. A.M.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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BAROMETER, "corrected Mean" at 9 A.M., minus the Correction Lt.		= 29.868
for Temp. (Col. 2) —————		
Corrected Mean of Barometer at 8.45 P.M., minus the Correction Lt.		= 29.888
for Temp. (Col. 1) —————		
Mean at Station, corrected, and at 32°;		= 29.801
Correction for height, 70 feet above Mean Sea-level,.....		= .077
Mean, reduced to 32°, and Sea-level,.....		= 29.878
Highest Reading, corrected for Index error, on the 13 th,.....		= 30.272
Lowest	Do. Do. on the 5 th,.....	= 29.177
Difference, or Monthly Range,.....		= 1.095

S.-R. THERMOMETER , (in shade, etc.), Highest in Month , (corrected for Index Errors), on the <u>20th</u>	=	<u>61° 9</u>
Lowest in Month , corrected for Index errors, on the <u>25th</u> ,	=	<u>30° 8</u>
Difference, or Monthly Range ,	=	<u>31° 1</u>
"Corrected Mean " of all the Highest , (Col. 5),	=	<u>49° 4</u>
"Corrected Mean " of all the Lowest , (Col. 6),	=	<u>38° 4</u>
Difference, or Mean Daily Range ,	=	<u>11° 0</u>
** Calculated Mean Temperature of Month,	=	<u>43° 9</u>

S.-R. THERMOMETER , Black Bulb in Sun , Highest , (corrected for Index Errors), on the th,	=	
"Corrected Mean ," (Col. 7), of Black Bulb , Max. in Sun ,	=	
Lowest at Night , Black Bulb, (corrected for Index errors), on the th, ...	=	
"Corrected Mean ," (Col. 8), of Black Bulb , Min. on grass,	=	
Difference of above Means or Range ("exposed"),	=	

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11),		=	43.0 43.5
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12),		=	40.0 40.8
‡ Computed Temperature of Dew-Point ,		=	37.0 37.6
‡ Do. Elastic Force of Vapour ,		=	2.22 2.25
‡ Do. Weight of Vapour in a Cubic Foot of Air , ...		=	2.61
‡ Relative Humidity , (Saturation = 100),		=	79 79
RAIN fell on <u>14</u> Days; Amount in Inches,		=	1.01

WIND.		SUMMARY.									
Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.
A.M.	4	4	11	5	2		1	3		1.92	
P.M.	0	3	15	4	2	1	3	0	2	1.62	
Mean.	2	4	13	4	2	1	2	1	1	1.77	= 3.13

S.D. Range on the 1st = 23.5

(Signed) James Boland + George Redpath. H. H.
H. H.

Observations made and
Return verified by

INSTRUCTIONS FOR TAKING METEOROLOGICAL OBSERVATIONS,

WITH REMARKS ON THE USE OF INSTRUMENTS.

OBSERVATIONS,

Leith April 1884

To

Mr ALEXANDER BUCHAN.

Secretary of the Meteorological Society of Scotland.

EDINBURGH.

BOOK POST.

One of the chief objects that the Scottish Meteorological Society proposed to itself when the Society was established in 1853, was to secure regular uniformity in the system of observation pursued at all its Stations. Uniformity in the observations is absolutely necessary to justify the publication of Monthly Results from different observations, it being found that differences between the Returns from two Stations, so very considerable as to render them quite incomparable, may arise from dissimilarity in the position or shelter of instruments, different hours of observation, or even from the use of differently constructed instruments. It is therefore hoped, that those who kindly furnish Reports to the Society will, by a scrupulous attention to the following Directions, secure for their Monthly Returns, an accuracy and value commensurate with the labour and pains involved in making them; and, for the Tables published by the Society, an entire comparableness among the several Returns, without which the Society's Reports must inevitably fail in achieving one of the main objects of Meteorological Observation.

The Council recommend that Observations be made precisely at 9 a.m. and 9 p.m. (Greenwich or Railway Time only), as specified in the following remarks, or at the top of the column of the Schedule. It is hoped that the utmost punctuality in the time of reading the instruments will be observed. Observers, in some few cases, may find this impossible; in such instances, they are specially requested to mark opposite every reading the time at which it was taken, if not at 9 a.m. or 9 p.m. Weather-glasses and Aneroids, though well-suited to indicate roughly variations of atmospheric pressure, are not fitted for scientific purposes. No Barometer should be used for Meteorological Observation that is not supplied with some means of adjustment or compensation which will secure that the heighting of the mercury in the tube is accurately measured from the fluctuating surface of the mercury in the cistern.

The Barometer in which the error arising from the fluctuating surface of the mercury in the cistern is entirely got rid of is Fortin's Barometer, the arrangement consisting in applying pressure by means of a screw to the bottom of the cistern, which is made of flexible leather, thus raising or depressing the surface till it just meets the ivory point which forms the zero point of the scale.

The Barometer originally constructed by Mr. A. of London, and usually called the Barometer of Trade, has the great convenience of requiring no adjustment, but it has the great disadvantage of not being so accurate as Fortin's. It is also liable to error that would otherwise arise from the fluctuations of the surface of the mercury in the cistern. This is an excellent Barometer for ordinary Observations, as it entirely eliminates the error of adjustment. It is likely to rise in not a few cases in setting the instrument to the zero point of the fixed scale when the light is not good. To show the extent to which these Barometers are made, it may be stated, that one was compared, during a whole year, with the Society's Standard Barometer, particular care being given to make the comparison when atmospheric pressure was rising or falling very rapidly, with the result that none of the readings differed from those of the Standard more than 0.003 inch.

A modification of Fortin's Barometer is used at a number of the Society's Stations, by which the coincidence of the zero point with the surface of the mercury is indicated by a little ivory float, whose stem passes freely through the lid and ease of the cistern. When the index-line on this little piston-rod is brought, by the adjusting screw, to form one straight line with those on its ivory frame, the surface of the mercury is then at the exact height from which the scale is graduated. In taking an observation, this preliminary setting must be made with scrupulous accuracy; as a slight error here will vitiate the readings from the vernier.

It is absolutely necessary that the Barometer which is to be used, shall have been compared with a Standard Barometer.

The Barometer should be suspended in as good a light as can be secured, and to facilitate the reading, a piece of white paper may be put behind the tube. It must be hung truly perpendicular, and exposed to neither the sun's direct rays nor the heat of a fire, and must not be hung against a wall heated by a fire. The object being to secure that the whole instrument, including the brass fittings, the contained mercury, and the attached Thermometer, shall be, when read, at one uniform temperature, it is evident that the best position is that which is least liable to sudden changes of temperature.

In taking an Observation, the Attached Thermometer is first noted: the tube must then be gently tapped, and the cistern-adjustment carefully made. The eye, by raising and lowering it, must be brought into the plane of the back and front of the index—usually the lower edge of the vernier, which must be carefully adjusted so as to form exactly a tangent to the convex surface of the mercury in the tube. Observers must be taken quickly so as to prevent heat from the observer's hands and person from affecting the mercury. The use of a lens will facilitate an accurate adjustment and reading of the Barometer. A mistake not infrequently made by those beginning to observe, consisting in setting the edge of the vernier to the level of the clear surface of the mercury which is in direct contact with the glass tube, must be carefully avoided.

The errors most frequently made in reading the Barometer are errors of inch, 0.500 inch, and 0.650 inch; that is to say, instead of 29.962 inches, at 29.462 inches, or 30.462 inches, or 30.962 inches, or 31.462 inches, or 31.962 inches, or 32.462 inches, or 32.962 inches, or 33.462 inches, or 33.962 inches, or 34.462 inches, or 34.962 inches, or 35.462 inches, or 35.962 inches, or 36.462 inches, or 36.962 inches, or 37.462 inches, or 37.962 inches, or 38.462 inches, or 38.962 inches, or 39.462 inches, or 39.962 inches, or 40.462 inches, or 40.962 inches, or 41.462 inches, or 41.962 inches, or 42.462 inches, or 42.962 inches, or 43.462 inches, or 43.962 inches, or 44.462 inches, or 44.962 inches, or 45.462 inches, or 45.962 inches, or 46.462 inches, or 46.962 inches, or 47.462 inches, or 47.962 inches, or 48.462 inches, or 48.962 inches, or 49.462 inches, or 49.962 inches, or 50.462 inches, or 50.962 inches, or 51.462 inches, or 51.962 inches, or 52.462 inches, or 52.962 inches, or 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SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Leith, County of Edinburgh, in Lat. 55° 59' N, Long. 3° 10' W, Distance from Sea half miles.

Height of Cistern of the Barometer above Mean Sea-level _____ feet, above Ground _____ feet.

During the MONTH of May 1884

The Hours of Observation are of Greenwich Time.

The Hours of Observation are of Greenwich Time.

*All the g. and Barometric Observations except those marked * were made with a West Marine, and the 8.45 p.m. Observations and those marked * with a Fortin Standard No. 733.*

[illegible]

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction for Temp. (Col. 2), =	<u>29.881</u>
Corrected Mean" of Barometer at ^{8.45} 9 P.M., minus the Correction for Temp. (Col. 4), =	<u>29.888</u>
Mean at Station, corrected, and at 32°, =	29.807
Correction for height, 70 feet above Mean Sea-level, =	.077
Mean, reduced to 32°, and Sea-level, =	29.884
Highest Reading, corrected for Index error, on the ^{at 10.30 a.m.} 26 th, =	30.402
Lowest Do. Do. ^{at 11.45 a.m.} on the 4 th, =	28.914
Difference, or Monthly Range, =	1.488

S.-R. THERMOMETER , (in shade, etc.), Highest in Month , (corrected for Index Errors), on the <u>23rd</u>	=	<u>69° 4</u>
Lowest in Month , corrected for Index errors, on the <u>7th</u>	=	<u>35° 5</u>
Difference, or Monthly Range ,	=	<u>33° 9</u>
"Corrected Mean " of all the Highest , (Col. 5),	=	<u>56° 4</u>
"Corrected Mean " of all the Lowest , (Col. 6),	=	<u>42° 8</u>
Difference, or Mean Daily Range ,	=	<u>13° 6</u>
^{**} Calculated Mean Temperature of Month,	=	<u>49° 6</u>

S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the th, =

“Corrected **Mean**,” (Col. 7), of **Black Bulb, Max. in Sun**, =

Lowest at Night, Black Bulb, (corrected for Index errors), on the th, ... =

“Corrected **Mean**,” (Col. 8), of **Black Bulb, Min.** on grass, =

Difference of above Means or Range (“exposed”), =

G. S. Range on the 23rd = 27.0

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb , (Cols. 9 and 11),	=	48°.9
Mean (corrected) A.M. and P.M. Reading of Wet Bulb , (Cols. 10 and 12),	=	45°.3
‡ Computed Temperature of Dew-Point ,	=	41°.4
‡ Do. Elastic Force of Vapour ,	=	262 inch
‡ Do. Weight of Vapour in a Cubic Foot of Air , ...	=	3.00
‡ Relative Humidity , (Saturation = 100),	=	76
RAIN fell on 16 Days; Amount in Inches,	=	2.66

WIND.		SUMMARY.									
Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.
A.M.	2		8	1	5		11	3	1	2.31	
P.M.			8	1	3	2	4	2	1	2.15	
Mean.	1	0	8	1	4	1	2	3	1	2.22	= 2.22

$$2.23 = 4.97 \text{ lbs}$$

Observations made and
Return verified by

(Signed) James Polarn & George Redpath.

A.R.
H.R.

~~6 6 9~~
~~4 4 6~~
~~4 4 6~~
~~4 9 7 2 9~~

11

Height of Cistern of the Barometer above Mean Sea-level_____feet, above Ground_____feet.

During the MONTH of June 1884

The Hours of Observation are of Greenwich Time.

The Hours of Observation are of Greenwich Time.

9 am
 All the Barometric Observations were made with a Kert Maine except those marked *; the 8.45 pm and those marked * with a Fortin Standard, No. 733.

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction $+1.1$	=	30.023
for Temp. (Col. 2), $+0.000$	=	
Corrected Mean of Barometer at 9 P.M., minus the Correction $+1.1$	=	30.023
for Temp. (Col. 1), $+0.000$	=	
Mean at Station, corrected, and at 32°,	=	29.946
Correction for height, 70 feet above Mean Sea-level,	=	.077
Mean, reduced to 32°, and Sea-level,	=	30.023
Highest Reading, corrected for Index error, on the 14th,	=	30.318
Lowest Do. Do., $+0.457$ in, on the 1st,	=	29.530
Difference, or Monthly Range,	=	0.788

* Each instrument tested at the Office in Edinburgh bears the stamp "S.M.S.," and a number to be entered in the Heading; or the Number and Initials of the Maker may be here given.

† Embracing corrections for both capillary and Index Errors.

‡ The Diurnal Range for Scotland is as yet unknown.

§ Corrected, though not *absolutely* a *minus* correction.

|| These "Hygrometrical Deductions" are calculated from Glaisher's Hygrometrical Tables, 2d Edition, 1852.

¶ While the Diurnal Range is unknown, the Arithmetic mean of ϕ and ϕ' will be entered as the "Calculated Mean Temperature."

Any Observations not taken under the conditions specified in the Directions on each side, or noted at the Top of each column, will be entered in the Remarks.

Any Observations not taken by the Observer, in each Schedule. See over.

S.-R. THERMOMETER , (in shade, etc.), Highest in Month , (corrected for Index Errors), on the <u>28</u> th,	=	<u>73° 4</u>
Lowest in Month , corrected for Index errors, on the <u>14</u> th,	=	<u>44° 8</u>
Difference, or Monthly Range ,	=	<u>28° 6</u>
" Corrected Mean " of all the Highest , (Col. 5),	=	<u>61° 5</u>
" Corrected Mean " of all the Lowest , (Col. 6),	=	<u>49° 2</u>
Difference, or Mean Daily Range ,	=	<u>12° 32</u>
** Calculated Mean Temperature of Month,	=	<u>55° 3</u>

S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the	th.....	=
" Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun,		=
Lowest at Night, Black Bulb, (corrected for Index errors), on the	th, ...	=
" Corrected Mean," (Col. 8), of Black Bulb, Min. on grass,		=
Difference of above Means, or Range ("exposed"),		=

g. sy. Range on the 28th = 20.8

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb , (Cols. 9 and 11),	=	54°·9	55·0
Mean (corrected) A.M. and P.M. Reading of Wet Bulb , (Cols. 10 and 12),	=	50°·8	50·8
‡ Computed Temperature of Dew-Point ,	=	46°·9	46·8
‡ Do. Elastic Force of Vapour ,	=	321	320
‡ Do. Weight of Vapour in a Cubic Foot of Air , ...	=		3·64
‡ Relative Humidity , (Saturation = 100),	=	75	74
RAIN fell on 6 Days ; Amount in Inches,	=	0·66	

WIND.		SUMMARY.									
Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.
A.M.		2	6	2	1	2	11	4	2	2.17	
P.M.	2		8	3	1		12	1	3	1.85	
Mean.	1	1	7.3	1	1	11	3	2	2.01	= 4.06	

Observations made and
Return verified by

(Signed) James Bolam & George Redpath

H. R.
H. R.

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Leith, County of Edinburgh, in Lat. 55° 59' N, Long. 3° 10' W, Distance from Sea half miles.

Height of Cistern of the Barometer above Mean Sea-level _____ feet, above Ground _____ feet.

During the MONTH of July 1884.

The Hours of Observation are of Greenwich Time.

The Barometric Observations in this schedule marked * are made with a Kerr Marine; all the others with a Fortin Standard, No. 733.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS.				HYGROMETER.				WIND.				RAIN.	CLOUDS.				THERMOMETERS under Ground.			SEA.	OZONE.	GENERAL REMARKS.	Days of Month.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
		at 32° and Sea-level.		8.45 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.		9 h. A.M.		9 h. P.M.			9 A.M.		9 P.M.		9 h. A.M.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
		Barometer.	Attached Thermometer.	Barometer.	Attached Thermometer.	Max. No.	Min. No.	Max. No.	Min. No.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	Direction.	Force.	Direction.	Force.		Velocity (0-10) and Direction.	Amount (0-10) and Species.	Velocity (0-10) and Direction.	Amount (0-10) and Species.	No. 1.	No. 2.	No. 3.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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BAROMETER, "corrected Mean" at 9 A.M., minus the Correction for Temp. (Col. 2), = 29.870
Corrected Mean "of Barometer at 8.45 h. P.M., minus the Correction for Temp. (Col. 4), = 29.875
Mean at Station, corrected, and at 32° = 29.795
Correction for height, feet above Mean Sea-level, = .077
Mean, reduced to 32°, and Sea-level, = 29.872
Highest Reading, corrected for Index error, on the 1st, = 30.189
Lowest Do. Do., at 9 pm on the 16th, = 29.372
Difference, or Monthly Range, = 0.817

* Each instrument tested at the Office in Edinburgh bears the stamp "S.M.S.," and a number to be entered in the Heading; or the Number and Initials of the Maker may be here given.
† Embracing corrections for both capillarity and Index Errors.
‡ The Diurnal Range for Scotland is as yet unknown.
§ Practically, though not absolutely a minus correction.
|| These "Hygrometrical Deductions" are calculated from Glashier's Hygrometrical Tables, 2nd Edition.
¶ While the Diurnal Range is unknown, the Arithmetic Mean of Cols. 5 and 6 will be entered in the "Calculated Mean Temperature." Any Observations not taken under the conditions specified in the Directions on the other side, or noted at the Top of each column, must be marked as such by the observer, in each Schedule. See over.

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 8th, = 74° 2
Lowest in Month, corrected for Index errors, on the 20th, = 44° 9
Difference, or Monthly Range, = 29° 3
"Corrected Mean" of all the Highest, (Col. 5), = 63° 5
"Corrected Mean" of all the Lowest, (Col. 6), = 52° 3
Difference, or Mean Daily Range, = 11° 2
** Calculated Mean Temperature of Month, = 57° 9

S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the th, =
"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, =
Lowest at Night, Black Bulb, (corrected for Index errors), on the th, =
"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, =
Difference of above Means or Range ("exposed"), =

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 56° 4
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 53° 7
†† Computed Temperature of Dew-Point, = 51° 1
†† Do. Elastic Force of Vapour, = 0.378
†† Do. Weight of Vapour in a Cubic Foot of Air, = 4.23
†† Relative Humidity, (Saturation = 100), = 83
RAIN fell on 26 Days; Amount in Inches, = 5.22

WIND.													SUMMARY.		
Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.				
A.M.			12	2	5	1	8	2	1	1.73					
P.M.	1		11	3	4	1	5	1	5	1.47					
Mean.	0	0	12	2	5	1	6	2	3	1.60	2.56				

Observations made and
Return verified by

(Signed)

James Polson & Geo. Redpath

Greatest Daily Range = 22.4 on the 8th

74.

One of the chief objects that the Corporation Meteorological Society proposed to itself when the Society was established in 1855, was to secure greater uniformity in the system of observation pursued at all its Stations. Uniformity in the observations is absolutely necessary to justify the publication of Monthly Results from different observations, it being found that differences between the returns from two Stations, so very considerable as to render them quite incompatible, may arise from dissimilarity in the position or shelter of instruments, different hours of observation, or even from the use of differently constructed instruments. It is therefore hoped, that those who kindly furnish Reports to the Society will, by a scrupulous attention to the following Directions, secure for the Monthly Returns, an accuracy and value commensurate with the labour and pains involved in making them; and, for the Tables published by the Society, an entire comprehensiveness among several Returns without which the Society's Reports must inevitably fail in achieving one of the main objects of Meteorological Observation.

The Council recommend that Observations be made precisely at 9 A.M. and 5 P.M. (Greenwich or Railway Time only), as specified in the following remarks, on at the top of the columns of the Schedule. It is hoped that the utmost punctuality in the time of reading the Instruments will be observed. Observers, in some few cases may find this impossible; in such instances, they are specially requested to mark opposite every reading the time at which it was taken, if not at 9 A.M. or 5 P.M.

Weather-Glasses and Aneroids, though well-suited to indicate various variations of atmospheric pressure, are not fitted for scientific purposes. No Barometer should be used for Meteorological Observation that is not supplied with some means of adjustment or compensation which will secure flatness of the mercury in the tube (especially measured from the fluctuating surface of the water) arising from the fluctuation of the mercury in the cistern, or the evaporation of oil in Fournier's Barometer. The most convenient consisting in applying pressure by means of a screw to the bottom of the cistern, which is made of flexible leather thus raising or depressing the surface till it just meets the ivory joint which forms the zero point of the fixed scale.

The Barometer originally constructed by Mr. Adie of London, and usually called the Board of Trade Barometer, has the great convenience of requiring no adjustment of the cistern. Its scales are not true inches, but so much shorter as to compensate the error that would otherwise arise from the fluctuations of the surface of mercury in the cistern. This is an excellent Barometer for ordinary Observers, inasmuch as it entirely eliminates the error of observation likely to arise in not a few cases in setting the instrument to the zero point of the fixed scale when the light is not good. To allow the accuracy with which these Barometers are made, it may be stated, that one was compared, during a whole year, with the Society's Standard Barometer, particular care being given to make the comparison when atmospheric pressure was rising or falling very rapidly, with the result that none of the readings differed from those of the Standard more than 0·003 inch.

A modification of Fortin's Barometer is used at a number of the Society's Stations, by which the coincidence of the zero point with the surface of the mercury is indicated by a little ivory float, whose stem passes freely through the lid and case of the cistern. When the index-line on this little piston-rod is brought by the adjusting screw, to form one straight line with those on its ivory frame, the surface of the mercury is then at the exact height from which the scale is graduated. In taking an observation, this preliminary setting must be made with scrupulous accuracy; as a slight error here will vitiate the readings from the vernier.

It is absolutely necessary that the Barometer which is to be used, shall have been compared with a Standard Barometer.

The Barometer should be suspended in as good a light as can be secured, and to facilitate the reading, a piece of white paper may be pasted behind the tube. It must be hung truly perpendicular, and exposed to neither the sun's direct rays nor the draft of a fire, and must not be hung tight against a wall. The standard of a foot and six inches to be used in setting the tube vertically, the floating level of the contained mercury, the thickness of the glass cover, shall be noted, and, as before, temperature, it is evident that the best position is that which is least liable to sudden changes of temperature.

In taking an Observation, the Attached Thermometer is first noted; the tube must then be gently tapped, and the cistern-adjustment carefully made. The eye, by raising and lowering it, must be brought into the plane of the back and front of the index—usually the lower edge of the vernier, which must be carefully adjusted so as to form exactly a tangent to the convex surface of the mercury in the tube. Observations must be taken quickly, so as to prevent heat from the observer's hands and person from affecting the mercury. The use of a lens will facilitate an accurate adjustment and reading of the Barometer. A mistake not infrequently made by those beginning to observe, consisting in setting the edge of the vernier to the level of the clear surface of the mercury which is in direct contact with the glass tube, must be carefully avoided.

The errors most frequently made in reading the Barometer are errors of 1·0000 inch, 0·7500 inch, and 0·5000 inch; that is to say, instead of 29·365 inches, either of the following is sometimes set down—viz., 30·365 inches, 28·365 inches, or 29·815 inches. Experience having shown that even the very best Observers make these mistakes, particular attention is directed to the matter.

When a Barometer having adjustable screws has to be removed from its fastenings, the ivory peg must first be served so as to form a tight plug to the cistern, thus preventing the escape of the mercury. Then screw up the mercury not quite to the top of the tube, but to within a quarter of an inch of it, and take down the instrument; it should then be carried with the cistern uppermost. Before suspending the Barometer for use, it must be ascertained whether the space above the mercury in the tube is a complete vacuum; this is the case if, on inclining the instrument, a sharp tap is produced when the mercury strikes the top of the tube. If a dull tap is heard, there is air in the tube, which must be got rid of.

As Barometers are liable to be damaged by the introduction of air into their tubes, on removal from place to place, or in being roughly handled, it may be useful to observers to know how this air may be expelled, to prevent the necessity of throwing the very expensive instrument away. To do this, the cork stopper, having the key inserted, is to be put in each from the top of the tube, and the key slowly to wind the instrument round the top of it on a yielding substance, such as the book and gently tap the cistern with the palm of the hand, so as to induce the air to ascend through the column to the cistern, whence it may escape. Since there is the weight of two atmospheres—the pressure of the mercury in the Barometer, and the air outside—pressing on any air that may be inside the tube, it is usually a tedious operation to get it wholly expelled. After repeated trials, however, it is generally accomplished; and the clear metallic sound of the mercury, when gently struck against the top of the glass tube, will show when the whole of the air has been expelled. On hanging up the Barometer, care must be taken to screw down the mercury in the tube before refastening the float of the cistern, for, if this be not attended to, the mercury will flow out, and the instrument be seriously damaged.

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Leith, County of Edinburgh, in Lat 55° 59' N, Long 3° 10' W, Distance from Sea half miles.
Height of Cistern of the Barometer above Mean Sea-level feet, above Ground feet. During the MONTH of August 188 84.
The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS.				HYGROMETER.				WIND.				RAIN.	CLOUDS.				THERMOMETERS under Ground.			SEA.	OZONE.	GENERAL REMARKS.	Days of Month.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
		at 32° and Sea-level				Protected in Shade, 4 feet above Ground.				No. 32647.8				No. 32647.8					8 A.M. 9 P.M.				9 h. A.M.							9 h. A.M.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		Barometer, No. 733	Attached Thermometer, No. 733	Barometer, No. 733	Attached Thermometer, No. 733	Max. No. 22244	Min. No. 22218	Max. in Sun's rays No. 22244	Min. on Grass No. 22218	Dry bulb, No. 22244	Wet bulb, No. 22218	Dry bulb, No. 22244	Wet bulb, No. 22218	Direction.	Force, 0-6	Direction.	Force, 0-6		Readings of the H. Cup Anemometer, No. —	No. of hours in which it fell.	Amount in inches.	Velocity (0-6) and Direction.	Amount (0-10) and Species.	Velocity (0-6) and Direction.	Amount (0-10) and Species.					No. 3 inches.	No. 12 inches.	No. 22 inches.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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BAROMETER, “corrected Mean” at 32° A.M., minus the Correction for Temp. (Col. 2), = 29.943
Corrected Mean “of Barometer at 32° P.M., minus the Correction for Temp. (Col. 4), = 29.932
Mean at Station, corrected, and at 32°, = 29.860
Correction for height, 70 feet above Mean Sea-level, = 0.077
Mean, reduced to 32°, and Sea-level, = 29.937
Highest Reading, corrected for Index error, on the 21st, = 30.216
Lowest Do. Do., at 6.45 pm, on the 28th, = 29.464
Difference, or Monthly Range, = 0.752

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 23rd, = 78.2
Lowest in Month, corrected for Index errors, on the 29th, = 44.4
Difference, or Monthly Range, = 33.8
“Corrected Mean” of all the Highest, (Col. 5), = 65.5
“Corrected Mean” of all the Lowest, (Col. 6), = 52.8
Difference, or Mean Daily Range, = 12.7
** Calculated Mean Temperature of Month, = 59.7
S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 11th, =
“Corrected Mean,” (Col. 7), of Black Bulb, Max. in Sun, =
Lowest at Night, Black Bulb, (corrected for Index errors), on the 11th, =
“Corrected Mean,” (Col. 8), of Black Bulb, Min. on grass, =
Difference of above Means or Range (“exposed”), =
S.-R. Range on the 6th = 25.8

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 57.4
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 54.1
† Computed Temperature of Dew-Point, = 51.0
† Do. Elastic Force of Vapour, = 37.5
† Do. Weight of Vapour in a Cubic Foot of Air, = 4.19
† Relative Humidity, (Saturation = 100), = 80
RAIN fell on 13 Days; Amount in Inches, = 2.19

WIND.		SUMMARY.									
Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.
A.M.	1	6	3	1	3	13	1	3	1.56		
P.M.	2	3	2	1	7	13	3	1.55			
Mean.	1	4	2	1	5	13	1	3	1.46	2.19	2.13

** When two asterisks appear in Column 6, the lowest temperatures were registered during the day.

Observations made and
Return verified by

(Signed)

James Pollock & George Redpath.

August 12. Morning thick f.; t.s.s. in succession from 10 am. till 4 pm, accompanied by very heavy r. (with large hl. at 10.15 am.) and dense gloom (western sky greenish yellow) at 11.45 am. Renewal of t.s. at 9.30 pm. - Barometer very unsteady all day.

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Leith, County of Edinburgh, in Lat. 55° 59' N, Long. 3° 10' W, Distance from Sea half mile.

Height of Cistern of the Barometer above Mean Sea-level_____feet, above Ground_____feet.

During the MONTH of September 1884

The Hours of Observation are of Greenwich Time

*All the gas. Barometric observations in this schedule except those marked * were made with a Reaumur; all the 8.45 pm. and those marked * with a Fortin Standard, No. 733.*

[illegible]

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction (+)		=	29.928
for Temp. (Col. 9) =			
Corrected Mean " of Barometer at 9 A.M., minus the Correction (+)		=	29.919
for Temp. (Col. 4) =			
Mean at Station, corrected, and at 32°,		=	29.846
Correction for height, 70 feet above Mean Sea-level,.....		=	.077
Mean, reduced to 32°, and Sea-level,		=	29.923
Highest Reading, corrected for Index error, on the 13 th,.....		=	30.520
Lowest Do. Do. at 9.0 A.M. on the 7 th,.....		=	29.884
Difference, or Monthly Range,		=	1.233

S.-R. THERMOMETER, (in shade, etc.), **Highest in Month**, (corrected for Index Errors), on the 9th, = 66°.0

Lowest in Month, corrected for Index errors, on the 4th, = 43° 5

Difference, or **Monthly Range**, 230.5

"Corrected Mean" of all the Highest. (Col. 5). 50° 8

"Connected Mean" of all the T-ment (U-1, c)

Corrected Mean of all the Lowest, (Col. 6), = 44% 44

Difference, or **Mean Daily Range**, = $10^{\circ} 44'$

Calculated Mean Temperature of Month, = 54° 6

S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the th,..... =

"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun,.....

Lowest at Night, Black Bulb, (corrected for Index errors), on the th. ... =

"Connected Mean" (Vol. 8) of Black Bulk Mix

Factor	0.3	3.1	10	60	300
Corrected Mean, (C.H. 8), of Black Bull, Min. on grass,					

Difference of above Means or Range ("exposed"),

signatures were registered during the night, and the losses

HYGROMETER. Mean (corrected) A.M. and P.M. Reading of Dry

Bulb, (Cols. 9 and 11), = ~~54~~⁰.5 54.5

Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols.

10 and 12), = ~~51.3~~ 52.1

Computed **Temperature of Dew-Point**, = ~~48.0~~ 49.8

$$++ \text{ Do. Elastic Force of Vapour, } \dots\dots\dots 257 = \cancel{344} \cancel{403} \dots\dots$$

†† Do. Weight of Vapour in a Cubic Foot of Air, ... = 4.03 ~~4.12~~

†† Relative Humidity, (Saturation = 100), = ~~79~~ 81

IN fell on <u>20</u> Days: Amount in Inches	— 1.83
---------------------------------------------	--------

RECEIVED
JAN 10 1968

U.S. AIR FORCE
OFFICE OF THE SECRETARY
WASHINGTON, D.C.

MEMORANDUM FOR THE RECORD
SUBJECT: [Illegible]

[Illegible text follows]

WIND.		SUMMARY.									
Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.
A.M.			7	1	2	13	2	3	1.92		
P.M.	1		6	1	5	11	2	3	2.17		
Mean.	1	0	6	1	1	4	12	2	3	2.04	= 4.16

* Each instrument tested at the Office in Edinburgh bears the stamp "S.M.S.," and a number to be entered in the Heading; or the Number and Initials of the Maker may be here given.
 * Embracing corrections for both capillary and Index Errors.
 * The Diurnal Range for Scotland is as yet unknown.
 * *Tractically*, though not absolutely, a minus correction.
 * These "Hygrometric Deductions" are calculated (from Glaisher's Hygrometrical Tables, 2nd Edition, 1889).
 * While the Diurnal Range is unknown, the Arithmetic Mean of "Obs. 5 and 6" will be entered as the "Calculated Mean Temperature."
 * Any Observations not taken under the conditions specified in the Directions on the other side, or noted at the Top of each column, must be marked as such by the observer, in each Schedule. See over.

* Where an asterisk appears in columns 5 & 6, the highest temperatures were registered during the night, and the lowest during the day.

g. of Range on the 2nd = 18.0

(Signed) James Wolcott & George Chapman.

Observations made and
Return verified by

~~566~~
~~408~~

INSTRUCTIONS FOR TAKING METEOROLOGICAL OBSERVATIONS,

WITH REMARKS ON THE USE OF INSTRUMENTS.

One of the chief objects that the Society recommended that the Self-Registering Thermometers, and the Dry and Wet Bulb Hygrometers, be kept in Stevenson's Log-house, Box for the Thermometers, painted white inside and outside, and the Thermometers secured to four stout posts, also painted white, firmly fixed in the ground. The posts must be of such a length that when the Thermometers are hung in position the Bulbs of the Minimum Thermometer, and of the Dry and Wet Bulb Thermometers will be exactly at the same height of four feet above the ground, the Maximum Thermometer being hung in a net below the Minimum Thermometer. The Thermometer Box is to be placed over a plot of grass, and in a free open space to which the sun's rays have free access during as much of the day as surrounding conditions enable the Observer to secure. The Thermometers are suspended on cross laths in the centre of the Box, and face the door, which should open to the north. The Council regard the question of EXPOSURE OF THERMOMETERS, as vital in every system of Meteorological Observation, since without it Observations made at different Stations are incompatible, thus rendering it impossible to compare the Climates of places with each other as regards their most important features.

Professor Phillips, and Negretti and Zambra's Maximum Thermometers, and Katherson's Minimum Thermometer are recommended. It is recommended that these Thermometers be graduated on the glass stem. The Minimum Thermometer is liable to two demerits—viz, the column of spirit breaking, and part of the spirit distilling by high temperature and lodging at the top of the tube. This demerit is of occasional occurrence with Protected Thermometers, but of frequent occurrence with exposed Thermometers. Hence a systematic examination of Minimum Thermometers ought to be a regular part of the work carried on by each Observer.

Fortunately, Spirit Thermometers may be easily set right by any one, when the column of spirit chances to separate. Let the thermometer be taken in the hand by the end farthest from the bulb, raised above the head, and then briefly swung down towards the feet; the object being, on the principle of centrifugal force, to send down the detached portion of spirit till it unites with the column. A few blows or swinging strokes will generally be sufficient for the purpose; after which the thermometer should be placed in a slanting position, to allow the rest of the spirit to adhere to the sides of the tube to form a continuous column. But after a trial of this method, it will be adopted, if the portion of spirit in the top of the tube will not fall. Heat should be applied to the neck of the thermometer, and the heat where the detached portion of spirit is, which being taken into vapor by the heat, will condense the surface of the broken column of spirit. Care must be taken that the bulb is not applied too thickly; for if this be done the tube will break and the instrument be spoiled. The best way to apply the requisite amount of heat is by holding the end of the tube slowly towards a minute flame from a gas-burner; or, if gas be not at hand, a piece of heated metal will serve as well.

The bulbs of the Thermometers for registering the greatest heat from the sun's rays, and the least from radiation during night, have a black coating, which may easily be made, or mended, by the application of a mixture of lampblack and printer's ink. They are placed in shallow blackened boxes, whose sides protect the bulbs from the wind. The Maximum should be freely exposed to the sun, and the Minimum should rest on wooden supports, four inches from the surface of the grass in an open situation. Snow must not be allowed to cover either of these Thermometers; nor the sun's heat to affect the Minimum Thermometer by dissipation. Black-balls enclosed in 'glass jackets' may also be used, being indeed preferable to the above. It must, however, be added, that the whole subject of the observation of Solar and Terrestrial Radiation is not yet in a sufficiently advanced state to warrant the exclusive recommendation of any one of these methods.

The Hygrometer in use at the Society's Stations consists of two Dry and Wet Bulb on one frame. As apparently slight deviations from the approved form of this apparatus seriously vitiate the Hygrometrical Observations, Observers are specially requested to attend to the following conditions:—The bulbs must hang down by at least an inch free from the scales and frame to which they are attached; the frame must be such as will bring the tubes forward by an inch from any board on which it may be suspended; the water-cap must be covered, and altogether placed to the side, and a little below the level of the wet bulb, but in no case under the bulb; the muslin must be of medium fineness, and fastened at the neck of the bulb by the cotton, which also supplies it with water. It must be seen to by the Observer that the muslin is always clean and moist, and the water pure. In frosty weather, observation is a matter of much delicacy, and must be made with great care. The bulb must be moistened by immersion from 15 to 30 minutes before the hour of observation. From the film of ice thus formed evaporation will proceed as from the moist cloth in ordinary circumstances.

In reading the Thermometer great care must be taken to bring the eye exactly opposite the top of the bulb or column of mercury. And reading Originals. The Thermometer to read of a leg 39.9, 40.0, or 40.1; or again 40.4, 40.5, 40.6, which as it indicates a little under an exact graduation with a, or a little over 40° or 40.5° respectively. So also 40.7, 40.8, or 40.9, or 41.0, or 41.1, or 41.2, or 41.3, or 41.4, or 41.5, or 41.6, or 41.7, or 41.8, or 41.9, or 42.0, or 42.1, or 42.2, or 42.3, or 42.4, or 42.5, or 42.6, or 42.7, or 42.8, or 42.9, or 43.0, or 43.1, or 43.2, or 43.3, or 43.4, or 43.5, or 43.6, or 43.7, or 43.8, or 43.9, or 44.0, or 44.1, or 44.2, or 44.3, or 44.4, or 44.5, or 44.6, or 44.7, or 44.8, or 44.9, or 45.0, or 45.1, or 45.2, or 45.3, or 45.4, or 45.5, or 45.6, or 45.7, or 45.8, or 45.9, or 46.0, or 46.1, or 46.2, or 46.3, or 46.4, or 46.5, or 46.6, or 46.7, or 46.8, or 46.9, or 47.0, or 47.1, or 47.2, or 47.3, or 47.4, or 47.5, or 47.6, or 47.7, or 47.8, or 47.9, or 48.0, or 48.1, or 48.2, or 48.3, or 48.4, or 48.5, or 48.6, or 48.7, or 48.8, or 48.9, or 49.0, or 49.1, or 49.2, or 49.3, or 49.4, or 49.5, or 49.6, or 49.7, or 49.8, or 49.9, or 50.0, or 50.1, or 50.2, or 50.3, or 50.4, or 50.5, or 50.6, or 50.7, or 50.8, or 50.9, or 51.0, or 51.1, or 51.2, or 51.3, or 51.4, or 51.5, or 51.6, or 51.7, 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SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Leith, County of Edinburgh, in Lat 55°59'N, Long 3°10'W, Distance from Sea half mile.
Height of Cistern of the Barometer above Mean Sea-level feet, above Ground feet. During the MONTH of October 1884.

The Hours of Observation are of Greenwich Time.
*All the 9 am. Barometric observations in this Schedule except those marked * were made with a Bar Marine; all the 8.45 pm. and those marked * with a Fortin Standard, 723.*

ELECTRICITY.	Days of Month.	BAROMETER.		SELF-REGISTERING THERMOMETERS.		HYGROMETER.		WIND.				RAIN.	CLOUDS.		THERMOMETERS under Ground.			SEA.	OZONE.	GENERAL REMARKS.	Days of Month.		
		at 32° and Sea-level.		Read Daily, at 9 P.M.		No. 32647/8.		9 h. A.M.		9 h. P.M.			9 A.M.		9 P.M.		9 h. A.M.						
		Barometer. No.	Attached Thermometer.	Max. No.	Min. No.	Dry bulb.	Wet bulb.	Direction.	Force.	Direction.	Force.		Velocity (0-10) and Direction.	Amount (0-10) and Species.	Velocity (0-10) and Direction.	Amount (0-10) and Species.	No. 3 inches.					No. 12 inches.	No. 22 inches.
		inches.	°																				
	1	29.764	30.020	* 55.2	46.0	49.7	46.0	48.0	44.4	W	3.0	W	1.5	0.04	2.5W 2.0W 2.7W 9.3W 2.0W 2.0W					Fine, sunny.	1		
	2	29.900	29.593	60.0	45.7	54.2	50.3	56.1	54.1	SW	2.0	WSW	2.5	0.3	2.5W 3.0W 2.5W 10.0W 2.5W 2.5W					Dull & cloudy, sunny inter, after 2.30 pm chs. 9 pm. 2.30 pm.	2		
	3	29.818	30.141	* 57.2	45.9	49.3	45.3	46.1	42.2	W	3.0	W	2.5	1.4	0 0 0 0 0 0					Fine, sunny.	3		
	4	30.459	30.628	56.6	43.3	48.9	44.6	52.0	49.0	W	2.0	W	1.5	0.0	2.5W 3.0W 2.5W 10.0W 2.5W 2.5W					Fine, sunny, rather hazy, day sunny, exp. cloudy.	4		
*	5	30.726	30.724	56.0	47.1	53.5	48.9	47.1	46.3	W	1.0	W	0.0	0.0	0.5W 3.0W 2.5W 10.0W 2.5W 2.5W					Very fine, sunny, almost cloudless; heavy dr. at 9 pm.	5		
	6	30.647	30.505	53.0	43.1	45.9	45.1	48.0	47.2	W	1.5	W	0.5	0.0	1.0W 1.0W 1.0W 1.0W 1.0W 1.0W					Very hazy, 11 am, then mostly sunny; some dr.	6		
	7	30.352	30.062	51.2	45.6	50.0	48.3	48.5	48.0	E	1.5	W	0.0	0.0	1.5W 1.0W 1.0W 1.0W 1.0W 1.0W					Cloudy, after 1 pm, sunny; morning & evening hazy.	7		
	8	29.667	29.468	52.2	42.6	51.3	49.4	43.0	41.3	S	1.5	SW	0.5	1.7	2.5W 1.0W 1.0W 1.0W 1.0W 1.0W					Drizzle, almost constant, r. from 10 am till 8.30 pm.	8		
	9	29.491	29.569	48.2	39.9	43.0	41.1	45.0	43.1	W	1.5	W	2.0	3.0	2.5W 1.0W 1.0W 1.0W 1.0W 1.0W					Cloudy till 10.30 am, then sunny; after 4.45 pm. dr. 10.30 am.	9		
	10	29.583	29.688	* 46.1	38.3	41.8	37.6	39.1	34.6	W	3.0	W	2.5	1.4	2.5W 1.0W 1.0W 1.0W 1.0W 1.0W					Cloudy, const. r. between 10.45 am & 1 pm; 9 pm. dr.	10		
	11	29.639	29.776	49.0	33.3	42.7	38.1	46.0	42.3	W	2.5	W	3.5	1.0	2.5W 1.0W 1.0W 1.0W 1.0W 1.0W					Cloudy, exp. at 4.30 am and heavy r. chs. after 5.30 pm.	11		
*	12	29.953	30.064	48.2	41.1	43.4	38.9	42.1	38.9	W	3.0	W	2.5	0.0	2.5W 1.0W 1.0W 1.0W 1.0W 1.0W					Fine; am, clear, sunny; pm, rather cloudy.	12		
	13	30.029	29.936	48.0	38.8	43.7	40.3	46.1	44.2	W	2.5	W	2.5	0.1	2.5W 1.0W 1.0W 1.0W 1.0W 1.0W					Dull and hazy; li. chs. afternoon.	13		
	14	29.995	30.118	54.4	45.3	50.6	47.9	46.0	43.5	W	1.5	W	2.0	0.0	2.5W 1.0W 1.0W 1.0W 1.0W 1.0W					Dull, rather hazy; sunny after 11.30 am.	14		
	15	29.965	30.096	58.7	45.2	56.0	53.5	49.8	47.0	W	2.5	W	2.3	0.7	2.5W 1.0W 1.0W 1.0W 1.0W 1.0W					Exp. sky from 2 hills; am, day rather cloudy; sunny inter.	15		
	16	30.157	30.077	57.3	43.5	50.2	48.8	55.9	53.2	W	2.5	W	3.4	0.0	2.5W 1.0W 1.0W 1.0W 1.0W 1.0W					Cloudy, dull & damp; sunny inter. after 2 pm; exp. equally.	16		
	17	30.098	30.155	56.9	51.4	54.6	51.8	54.9	52.1	W	4.0	W	3.4	0.0	2.5W 1.0W 1.0W 1.0W 1.0W 1.0W					Cloudy; fine.	17		
	18	30.244	30.177	57.3	51.1	53.7	50.9	54.9	52.2	W	2.5	W	1.5	0.0	2.5W 1.0W 1.0W 1.0W 1.0W 1.0W					Fine, cloudy; sunny intervals.	18		
*	19	30.171	30.204	* 56.0	46.1	49.7	45.3	47.7	45.1	W	2.5	W	2.5	0.0	2.5W 1.0W 1.0W 1.0W 1.0W 1.0W					Fine; sunny till about 2.30 pm, then cloudy.	19		
	20	30.251	30.259	54.9	45.3	48.6	46.2	51.3	49.8	W	2.0	W	2.5	0.0	2.5W 1.0W 1.0W 1.0W 1.0W 1.0W					Fine.	20		
	21	30.221	30.164	58.0	50.8	53.7	50.6	51.9	48.0	W	2.5	W	1.5	0.0	2.5W 1.0W 1.0W 1.0W 1.0W 1.0W					Fine, cloudy; sunny intervals during afternoon.	21		
	22	30.147	30.037	55.1	44.0	52.5	49.3	44.0	43.0	SW	2.0	W	0.5	0.0	2.5W 1.0W 1.0W 1.0W 1.0W 1.0W					Cloudy; slight showers about noon.	22		
	23	29.930	29.855	54.3	42.9	47.8	45.1	48.0	45.3	S	1.5	SW	2.5	0.0	2.5W 1.0W 1.0W 1.0W 1.0W 1.0W					Fine; mostly sunny.	23		
	24	29.917	30.013	53.0	45.9	48.1	46.5	48.3	47.0	SW	1.5	W	1.5	0.0	2.5W 1.0W 1.0W 1.0W 1.0W 1.0W					Cloudy; rather hazy; slight drizzle after 6 pm.	24		
	25	29.825	29.283	56.3	42.7	48.5	45.0	56.3	53.0	SW	3.0	SW	3.4	0.1	2.5W 1.0W 1.0W 1.0W 1.0W 1.0W					Cloudy; very equally; chs. after 4.30 pm.	25		
*	26	29.203	29.312	* 57.2	38.6	44.2	41.4	39.7	36.4	W	1.5	W	3.5	1.7	2.5W 1.0W 1.0W 1.0W 1.0W 1.0W					Squally; variable; frequent chs. of r. and dr.	26		
	27	29.608	29.239	45.0	36.7	40.5	37.4	43.7	41.9	W	2.5	SW	1.2	0.1	0 0 0 0 0 0					Sunny till about 2.30 pm, then cloudy, showering.	27		
	28	29.976	29.637	47.8	37.1	47.0	44.6	37.1	34.5	W	4.0	W	2.0	0.0	2.5W 1.0W 1.0W 1.0W 1.0W 1.0W					Heavy sqs. with li. chs. early morning; day mostly sunny.	28		
	29	29.781	29.845	48.0	34.4	40.8	38.8	43.0	41.1	W	2.5	W	2.5	0.9	2.5W 1.0W 1.0W 1.0W 1.0W 1.0W					Fine, except chs. bet 5 and 7 am, and after 4 pm.	29		
	30	29.849	29.729	59.0	42.4	48.4	45.1	58.8	54.0	SW	2.5	W	2.5	0.2	2.5W 1.0W 1.0W 1.0W 1.0W 1.0W					Dull and showering; evening squally.	30		
	31	29.748	29.827	* 59.2	54.9	58.2	53.7	54.9	52.8	SW	3.0	SW	3.0	0.4	2.5W 1.0W 1.0W 1.0W 1.0W 1.0W					Squally; showering with sunny intervals.	31		
Sums.		928.114	928.201	1669.3	1443	1510.5	1493.2	1514	1613	1610	148	6	8	7	151.34								
Means.																							
† Total Corrections for Instrumental Errors.																							
‡ Corrections for Diurnal Range.																							
“Cor. rected Means.”		29.939	29.942	53.8	43.5	48.7	45.6	48.2	45.7					1.34									
No. of Column.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		

BAROMETER, “corrected Mean” at 9 A.M., minus the Correction for Temp. (Col. 2), = 29.939
Corrected Mean “of Barometer at 8.45 P.M., minus the Correction for Temp. (Col. 4), = 29.942
Mean at Station, corrected, and at 32° = 29.863
Correction for height, 70 feet above Mean Sea-level, = 0.77
Mean, reduced to 32°, and Sea-level, = 29.940
Highest Reading, corrected for Index error, on the 5 th, = 30.726 726
Lowest Do. Do., at 9.30 am, on the 28 th, = 28.985 976
Difference, or Monthly Range, = 1.881 750

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 22nd = 60° 0
Lowest in Month, corrected for Index errors, on the 11 th, = 33° 3
Difference, or Monthly Range, = 26° 7
“Corrected Mean” of all the Highest, (Col. 5), = 53° 8
“Corrected Mean” of all the Lowest, (Col. 6), = 43° 5
Difference, or Mean Daily Range, = 10° 3
* Calculated Mean Temperature of Month, = 48° 6
S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the th, =
“Corrected Mean,” (Col. 7), of Black Bulb, Max. in Sun, =
Lowest at Night, Black Bulb, (corrected for Index errors), on the th, =
“Corrected Mean,” (Col. 8), of Black Bulb, Min. on grass, =
Difference of above Means or Range (“exposed”), =

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 48° 4
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 45° 6
† Computed Temperature of Dew-Point, = 42° 6
† Do. Elastic Force of Vapour, = 2.273
† Do. Weight of Vapour in a Cubic Foot of Air, = 3.14
† Relative Humidity, (Saturation = 100), = 81
RAIN fell on 16 Days; Amount in Inches, = 1.34

WIND.		SUMMARY.									
Direction.		N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.
A.M.	2	1				4	3	21			234
P.M.	2	1				1	4	16	4	3	240
Mean.	2	1	0	0	2	4	18	2	2		237

* Each instrument tested at the Office in Edinburgh bears the stamp “S.M.S.,” and a number to be entered in the Heading; or the Number and Initials of the Maker may be here given.
† The Diurnal Range for Scotland is as yet unknown.
‡ These “Hygrometric Deductions” are calculated from Glaisher’s Hygrometric Tables, 2nd Edition.
§ While the Diurnal Range is unknown, the Arithmetic Mean of Cols. 5 and 6 will be entered as the “Calculated Mean Temperature.”
|| Any Observations not taken under the conditions specified in the Directions on the other side, or noted at the Top of each column, must be marked as such by the observer, in each Schedule. See over.

When an asterisk appears in columns 5 and 6, the highest temperatures were registered during the night, and the lowest during the day.
Temperature falling quickly at 9 pm. on 22nd and 28th, the minimum reading 44.4 and 37.0 respectively.
L. S. Range on the 26th = 18.6
Observations made and Return verified by { James Colman, & George Redpath. H. R.

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at

Leith

County of

Edinburgh

in Lat

55°59'N

Long

3°10'W

Distance from Sea

half

miles

Height of Cistern of the Barometer above Mean Sea-level

feet, above Ground

feet.

During the MONTH of

November

1884

The Hours of Observation are of Greenwich Time.

All the given Barometric Observations in this Schedule except those marked * were made with a Fortin Standard No. 733.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS.				HYGROMETER.				WIND.				RAIN.		CLOUDS.				THERMOMETERS under Ground.				SEA.		OZONE.		GENERAL REMARKS.	Days of Month.																																																																																																																																																																																																																																																																																																																																																																																																												
		at 32° and Sea-level.		8.45 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.		9 h. A.M.		9 h. P.M.		Readings of the H. Cup Anemometer.		9 A.M.		9 P.M.		9 h. A.M.		Temperature of Air and Surface of Water.		Temperature of Air and Surface of Water.																																																																																																																																																																																																																																																																																																																																																																																																																	
		Barometer.	Attached Thermometer.	Barometer.	Attached Thermometer.	Max. No.	Min. No.	Max. No.	Min. No.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	Direction.	Force.	Direction.	Force.	No.	Amount in inches.	Velocity (0-10) and Direction.	Amount (0-10) and Species.	Velocity (0-10) and Direction.	Amount (0-10) and Species.	No.	Amount in inches.	Velocity (0-10) and Direction.	Amount (0-10) and Species.	No.	Amount in inches.	Velocity (0-10) and Direction.	Amount (0-10) and Species.			No.	Amount in inches.	Velocity (0-10) and Direction.	Amount (0-10) and Species.	No.	Amount in inches.	Velocity (0-10) and Direction.	Amount (0-10) and Species.	No.	Amount in inches.	Velocity (0-10) and Direction.	Amount (0-10) and Species.	No.	Amount in inches.	Velocity (0-10) and Direction.	Amount (0-10) and Species.	No.	Amount in inches.	Velocity (0-10) and Direction.	Amount (0-10) and Species.	No.	Amount in inches.	Velocity (0-10) and Direction.	Amount (0-10) and Species.	No.	Amount in inches.	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BAROMETER, "corrected Mean" at 9 A.M., $\frac{15.166}{30.073} = 30.073$
for Temp. (Col. 2),
Corrected Mean" of Barometer at P.M., $\frac{14.140}{30.093} = 30.093$
for Temp. (Col. 4),
Mean at Station, corrected, and at 32° = 30.006
Correction for height, 70 feet above Mean Sea-level, = 0.077
Mean, reduced to 32°, and Sea-level, = 30.083
Highest Reading, corrected for Index error, on the 18th, = 30.638
Lowest Do. Do. at 9 p.m. on the 4th, = 29.239
Difference, or Monthly Range, $1.414 = 1.414$

S.-R. THERMOMETER, (in shade, &c.), Highest in Month, (corrected for Index Errors), on the 1st, = 58° 1
Lowest in Month, corrected for Index errors, on the 30th, = 25° 0
Difference, or Monthly Range, = 33° 1
"Corrected Mean" of all the Highest, (Col. 5), = 47° 2
"Corrected Mean" of all the Lowest, (Col. 6), = 38° 1
Difference, or Mean Daily Range, = 9° 1
** Calculated Mean Temperature of Month, = 42° 6
S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the th, =
"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, =
Lowest at Night, Black Bulb, (corrected for Index errors), on the th, =
"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, =
Difference of above Means or Range ("exposed"), = 16° 1
Range on the 7th = 16° 1

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 41.6
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 39.8
† Computed Temperature of Dew-Point, = 36.1
† Do. Elastic Force of Vapour, = 2.6
† Do. Weight of Vapour in a Cubic Foot of Air, = 2.50
† Relative Humidity, (Saturation = 100), = 87.83
RAIN fell on 16 Days; Amount in Inches, = 1.63

WIND.		SUMMARY.									
Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.
A.M.	2				1	7	3	16	1	1.87	
P.M.	3				1	1	4	15	3	1.90	
Month.	3	0	0	1	4	4	15	2	1	1.88	3.53

When an asterisk appears in columns 5 and 6, the highest temperatures were registered during the night, and the lowest during the day.
Minimum thermometer at 9 p.m. on 21st, 38° 9; and at 9 a.m. on 30th, 25° 2, but 25 deg. was reached a few minutes later, after 2 p.m. at 9.15 a.m. 26°, at 9.30 a.m. 27°.

Observations made and
Return verified by

(Signed) James Colman & George Redpath

15.04
15.09
15.14
15.19
15.24
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SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Leith, County of Edinburgh, in Lat. 55° 59' N, Long 3° 10' W, Distance from Sea half miles.

Height of Cistern of the Barometer above Mean Sea-level_____feet, above Ground_____feet.

During the MONTH of December 1884

The Hours of Observation are of Greenwich Time

*All the 9am. Barometric Observations in this Schedule except those marked * were made with a Kent Marine; all the 8.40 pm. and those marked * with a Fortin Standard No. 733.*

[illegible]

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction (+) for Temp. (Col. 3).....	=	29.6634
Corrected Mean " of Barometer at ^{8.45} A.M., minus the Correction (+) for Temp. (Col. 3).....	=	29.701
Mean at Station, corrected, and at 32°,.....	=	29.605
Correction for height, ⁷⁰ feet above Mean Sea-level,.....	=	.077
Mean, reduced to 32°, and Sea-level,.....	=	29.682
Highest Reading, corrected for Index error, on the ^{at 12.10 pm} 22nd.....	=	30.340
Lowest Do. Do. at 12.10 pm on the 3 rd	=	28.875
Difference, or Monthly Range,	=	1.465

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for	
Index Errors), on the <u>14</u> th,	= <u>54° 2</u>
Lowest in Month, corrected for Index errors, on the <u>10</u> th,	= <u>27° 0</u>
Difference, or Monthly Range,	= <u>27° 2</u>
"Corrected Mean " of all the Highest, (Col. 5),	= <u>43° 1</u>
"Corrected Mean " of all the Lowest, (Col. 6),	= <u>34° 2</u>
Difference, or Mean Daily Range,	= <u>8° 9</u>
** Calculated Mean Temperature of Month,	= <u>38° 7</u>

S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for	
Index Errors), on the	th,..... =
“Corrected Mean ,” (Col. 7), of Black Bulb, Max. in Sun ,.....	=
Lowest at Night , Black Bulb, (corrected for Index errors), on the	th, ... =
“Corrected Mean ,” (Col. 8), of Black Bulb, Min. on grass,	=
Difference of above Means or Range (“exposed”),	=

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11),	=	<u>38.6</u>	38.7
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12),	=	<u>36.9</u>	37.0
‡ Computed Temperature of Dew-Point ,	=	<u>34.6</u>	34.7
‡ Do. Elastic Force of Vapour ,	=	<u>0.680</u>	.202
‡ Do. Weight of Vapour in a Cubic Foot of Air , ...	=	<u>7</u>	2.33
‡ Relative Humidity , (Saturation = 100),	=	<u>84</u>	86
RAIN fell on / 8 Days; Amount in Inches,	=	<u>3.44</u>	

WIND.				SUMMARY.							
Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.
A.M.	1			4	6	2	15	3		2.08	
P.M.			2	1		4	18	3	22	2.13	
Mean.	1	0	1	2	3	3	16	3	2	2.10	= 4.4

* Where an asterisk appears in columns 5 and 6 the highest temperature for the 24 hours were registered during the night, and the lowest during the day.

Observations made and
Return verified by

(Signed) James Polam & George Redpath.

