

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *Barone Cottage, Dalrymple, County of Dumbarton*, in Lat. *55° 49' 50"*, Long. *5° 45'*, Distance from Sea *10* miles.
Height of Cistern of the Barometer above Mean Sea-level *116* feet, above Ground *3* feet. During the MONTH of *January* 188*8*.
The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				RAIN.		WIND.				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.		
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		Dry No. —		Wet No. —		9 h. A.M.		9 h. P.M.		Readings of the H. Cup Anemometer.		9 A.M.		P.M.		9 h. A.M.									
		Barometer.	Attached Ther- mometer	Barometer.	Attached Ther- mometer	Max. No.	Min. No.	Max. No.	Min. No.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	No. of hours in which it fell.	No.	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.							
		* 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.
		inches.	°	inches.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°						°	°
	1	29.470	39	29.214	38	38	32.5			36.3	36	32.8	30	185	SSW	5	SE	5			10									Dull & chilly	1		
	2	29.490	38	29.230	39	39	33.0			30.3	29.3	38.8	37.3		NE	5	SW	5			10									& Rain	2		
	3	29.560	41	29.520	42	42	33.5			40	37.5	44	43	370	SW	5	S	2			5									Do. pm	3		
	4	29.324	45	29.354	45	45	33.8			48	47	42	41	495	S	2	S	1.5			10									Dull stormy wet	4		
	5	29.354	45	29.680	45	44	33.7			42	41.5	37	235.5	173	SSW	5	calm				10									" & wet	5		
	6	29.730	45	29.808	47	50	35.4			43.5	42	46.8	45	010	SSW	1	SSW	5			10									" & damp	6		
	7	29.996	47	30.048	50	50.5	34.8			45.8	44.5	49.4	48.5	045	WSW	5	SW	5			2									" & damp	7		
	8	30.190	50	30.390	51	50.8	34.3			50	49	49.4	48.5		SW	1	SW	5			10									" & mild	8		
	9	30.464	51	30.544	50	54.5	34.5			43	42.5	42	43	002	NE	5	calm				2									" & clear fine	9		
	10	30.520	50	30.520	49	49.5	34.5			45.5	45.2	44	43		SSW	5	SW	5			10									Dull heavy mild	10		
	11	30.520	48	30.496	47	45.6	34.5			42.5	42.5	41	40.5		SSW	5	SE	5			10									" & fine	11		
	12	30.490	46	30.526	45	42.2	34.7			38	37.5	38.8	37.6		N	5	calm				10									" & "	12		
	13	30.576	45	30.600	46	47.3	33.5			41.3	41	41.5	40.2		E	5	E	5			9									" & "chilly"	13		
	14	30.594	45	30.584	45	43	33.2			41.5	40.3	38.5	37		E	5	E	1			10									" & "chilly"	14		
	15	30.570	42	30.570	42	42.6	33			38.5	37	38.5	36.5		NE	1	E	5			10									" & "	15		
	16	30.534	42	30.510	40	41.3	36.2			38	35.8	36.4	34.2		E	1	E	1			10									" & "	16		
	17	30.524	39	30.530	40	38.8	32			33.2	31	36	34		NE	5	E	5			2									" & cold	17		
	18	30.540	40	30.548	39	41.5	33			34	32	33	31.5		ENE	1	E	5			1									" & clear heavy frosty	18		
	19	30.480	39	30.360	38	36	30			32.2	30.5	34.5	33		ESE	5	calm				10									" & Damp	19		
	20	30.270	40	30.130	46	42.8	34.8			38.4	37.5	42.2	41.2		SSW	5	S	5			10									" & Damp	20		
	21	29.740	45	29.604	50	48	42			47	46.6	46.5	46.2		WSW	5	WNW	1			10									" & Damp	21		
	22	29.784	48	29.954	48	48	42.5			44.5	44	44	45.3		010	W	5	W	5			8								" & Damp	22		
	23	30.112	49	30.112	51	50.3	42.3			46	44	47	45.5		150	W	5	SW	1			5								" & fine — change?	23		
	24	30.112	52	30.024	52	50.5	45.6			46.2	45.5	50	49		420	WSW	5	SW	5			10								" & Dull, heavy, heavy wet	24		
	25	29.850	51	29.446	48	51.2	39.8			49	48	40.5	38.7		330	SW	1	SW	1.2			10								" & clear heavy shower	25		
	26	29.882	42	30.190	43	44.5	35.3			39	37.2	35.5	33.5		090	WNW	2.5	N	1			8								" & "stormy"	26		
	27	30.080	41	30.080	39	41	37.8			36	34.2	28.2	25.5		NW	8	N	1			9									" & "clear cold"	27		
	28	30.060	36	30.014	36	42	25.5			26.5	25	28	26		E	5	E	5												" & clear & frosty	28		
	29	30.054	34	30.030	37	45.5	24.5			31	29.5	32	32		040	NE	5	calm												" & clear fine	29		
	30	29.874	38	29.510	42	42	31.5			34	33	40.3	40		110	W	5	SW	7			8								" & changeable	30		
	31	29.214	39	29.700	40	41.5	33			35.5	32.5	37.6	34.5		285	W	5	E	5			8								" & Dull, stormy, clear, snow	31		
Sums.		15175	14	1282	14	1210	1311			281	91	169	137		3375						237												
Means.		30.048	43.6	30.061	44.2	45.1	36.7			30.9	38.7	46.0	38.6		0.71						7.6												
† Total Corrections for Instrumental Errors.																																	
‡ Corrections for Diurnal Range.																																	
"Corrected Means."																																	
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†† = *30.007*
for Temp. (Col. 2), = *30.048*. - .041. }
Corrected Mean of Barometer at 9 A.M., minus the Correction†† = *30.019*
for Temp. (Col. 4), = *30.061*. - .042. }
Mean at Station, corrected, and at 32°, = *30.013*
Correction for height, *116* feet above Mean Sea-level, = *.127*
Mean, reduced to 32°, and Sea-level, = *30.140*
Highest Reading, corrected for Index error, on the *13* th, = *13.600*
Lowest Do. Do., on the *2nd*, = *28.990*
Difference, or Monthly Range, = *1.610*

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the *9* th, = *54.5*
Lowest in Month, corrected for Index errors, on the *29* th, = *24.5*
Difference, or Monthly Range, = *30.0*
"Corrected Mean" of all the Highest, (Col. 5), = *45.1*
"Corrected Mean" of all the Lowest, (Col. 6), = *36.7*
Difference, or Mean Daily Range, = *8.4*
** Calculated Mean Temperature of Month, = *40.9*
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), = *40.0*
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = *38.8*
†† Computed Temperature of Dew-Point, = *36.48*
†† Do. Elastic Force of Vapour, = *245.220*
†† Do. Weight of Vapour in a Cubic Foot of Air, =
†† Relative Humidity, (Saturation = 100), = *86.90*
RAIN fell on *17* Days; Amount in Inches, = *3.37*

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	5	6	0	7	3	5	3	0	0.71				
P.M.	2	0	8	2	4	7	3	0	5	0.66				
Mean.	2	2	7	1	6	5	4	2	2	0.69				

Observations made and
Return verified by

James Kay

(Signed)

James Kay

J.K.
J.K.

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Barone Cottage, County of Bute, in Lat. 55° 49' 50" Long. 5° 4' 5", Distance from Sea 10 miles.
Height of Cistern of the Barometer above Mean Sea-level 116 feet, above Ground 3 feet. During the MONTH of February 1888.
The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				RAIN.		WIND.				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.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.		No. of hours in which it fell.	Amount in inches.	9 h. A.M.		9 h. P.M.		Readings of the H. Cup Anemometer. No. _____ 9 h. A.M.	9 A.M.		P.M.		SUNSHINE. Hours.	9 h. A.M.							Temperature of WELL, at depth of feet, No. _____ Temperature at 1 fathom, and Depth, _____	0—10. 9 A.M. 9 P.M.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
		Barometer. * No. _____	Attach- ed Ther- mometer	Barometer. No. _____	Attach- ed Ther- mometer	Max. No. _____	Min. No. _____	Max. in Sunrays No. _____	Min. on Grass. No. _____	Dry bulb. _____	Wet bulb. _____	Dry bulb. _____	Wet bulb. _____			Direction.	Force.	Direction.	Force.		Velocity (0—6), and Species.	Amount (0—10), and Species.	Velocity (0—6), and Direc- tion.	Amount (0—10), and Species.		No. 3 inches.	No. 12 inches.								No. 22 inches.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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BAROMETER, "corrected Mean" at 9 A.M., minus the Correction++ = 29.959
for Temp. (Col. 2), = 29.988 - 0.029 }
Corrected Mean" of Barometer at 9 P.M., minus the Correction++ = 29.961
for Temp. (Col. 4), = 29.993 - 0.032 }
Mean at Station, corrected, and at 32°, = 29.960
Correction for height, 116 feet above Mean Sea-level, = 1.27
Mean, reduced to 32°, and Sea-level, = 30.087
Highest Reading, corrected for Index error, on the 28 th, = 30.500
Lowest Do. Do., on the 11 th, = 29.284
Difference, or Monthly Range, = 1.216

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 6 th, = 49.3
Lowest in Month, corrected for Index errors, on the 16 th, = 20.0
Difference, or Monthly Range, = 29.3
"Corrected Mean" of all the Highest, (Col. 5), = 42.8
"Corrected Mean" of all the Lowest, (Col. 6), = 32.6
Difference, or Mean Daily Range, = 10.2
** Calculated Mean Temperature of Month, = 37.7
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), = 35.9
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 34.6
Computed Temperature of Dew-Point, = 32.7
Do. Elastic Force of Vapour, = 1.87
Do. Weight of Vapour in a Cubic Foot of Air, =
Relative Humidity, (Saturation = 100), = 88
RAIN fell on 14 days; Amount in Inches, = 1.41

WIND.												SUMMARY.		
Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.			
A.M.	5	4	4	0	0	2	6	6	2	0.63				
P.M.	4	4	4	0	2	1	3	8	3	0.78				
Mean.	5	4	4	0	1	1	5	7	2	0.71	0.50			

Observations made and
Return verified by

James May

(Signed)

James May

M.A.

J.P.

* 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 given.
† Embracing 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 Artificial 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.

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Baron's Cottage, Ruthven, Perth, in Lat. 55° 49' 50" Long. 5° 4' 5", Distance from Sea 10 miles.

Height of Cistern of the Barometer above Mean Sea-level 116 feet, above Ground 3 feet.

During the MONTH of March 1888.

The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				RAIN.		WIND.				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.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulb, in Sun or on Grass.		9 h. A.M.		9 h. P.M.		No. of hours in which it fell.	Amount in inches.	9 h. A.M.		9 h. P.M.		9 h. A.M.	P.M.	SUNSHINE. Hours.	9 h. A.M.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
		Barometer. * No.	Attached Thermometer	Barometer. No.	Attached Thermometer	Max. No.	Min. No.	Max. in Sun or on Grass. No.	Min. on Grass. No.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.			Direction.	Force.	Direction.	Force.				Velocity (0-6), and Species.	Amount (0-10), and Species.	Velocity (0-6), and Species.	Amount (0-10), and Species.						No. 1 inches.	No. 2 inches.	No. 3 inches.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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BAROMETER, "corrected Mean" at 9 A.M., minus the Correction†† for Temp. (Col. 2), = 29.556 - 0.030 = 29.526

Corrected Mean of Barometer at 9 P.M., minus the Correction†† for Temp. (Col. 4), = 29.557 - 0.031 = 29.526

Mean at Station, corrected, and at 32°, = 29.526

Correction for height, 116 feet above Mean Sea-level, = 0.127

Mean, reduced to 32°, and Sea-level, = 29.653

Highest Reading, corrected for Index error, on the 1st, = 30.420

Lowest Do. Do., on the 28th, = 28.810

Difference, or Monthly Range, = 1.610

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 8th, = 53.2

Lowest in Month, corrected for Index errors, on the 17th, = 22.5

Difference, or Monthly Range, = 30.7

"Corrected Mean" of all the Highest, (Col. 5), = 43.8

"Corrected Mean" of all the Lowest, (Col. 6), = 31.6

Difference, or Mean Daily Range, = 12.2

** Calculated Mean Temperature of Month, = 37.7

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), = 36.7

Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 34.7

† Computed Temperature of Dew-Point, = 31.9

† Do. Elastic Force of Vapour, = 0.181

† Do. Weight of Vapour in a Cubic Foot of Air, = 83

† Relative Humidity, (Saturation = 100), = 83

RAIN fell on 18 Days; Amount in Inches, = 3.72

WIND.		SUMMARY.									
Direction.		N	NE	E	SE	S	SW	W	NW	Calu or Variable.	Mean Force.
A.M.		4	10	5	0	3	0	5	4	0	
P.M.		4	5	8	0	0	1	3	2	8	
Mean.		4	7	7	0	1	1	4	3	4	

* 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.

† Emending 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 Glaisher's Hygrometrical Tables, Second Edition only.

§ While the Diurnal Range is unknown, the Arithmetical Mean of Cols. 9 and 11 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.

Observations made and Return verified by

James May

(Signed)

James May

J.F. J.F.

INSTRUCTIONS FOR TAKING METEOROLOGICAL OBSERVATIONS,

WITH REMARKS ON THE USE OF INSTRUMENTS.

One of the chief objects that the SCOTTISH METEOROLOGICAL SOCIETY proposed to itself when the Society was established in 1855, 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 Reports from different observations, it being found that the observations from two Stations, so very dissimilar as to render them quite incompatible, may be made so nearly alike as to render them the same, and that the observations from two Stations, so very dissimilar as to render them the same, may be made so nearly alike as to render them the same. It is therefore hoped, that the Society will be able to secure uniformity in the observations, and that the observations from two Stations, so very dissimilar as to render them the same, may be made so nearly alike as to render them the same.

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 height 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 in using in applying pressure by means of a screw to the bottom of the cistern, and the use of a flexible leather, thus securing 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 scale, however, is 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 show 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 make the readings from the Barometer which is to be used, in all cases, needful of correction.

It is actually needful that the Barometer which is to be used, 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. 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 unfrequently 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 0.001 inch, 0.002 inch, and 0.003 inch; that is to say, instead of 29.936 inches, the following readings are sometimes met with, viz., 29.935, 29.937, 29.938, 29.939, 29.940, 29.941, 29.942, 29.943, 29.944, 29.945, 29.946, 29.947, 29.948, 29.949, 29.950, 29.951, 29.952, 29.953, 29.954, 29.955, 29.956, 29.957, 29.958, 29.959, 29.960, 29.961, 29.962, 29.963, 29.964, 29.965, 29.966, 29.967, 29.968, 29.969, 29.970, 29.971, 29.972, 29.973, 29.974, 29.975, 29.976, 29.977, 29.978, 29.979, 29.980, 29.981, 29.982, 29.983, 29.984, 29.985, 29.986, 29.987, 29.988, 29.989, 29.990, 29.991, 29.992, 29.993, 29.994, 29.995, 29.996, 29.997, 29.998, 29.999, 30.000, 30.001, 30.002, 30.003, 30.004, 30.005, 30.006, 30.007, 30.008, 30.009, 30.010, 30.011, 30.012, 30.013, 30.014, 30.015, 30.016, 30.017, 30.018, 30.019, 30.020, 30.021, 30.022, 30.023, 30.024, 30.025, 30.026, 30.027, 30.028, 30.029, 30.030, 30.031, 30.032, 30.033, 30.034, 30.035, 30.036, 30.037, 30.038, 30.039, 30.040, 30.041, 30.042, 30.043, 30.044, 30.045, 30.046, 30.047, 30.048, 30.049, 30.050, 30.051, 30.052, 30.053, 30.054, 30.055, 30.056, 30.057, 30.058, 30.059, 30.060, 30.061, 30.062, 30.063, 30.064, 30.065, 30.066, 30.067, 30.068, 30.069, 30.070, 30.071, 30.072, 30.073, 30.074, 30.075, 30.076, 30.077, 30.078, 30.079, 30.080, 30.081, 30.082, 30.083, 30.084, 30.085, 30.086, 30.087, 30.088, 30.089, 30.090, 30.091, 30.092, 30.093, 30.094, 30.095, 30.096, 30.097, 30.098, 30.099, 30.100, 30.101, 30.102, 30.103, 30.104, 30.105, 30.106, 30.107, 30.108, 30.109, 30.110, 30.111, 30.112, 30.113, 30.114, 30.115, 30.116, 30.117, 30.118, 30.119, 30.120, 30.121, 30.122, 30.123, 30.124, 30.125, 30.126, 30.127, 30.128, 30.129, 30.130, 30.131, 30.132, 30.133, 30.134, 30.135, 30.136, 30.137, 30.138, 30.139, 30.140, 30.141, 30.142, 30.143, 30.144, 30.145, 30.146, 30.147, 30.148, 30.149, 30.150, 30.151, 30.152, 30.153, 30.154, 30.155, 30.156, 30.157, 30.158, 30.159, 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30.910, 30.911, 30.912, 30.913, 30.914, 30.915, 30.916, 30.917, 30.918, 30.919, 30.920, 30.921, 30.922, 30.923, 30.924, 30.925, 30.926, 30.927, 30.928, 30.929, 30.930, 30.931, 30.932, 30.933, 30.934, 30.935, 30.936, 30.937, 30.938, 30.939, 30.940, 30.941, 30.942, 30.943, 30.944, 30.945, 30.946, 30.947, 30.948, 30.949, 30.950, 30.951, 30.952, 30.953, 30.954, 30.955, 30.956, 30.957, 30.958, 30.959, 30.960, 30.961, 30.962, 30.963, 30.964, 30.965, 30.966, 30.967, 30.968, 30.969, 30.970, 30.971, 30.972, 30.973, 30.974, 30.975, 30.976, 30.977, 30.978, 30.979, 30.980, 30.981, 30.982, 30.983, 30.984, 30.985, 30.986, 30.987, 30.988, 30.989, 30.990, 30.991, 30.992, 30.993, 30.994, 30.995, 30.996, 30.997, 30.998, 30.999, 31.000, 31.001, 31.002, 31.003, 31.004, 31.005, 31.006, 31.007, 31.008, 31.009, 31.010, 31.011, 31.012, 31.013, 31.014, 31.015, 31.016, 31.017, 31.018, 31.019, 31.020, 31.021, 31.022, 31.023, 31.024, 31.025, 31.026, 31.027, 31.028, 31.029, 31.030, 31.031, 31.032, 31.033, 31.034, 31.035, 31.036, 31.037, 31.038, 31.039, 31.040, 31.041, 31.042, 31.043, 31.044, 31.045, 31.046, 31.047, 31.048, 31.049, 31.050, 31.051, 31.052, 31.053, 31.054, 31.055, 31.056, 31.057, 31.058, 31.059, 31.060, 31.061, 31.062, 31.063, 31.064, 31.065, 31.066, 31.067, 31.068, 31.069, 31.070, 31.071, 31.072, 31.073, 31.074, 31.075, 31.076, 31.077, 31.078, 31.079, 31.080, 31.081, 31.082, 31.083, 31.084, 31.085, 31.086, 31.087, 31.088, 31.089, 31.090, 31.091, 31.092, 31.093, 31.094, 31.095, 31.096, 31.097, 31.098, 31.099, 31.100, 31.101, 31.102, 31.103, 31.104, 31.105, 31.106, 31.107, 31.108, 31.109, 31.110, 31.111, 31.112, 31.113, 31.114, 31.115, 31.116, 31.117, 31.118, 31.119, 31.120, 31.121, 31.122, 31.123, 31.124, 31.125, 31.126, 31.127, 31.128, 31.129, 31.130, 31.131, 31.132, 31.133, 31.134, 31.135, 31.136, 31.137, 31.138, 31.139, 31.140, 31.141, 31.142, 31.143, 31.144, 31.145, 31.146, 31.147, 31.148, 31.149, 31.150, 31.151, 31.152, 31.153, 31.154, 31.155, 31.156, 31.157, 31.158, 31.159, 31.160, 31.161, 31.162, 31.163, 31.164, 31.165, 31.166, 31.167, 31.168, 31.169, 31.170, 31.171, 31.172, 31.173, 31.174, 31.175, 31.176, 31.177, 31.178, 31.179, 31.180, 31.181, 31.182, 31.183, 31.184, 31.185, 31.186, 31.187, 31.188, 31.189, 31.190, 31.191, 31.192, 31.193, 31.194, 31.195, 31.196, 31.197, 31.198, 31.199, 31.200, 31.201, 31.202, 31.203, 31.204, 31.205, 31.206, 31.207, 31.208, 31.209, 31.210, 31.211, 31.212, 31.213, 31.214, 31.215, 31.216, 31.217, 31.218, 31.219, 31.220, 31.221, 31.222, 31.223, 31.224, 31.225, 31.226, 31.227, 31.228, 31.229, 31.230, 31.231, 31.232, 31.233, 31.234, 31.235, 31.236, 31.237, 31.238, 31.239, 31.240, 31.241, 31.242, 31.243, 31.244, 31.245, 31.246, 31.247, 31.248, 31.249, 31.250, 31.251, 31.252, 31.253, 31.254, 31.255, 31.256, 31.257, 31.258, 31.259, 31.260, 31.261, 31.262, 31.263, 31.264, 31.265, 31.266, 31.267, 31.268, 31.269, 31.270, 31.271, 31.272, 31.273, 31.274, 31.275, 31.276, 31.277, 31.278, 31.279, 31.280, 31.281, 31.282, 31.283, 31.284, 31.285, 31.286, 31.287, 31.288, 31.289, 31.290, 31.291,

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *Barone Cottage* County of *Bute*in Lat. $55^{\circ}49'50''$ Long. $5^{\circ}4'5''$, Distance from Sea *10* miles.Height of Cistern of the Barometer above Mean Sea-level *116* feet, above Ground *3* feet.During the MONTH of *April* 188*8*

The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				RAIN.		WIND.				CLOUDS.				THERMOMETERS under Ground.				SEA.	OZONE.	GENERAL REMARKS.	Days of Month.				
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulb. Grass.		9 h. A.M.		9 h. P.M.		No. of hours in which it fell.	Amount in inches.	9 h. A.M.		9 h. P.M.		Readings of the H. Cup Anemometer. No. _____ 9 h. A.M.	9 A.M.		P.M.		No. _____ 3 inches. 12 inches. 22 inches.	Temperature of WELL, at depth of feet, No. _____	Temperature at 1 foot, 3 feet, and 5 feet, No. _____					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.		Velocity (0-10), and Direction.	Amount (0-10), and Species.	Velocity (0-10), and Direction.	Amount (0-10), and Species.											
		* No. _____	No. _____	No. _____	No. _____	No. _____	No. _____	No. _____	No. _____	No. _____	No. _____	No. _____	No. _____			No. _____	No. _____	No. _____	No. _____		No. _____	No. _____	No. _____	No. _____									No. _____	No. _____	
		inches.	°	inches.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°		
	1	30.020	42	29.900	46	45.5	30.5			39.5	36	43.3	41.5	0.15	WNW	5	WNW	1.5		8	10												The following is the general state of the weather during the day - becoming calm 9 p.m.		
	2	29.800	46	29.984	43	52.2	25			41.5	39.6	35	31		NW	1	NW	1.5															Blandy cold showers from 3 clear fine		
	3	30.008	41	29.850	42	42.5	29.2			38.5	37	37.5	35		NW	5	NW	1		5	10												Tr " Breezy cold		
	4	29.750	43	29.960	45	49.5	24			45	39.5	39.5	37		ENE	5	ENE	5		5	10												Tr " fine chilly		
	5	30.140	45	30.182	45	50.0	21			44.3	40	41	37.5		SE	5	NW	5		1	9												Tr " "		
	6	30.234	45	30.236	46	52.2	21.8			46	41	37.5	36.5		W	5	calm																Clear "		
	7	30.184	43	30.123	49	53.5	31			45	42	45	42		WNW	5	NE	5		8	10												Tr " "		
	8	30.120	47	30.070	47	51	34.5			40.8	36.3	35	32		E	1	NW	5		2													Clear "		
	9	30.006	47	30.000	49	57.6	22.5			47	42	45	42		NW	1	NW	1		3	10												Tr " "		
	10	30.030	48	29.850	48	47.5	38			44	40	43	42.5	1.30	W	5	SE	5		10	10												Clear & damp		
	11	29.774	49	29.790	47	48.6	38.2			44.5	41.3	40	37.3	0.20	NW	1.5	NW	2		6	6												Tr clear blowy, showers		
	12	29.700	45	29.450	48	47.3	37			42	39.5	46	45.5	4.05	NW	5	W	1		10	6												Clear chilly damp		
	13	29.858	48	29.624	50	50	42			44	42.5	44	42.2	1.26	W	2	W	5		8	10												Tr clear gale "gusty" 1-3		
	14	29.684	50	29.750	52	59	42.5			49	47	46	44	0.30	SW	5	SW	5		10	5												Tr " fine		
	15	29.660	49	29.608	50	48	42.5			46	45	42.5	42	2.65	E	5	calm			10	5												Clear & cool		
	16	29.612	48	29.576	51	55.6	36			44.8	42.3	46.3	44.5	2.00	S	5	S	2		10	10												Tr clear fine		
	17	29.374	50	29.260	50	52	43			45.8	45	43.5	43	3.96	SE	15	calm			10	10												Clear blwy showers		
	18	29.360	49	29.354	52	55	37.5			45	44	45.3	43.2	0.60	S	5	NE	5		9	10												Tr clear fine		
	19	29.460	51	29.540	51	57.3	40.5			50	47	44.6	43.3	2.60	N	5	E	5		8	10												Tr " "		
	20	29.664	49	29.850	46	46	39			44.5	41.5	39.5	35.8	0.05	E	1	NE	1		10	10												Cloudy & cold		
	21	29.880	47	29.864	46	51	35.5			42	36.5	37	34		NE	1.5	ENE	1		3													Tr blwy fine		
	22	29.850	43	29.920	45	47	32.5			40	37	37.5	35.5	0.10	ENE	1	ENE	1		8	10												Tr " "		
	23	29.968	43	30.090	45	46.6	36.6			39.5	36.8	37.5	35.5		NE	1.5	ENE	1		10	8												Tr " "		
	24	30.112	44	30.180	44	45.5	36.5			39.2	35.5	36.8	33.3		NE	2	E	1		8													Tr " "		
	25	30.224	47	30.260	48	57	32.5			47.5	44.6	39.5	37.2		NE	5	E	5		2	2												Tr " "		
	26	30.210	46	30.100	50	52.8	34.5			43	40	44	42	2.45	W	5	W	1.5		2	10												Tr " "		
	27	29.810	50	29.874	50	50	42.5			46.5	43.5	43	41	2.50	SW	1	W	1		10	2												Tr " " breezy		
	28	29.720	50	29.490	52	52.2	42.2			48	47.5	48.2	45.3	1.60	S	1	SW	1.5		10	10												Cloudy blowy wet		
	29	29.372	49	29.460	51	52.3	41			44	41.5	42.5	40.5	0.55	SW	1	calm			8	10												Tr clear blowy		
	30	29.400	49	29.340	51	53	37.5			46	44	45.5	44.5	6.40	SE	1	SE	1		9	10												Cloudy fine am - showers p.m.		
	31																																		
Suns.		13	16	15	15	11	13	12	9	15	12	17	17	6	4		9		7		203	213													
Means.		29.816	46.8	29.818	48.0	50.9	36.6			44.2	41.0	41.7	39.6	1.8			0.88		0.80		6.8	7.4													
† Total Corrections for Instrumental Errors.																																			
‡ Corrections for Diurnal Range.																																			
"Corrected Means."		29.816		29.818		50.9																													
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†† = *29.767*
for Temp. (Col. 2), = *29.816* - *0.049* = *29.767*
Corrected Mean" of Barometer at 9 P.M., minus the Correction†† = *29.766*
for Temp. (Col. 4), = *29.818* - *0.052* = *29.766*
Mean at Station, corrected, and at 32°, = *29.766*
Correction for height, *116* feet above Mean Sea-level, = *1.27*
Mean, reduced to 32°, and Sea-level, = *29.893*
Highest Reading, corrected for Index error, on the *25* th, = *30.260*
Lowest Do. Do., on the *30* th, = *29.240*
Difference, or Monthly Range, = *1.020*

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the *14* th, = *59.0*
Lowest in Month, corrected for Index errors, on the *3* rd, = *29.2*
Difference, or Monthly Range, = *29.8*
"Corrected Mean" of all the Highest, (Col. 5), = *50.9*
"Corrected Mean" of all the Lowest, (Col. 6), = *36.6*
Difference, or Mean Daily Range, = *14.3*
** Calculated Mean Temperature of Month, = *43.8*
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*
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = *40.3*
†† Computed Temperature of Dew-Point, = *37.1*
†† Do. Elastic Force of Vapour, = *2.21*
†† Do. Weight of Vapour in a Cubic Foot of Air, =
†† Relative Humidity, (Saturation = 100), = *80*
RAIN fell on *18* Days; Amount in Inches, = *3.29*

WIND.	SUMMARY.									
	Direction.	N	NE	E	SE	S	SW	W	NW	Mean Force.
A.M.		1	4	5	2	4	3	6	5	0.88
P.M.		0	3	7	2	3	2	5	6	0.80
Mean.		1	3	6	2	3	3	6	5	0.84 = 0.71

Observations made and
Return verified by

(Signed)

J.F.

N.A.

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *Barone Cottage*, County of *Perth*, in Lat. *55° 49' 50"*, Long. *5° 4' 5"*, Distance from Sea *10* miles.Height of Cistern of the Barometer above Mean Sea-level *116* feet, above Ground *3* feet.During the MONTH of *May* 188*8*.

The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				RAIN.		WIND.				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, began and ended.</i>	Days of Month.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs. Sun's rays, Grass.		9 h. A.M.		9 h. P.M.		9 h. A.M.		9 h. P.M.		9 A.M.		P.M.		9 h. A.M.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
		Barometer. * No.	Attach- ed Ther- mometer	Barometer. No.	Attach- ed Ther- mometer	Max. No.	Min. No.	Max. No.	Min. on Grass. No.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	No. of hours in which it fell.	No.	9 h. A.M.	9 h. P.M.	Direction.	Force.	Direction.	Force.	Readings of the H. Cup Anemometer. No.	9 h. A.M.	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.	Temperature of Wet Test No.	Temperature of Air and Dew- point.	9 A.M.	9 P.M.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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BAROMETER, "corrected Mean" at 9 A.M., minus the Correction†† for Temp. (Col. 2), = *29.877*... - *0.065* = *29.812*
Corrected Mean" of Barometer at 9 P.M., minus the Correction†† for Temp. (Col. 4), = *29.906*... - *0.067* = *29.839*
Mean at Station, corrected, and at 32°, = *29.825*
Correction for height, *116* feet above Mean Sea-level, = *.127*
Mean, reduced to 32°, and Sea-level, = *29.952*
Highest Reading, corrected for Index error, on the *23rd*, = *30.514*
Lowest Do. Do., on the *1st*, = *28.990*
Difference, or Monthly Range, = *1.524*

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the *19th*, = *72.5*
Lowest in Month, corrected for Index errors, on the *10th*, = *33.0*
Difference, or Monthly Range, = *39.5*
"Corrected Mean" of all the Highest, (Col. 5), = *57.8*
"Corrected Mean" of all the Lowest, (Col. 6), = *41.7*
Difference, or Mean Daily Range, = *16.1*
** Calculated Mean Temperature of Month, = *49.8*
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), = *42.9* *49.2*
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = *45.9* *46.0*
† Computed Temperature of Dew-Point, = *42.3* *46*
† Do. Elastic Force of Vapour, = *274*
† Do. Weight of Vapour in a Cubic Foot of Air, = *78*
† Relative Humidity, (Saturation = 100), = *78*
RAIN fell on *19* Days; Amount in Inches, = *4.55*

WIND.		SUMMARY.									
Direction.		N	NE	E	SE	S	SW	W	NW	Variable.	Mean Force.
A.M.		2	8	4	2	5	2	8	0	0	1.00
P.M.		0	3	2	2	3	5	9	3	4	0.95
Mean.		1	5	3	2	4	4	8	2	2	0.98 = 0.96

Observations made and Return verified by

James May

(Signed)

*James May**J.E. J.E.*

INSTRUCTIONS FOR TAKING METEOROLOGICAL OBSERVATIONS, WITH REMARKS ON THE USE OF INSTRUMENTS.

One of the chief objects that the Scottish Meteorological Society proposed to itself when the Society was established in 1855, was to observe accurately 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 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 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 Anemometers.—Though well-suited to indicate roughly variations of atmospheric pressure, anemometers are not used for Meteorological Observations, as they are not supplied with the right of observation, and the observations which will secure that the floating surface of the mercury in the tube is accurately measured from the 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 Fox's Barometer, the arrangement consisting in applying pressure by means of a screw to the bottom of the cistern, which is made of flexible ivory, thus raising or depressing the surface till it just meets the level point 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 scale-inches 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 show 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 Fox'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 attained by a thin ivory float, which, when the pressure rises, floats up the tube, and when it falls, sinks down, thus always to form a straight line with these its ivory float, 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. 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 is frequently made by those beginning observers, who, in setting the face of the vernier to the level of the clear surface of the mercury, is in direct contact with the glass tube, must be carefully avoided.

The errors most frequently made in reading the Barometer are errors of 1.000 inch, 0.050 inch, and 0.020 inch; that is to say, instead of 29.365 inches, either of the following is sometimes said down—viz., 29.365 inches, 29.365 inches, or 29.815 inches. Experience having shown that even the best Observers make these mistakes, particular attention is directed to the matter.

When a Barometer having adjustable surfaces has to be removed from its fastenings, the ivory peg must first be screwed 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 the ivory may be expelled. First, screw up the cistern by screwing the ivory peg tight, so as to prevent the escape of mercury; then screw up the mercury to about half an inch from the top of the tube; and, having inverted the instrument, place the top of it on a yielding surface, such as the palm of the hand, and gently tap on the cistern with the palm of the hand, and the air will escape. Should there be a column of two atmospheres—the measure 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 unfastening the float of the cistern, for, if this be not attended to, the mercury will flow out, and the instrument be seriously damaged.

The Council of the Society recommend that the Self-Registering Thermometers, and the Dry and Wet Bulb Hygrometers, be kept in Stevenson's Louver-boarded Box for the protection of the instruments from wind and rain. The Thermometers, other Negretti and Zamboni's, or Phillips's, whether they will set at the highest temperature, they may be required to register. By the laws of the Society, Members and Observers have a right to have their instruments compared by the Secretary, and to advise with him regarding the purchase of instruments.

Very great care must be bestowed on the Observations of the Wind. Wind, the accuracy of which, both as regards Direction and Force, is so essential towards the right discussion of many of the more important problems of the science. A Wind-Vane ought to be elevated at least 12 feet above surrounding objects. When it oscillates incessantly, the mean direction should be taken. In all cases, but especially when the Vane is stationary, and when the wind is feeble, reference may be made to the direction of smoke, etc., in well-protected situations. Careful observations are recommended to be made on the changes in the direction of the wind; and during storms, extra observations at every hour of Greenwich time. Such a system of simultaneous observation, pursued at different Stations, is likely to give highly valuable and important results, particularly in connection with the system of thickly-planted Stations over a limited district round Edinburgh called STORM STATIONS, in the course of being established by the Society for the systematic investigation of the relation of the force of the wind to Barometric pressure, and other points connected with storms.

The Council would recommend the Hygrometrical Cup Anemometer, a Wind-vane that passes the wind over a horizontal surface, and a Wind-vane that passes the wind over a vertical surface, to be used for the purpose of indicating the Force of the Wind at any particular hour of observation. The Society by Mr. T. Stevenson, the Honorary Secretary, and Mr. R. Ballingall, the Secretary, are recommended as likely to secure uniformity in making observations on the Force of the Wind.

Many causes conspire to produce anomalies in Rain Returns, arising partly from the difficulty of obtaining a perfectly unobstructed situation for observation, and partly from the defective nature of the instruments used. The Rain-Gauge should not be placed on a slope or terrace, but on a level piece of ground, in an open situation as the Observer can secure for it. As it is often difficult to obtain a position as free and unobstructed by surrounding objects as is desirable, care should be taken to place it at some distance from shrubs, trees, buildings, or other obstructions, at least as many feet from their base as they are in height. The more important directions, towards which it is most desirable to have a free exposure, are in the order of their importance, S.W., N.E., S.E., S., and W. The rain of the Gauge must be perfectly level, and fixed so that it will remain level in all weathers, and be at a height of one foot above ground, over grass. In such gauges as Fleming's, which are furnished with a measuring rod attached to a float, the rod ought to be fixed down, and the float rise to its height only at the time the instrument is read, it being found that it often projects above the rim of the gauge when a measuring rod is not used. Care should be taken to hold it quite level when the Rain Gauge is being read, and the observer to read the reading entered in the log of the previous day. If the Gauge is read once a month, the reading is to be taken on the first of the month, and the amount entered for the previous month.

Snow-falls may, for convenience, be registered in the rain column, under the following conditions:—When a 'Snow' shower occurs, it should be noted in the 'Remarks'; and the letter S added to the depth of water received in Gauge. The depth of the snow must be measured in some open place where no drift is observed, and registered in addition to, and as a check upon, the indications of the Rain-Gauge. For wind, rain, and snow, as indicated in every column, the Observer cannot be too careful to register observations only, and nothing that partakes of the nature of deduction or inference.

Convenient abbreviations for the nomenclature of Clouds will be found on the other side. The amount of Cloud ought to be estimated from the greater or less obscuration of the sky overhead (i.e., within 20° or 30° of the zenith). The strata of Clouds that appear near the horizon are viewed obliquely; and thus, being unable to judge of their amount, we ought not to take them into account in the Clouds' column, though their appearance and changes may be noted among the Remarks. The amount of Cloud is entered from a scale of 0 to 10; thus, when the sky overhead is free from Clouds it is entered 0, when half covered by Clouds, 5, wholly covered, 10, and so on.

Observations of the Clouds are made at 9 A.M. and at sunset, as illustrating the condition and currents of the upper and lower regions of the atmosphere. The entries in the schedule are to be made in the following manner:—Thus, in the column Velocity and Direction, S.W. will indicate that the upper strata of Clouds travel with extreme velocity from S.W., and those in the lower regions from W., with one-third the speed of the former. Again, in the second Cloud column, an entry of 4, 2, will indicate that the higher regions are covered to the amount of 4-tenths with stratus Clouds; and that the sky is further obscured to the extent of 2-tenths by lower Clouds of the cumulo stratus kind.

Remarks on peculiar Clouds, accompanied with drawings, will assist materially in the development of a more exact nomenclature of Clouds, as well as throw light on the electrical, and other of the more obscure phenomena of Meteorology.

The approximate number of Hours in which objects in the sun's rays cast shadows, should be entered in the proper column.

As the germination and growth of crops and plants generally depend greatly on the temperature of the soil,—its amount and constancy,—the Council recommend that Observations in this interesting department be made being sunk to depths of 3, 12, and 22 inches, and the stems above ground protected from the sun's rays, and fitted with sloping tin collars, to prevent rain water being conveyed to the bulbs by the stems or wooden frames.

A knowledge of the Temperature of the Sea is not only in itself, but a valuable adjunct to our land, a most important branch of Meteorology. The Council therefore recommend that the Temperature of the Sea be carefully taken by a properly constructed apparatus, both on 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

being of the scale of every instrument, the rejection of Thermometers, and the Dry and Wet Bulb Hygrometers, are not likely to stand exposure to the weather, and the last is protected and arranged in the form of a box, and the Thermometers, other Negretti and Zamboni's, or Phillips's, whether they will set at the highest temperature, they may be required to register. By the laws of the Society, Members and Observers have a right to have their instruments compared by the Secretary, and to advise with him regarding the purchase of instruments.

water, in cases where the observations cannot be taken daily, the observations may be made on the 5th, 15th, and 25th of each month. When extra Sea Observations might be taken, the observations and greater depths, noting always the Temperature of the air and the Hour of Observation. It is also very desirable that observations on the daily Maxima and Minima by Thermometers continuously immersed, be instituted at points along the coast, by the method proposed by Mr. T. Stevenson, and already commenced at Peterhead and Liverpool.

The Temperature of the water at the bottom of Wells ought, when practicable, to be taken, and the depth of the Well, and of the water being used, should be noted.

Mention what Test-Papers are used, and the results of the tests. The Paper is affixed by a piece of white paper, and the Thermometer Box, and the index, and the results of the tests, at 9 A.M. and 9 P.M. It is desired that these indications be registered in connection with the force and direction of the wind at the time of observation, in the following manner:—thus 32°, as an Ozone entry in the schedule will indicate that the Ozone paper is tinted as 3 on the scale, that the wind is from the N.W., and that its force on the scale 0—5 is 4, or blowing fresh.

Too much importance cannot be attached to the electric condition of the atmosphere in connection with terrestrial magnetism, barometrical, thermometrical and meteorological phenomena generally. A proper Electrometer is necessary to every complete meteorological observatory. The Remarks column is unavoidably too narrow. Some of the most valuable Observations that can be taken are those for which no rules can be given nor hours assigned. The use of contractions, ought, therefore, to be taken every advantage of, and a list of such as are in general use are given at the foot of the column. Besides special and extraordinary Observations, the following are recommended to be given in this column:—1. Direction of the wind, and its force, at the time of the last observation, and the direction of the wind, and its force, at the time of the next observation. 2. 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SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *Baron's cottage*, County of *But*, in Lat. $55^{\circ}49'50''$ Long. $5^{\circ}4'5''$, Distance from Sea 10 miles.Height of Cistern of the Barometer above Mean Sea-level 116 feet, above Ground 3 feet.During the MONTH of *June* 188*8*.

The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				RAIN.		WIND.				CLOUDS.				THERMOMETERS under Ground.			SEA.	OZONE.	GENERAL REMARKS.		Days of Month.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.		No. of hours in which it fell.	Amount in inches.	9 h. A.M.		9 h. P.M.		Readings of the H. Cup Anemometer No. —	9 h. A.M.	Velocity (0—10), and Direction.	Amount (0—10), and Species.	Velocity (0—10), and Direction.	Amount (0—10), and Species.	SUNSHINE. Hours.						9 h. A.M.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
		Barometer. No. —	Attached Ther- mometer No. —	Barometer. No. —	Attached Ther- mometer No. —	Max. No.	Min. No.	Max. by Sun's rays No.	Min. on Grass. No.	Dry bulb. No.	Wet bulb. No.	Dry bulb. No.	Wet bulb. No.			Direction.	Force.	Direction.	Force.								No. 8 inches.	No. 12 inches.	No. 22 inches.	Temperature of Well at depth of feet. No.		Temperature at 1 fathom, and surface.	9 A.M.	9 P.M.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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BAROMETER, "corrected Mean" at 9 A.M., minus the Correction†† = 29.843
for Temp. (Col. 2), = 29.918 ... - 0.075
Corrected Mean" of Barometer at 9 P.M., minus the Correction†† = 29.840
for Temp. (Col. 4), = 29.917 ... - 0.077
Mean at Station, corrected, and at 32°, = 29.842
Correction for height, 116 feet above Mean Sea-level, = 127
Mean, reduced to 32°, and Sea-level, = 29.969
Highest Reading, corrected for Index error, on the 18th, = 30.300
Lowest Do. Do., on the 12th, = 29.418
Difference, or Monthly Range, = 0.882

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 26th, = 78.2
Lowest in Month, corrected for Index errors, on the 5th, = 38.5
Difference, or Monthly Range, = 39.7
"Corrected Mean" of all the Highest, (Col. 5), = 63.4
"Corrected Mean" of all the Lowest, (Col. 6), = 45.6
Difference, or Mean Daily Range, = 17.8
** Calculated Mean Temperature of Month, = 54.5

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), = 54.1
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 50.6
†† Computed Temperature of Dew-Point, = 47.2
†† Do. Elastic Force of Vapour, = 32.3
†† Do. Weight of Vapour in a Cubic Foot of Air, = 77
†† Relative Humidity, (Saturation = 100), = 77
RAIN fell on 12 Days; Amount in Inches, = 3.15

WIND.		SUMMARY.									
Direction.		N	NE	E	SE	S	SW	W	NW	Calms or Variable.	Mean Force.
A.M.		0	13	7	1	3	1	1	2	2	1.03
P.M.		2	12	5	0	2	0	5	2	2	0.80
Mean.		1	12	6	1	2	1	3	2	2	0.92 = 0.85

Observations made and
Return verified by

(Signed)

J. F.

J. F.

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Baron Cottage, Northesk, Bute, in Lat. 55° 19' 50", Long. 5° 11' 5", Distance from Sea 10 miles.
Height of Cistern of the Barometer above Mean Sea-level 116 feet, above Ground 3 feet. During the MONTH of July 1888.

The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				RAIN.		WIND.				CLOUDS.				THERMOMETERS under Ground.				SEA.	OZONE.	GENERAL REMARKS.		Days of Month.			
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.		No. of hours in which it fell.	Amount in inches.	9 h. A.M.		9 h. P.M.		Readings of the H. Cup Anemometer. No. _____	9 A.M.		P.M.		9 h. A.M.					SUNSHINE. Hours.	0—10.		As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc.		
		Barometer. * No. _____	Attached Thermometer	Barometer. No. _____	Attached Thermometer	Max. No. _____	Min. No. _____	Max. in Sun's rays No. _____	Min. on Grass. No. _____	Dry bulb. _____	Wet bulb. _____	Dry bulb. _____	Wet bulb. _____			Direction.	Force	Direction.	Force		Velocity (0—6), and Species.	Amount (0—10), and Species.	Velocity (0—6), and Direction.	Amount (0—10), and Species.	No. _____ inches.	No. _____ inches.	No. _____ inches.				Temperature of Water at depth of feet. No. _____			Temperature at surface and Density.	9 A.M. 9 P.M.
inches.	°	inches.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°			
1	29.974	60	29.940	64	67	41			60.5	54	52	50	0.30	SSW	5	SW	5			2	10												Remarks between 9 am & 9 pm 3/4 clear fine	1	
2	29.714	59	29.250	57	53	49.2			52	50	51.6	51.2	1.010	E	1	NE	1			10	10											Dull & wet	2		
3	29.780	55	29.350	56	54	49.5			51.5	50.5	51.5	51.2	2.50	NE	5	SSW	5			10	10											hazy, damp	3		
4	29.202	57	29.340	57	59	50			53.8	50.2	53	51.2	1.20	E	5	E	5			10	10											Drizzle	4		
5	29.406	55	29.600	57	57.2	46.5			51	48.8	54	47.5		NE	1.5	ENE	1.5			10	10											blowy chilly	5		
6	29.474	55	29.840	56	58	46.2			56	50.2	51.8	48.5		E	5	SW	5			10	10											fine	6		
7	29.940	57	30.000	59	63	46.2			58.2	50.2	54.5	45	0.40	NE	5	W	5			3	1											1/2 clear " changeable	7		
8	29.954	56	29.870	56	57	54.1	5		54.8	51.6	53	51.8	2.16	SW	5	SW	1			9	10											Dull & damp	8		
9	29.700	57	29.860	56	58	48.2			55	52.5	49	46	0.02	WNW	2	NNW	1			9	10											blowy cold	9		
10	29.860	54	29.760	53	54	54.2	2		51	47.2	42	40	0.66	N	2	NW	5			10	1											1/2 clear showers cold	10		
11	29.850	56	29.960	56	63	40			56.6	50.2	49	54.5		NW	2	NW	1.5			1	—											3/4 " blowy chilly fine	11		
12	30.026	57	30.064	57	61.2	43.8			58	50.8	49	51.7		NW	1.5	WNW	1.5			—	3												1/4 " clear fine	12	
13	30.032	56	30.026	60	62.2	47.5			57	55.2	56	54.8	0.36	W	1	calm	—			10	10											1/4 " clear fine	13		
14	29.984	60	29.910	60	64.5	52.5			58	57.6	56	55.3	1.50	calm	—	W	5			10	10											Dull & damp	14		
15	29.800	59	29.682	60	59	53.5			58.5	57.6	55	55	5.05	E	5	calm	—			10	10												1/2 " mild wet	15	
16	29.564	57	29.490	55	55	64.9	2		51	50.5	50.2	44.2	2.95	NE	5	NE	1.5			10	8											blowy "	16		
17	29.508	56	29.600	57	60.3	49			56.8	55	53.8	53.5	1.80	NE	5	NE	1			10	10												1/4 " " fine	17	
18	29.696	58	29.844	60	73	52.2			57	55.5	60	58		NE	5	calm	—			10	8												3/4 clear fine	18	
19	29.860	62	29.820	63	76	55.1			68.5	62.2	58.8	56		SE	5	calm	—			—	2												1/4 " " moist	19	
20	29.780	62	29.770	62	65	55.2			60	57	57.2	56.8	1.90	SE	1	calm	—			10	10												Dull & damp fine	20	
21	29.730	61	29.700	62	66	52.5			57.2	56.2	55.2	53.6	1.96	SW	5	SE	5			10	8												3/4 clear fine	21	
22	29.590	58	29.538	61	63	50.5			54.8	54	57.5	56	5.25	E	1	SSE	1.5			10	10												Dull wet - fair fine	22	
23	29.382	60	29.364	61	64.8	53.3			55	54.2	56	54	0.60	SSE	5	SSE	5			10	10												1/2 clear breezy fine	23	
24	29.350	61	29.480	62	66.3	53.5	5		59.8	58.2	57	55.3	0.55	S	5	SW	5			10	8												3/4 " " "	24	
25	29.406	60	29.450	64	68.5	51			58.5	56.6	58	56.3	0.03	SE	5	calm	—			10	8												3/4 " " "	25	
26	29.522	64	29.640	62	64.5	51.5			57.8	55.3	58	53.5		NW	5	WSW	5			9	10												1/4 " " "	26	
27	29.712	61	29.674	61	68.5	45			62	58	52	51	5.35	SE	5	NE	1			5	10												1/4 " " " milky	27	
28	29.700	56	29.770	57	53.5	47.5			49.8	48.8	49.5	48.5	4.56	NE	1	SE	5			10	10												Dull & wet	28	
29	29.724	64	29.668	55	53.5	46.5			49	48	49	46.5	0.90	NE	5	ENE	1.5			10	10												" "	29	
30	29.650	56	29.684	57	62	46			56.5	51.5	50.2	49	0.25	ENE	1	calm	—			8	5												1/2 showers fine	30	
31	29.788	57	29.900	58	63	44.5			57.5	53	46.5	45		SW	5	NW	5			5	—													1/2 clear fine	31
Sums.		19169	14	19145	12	167	139			1710	158	157	158	5.035							24.5	20.5			251	238									
Means.		29.704	25	29.704	26	62.8	3.0			56.3	53.4	52.8	51	23							0.79	0.66			8.1	7.7									
† Total Corrections for Instru- mental Errors.																																			
‡ Correc- tions for Diurnal Range.																																			
"Cor- rected Means."																																			
No. of		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), = 29.622
Corrected Mean of Barometer at 9 P.M., minus the Correction†† for Temp. (Col. 4), = 29.623
Mean at Station, corrected, and at 32°, = 29.622
Correction for height, 116 feet above Mean Sea-level, = .127
Mean, reduced to 32°, and Sea-level, = 29.749
Highest Reading, corrected for Index error, on the 12th, = 30.064
Lowest Do. Do., on the 2nd, = 29.250
Difference, or Monthly Range, = 0.814

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 19th, = 76.5
Lowest in Month, corrected for Index errors, on the 11th, = 40.0
Difference, or Monthly Range, = 36.5
"Corrected Mean" of all the Highest, (Col. 5), = 62.0
"Corrected Mean" of all the Lowest, (Col. 6), = 48.2
Difference, or Mean Daily Range, = 13.8
** Calculated Mean Temperature of Month, = 55.1
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), = 54.5
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 52.2
† Computed Temperature of Dew-Point, = 50.0
† Do. Elastic Force of Vapour, = .360
† Do. Weight of Vapour in a Cubic Foot of Air, = 84
† Relative Humidity, (Saturation = 100), = 84
RAIN fell on 23 Days; Amount in Inches, = 5.04

WIND.	SUMMARY.									
	Direction.	N	NE	E	SE	S	SW	W	NW	Mean Velocity in miles per day.
A.M.		2	8	6	3	3	3	2	1	0.79
P.M.		2	4	3	2	4	5	4	2	0.66
Mean.		2	6	5	2	4	4	3	2	0.73 = 0.53 lb.

Observations made and
Return verified by

(Signed)

J. F. 74.

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Baron's Cottage, County of Bute, in Lat. 55.49 50 Long. 5.4.5, Distance from Sea 10 miles.
Height of Cistern of the Barometer above Mean Sea-level 116 feet, above Ground 3 feet. During the MONTH of August 1888.
The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.		RAIN.		WIND.				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.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
		9 h. A.M.		9 h. P.M.		Protected in Shade 4 feet above Ground.		Exposed Black Bobs. Grass.		9 h. A.M.		9 h. P.M.		9 h. A.M.		9 h. P.M.		9 A.M.		P.M.		9 h. A.M.		Temperature of Well at 5 feet No.	Temperature at surface and humidity.						9 A.M. 9 P.M.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
		Barometer. * No.	Attached Thermometer	Barometer. No.	Attached Thermometer	Max. No.	Min. No.	Max. No.	Min. No.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	No. of hours in which it fell.	Amount in inches.	Direction.	Force.	Direction.	Force.	Readings of the H.Cup Anemometer. No.	9 h. A.M.	Velocity (0-6), and Direction.	Amount (0-10), and Species.									Velocity (0-6), and Direction.	Amount (0-10), and Species.	No. 8 inches.	No. 12 inches.	No. 22 inches.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
		inches.	°	inches.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°									°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°

NOTATION USED IN GENERAL REMARKS.

a.	denotes aurora.	m.	denotes meteor.
ci.	cirrus.	ms.	meteors.
ci-cu.	cirro-cumulus.	n.	nebula.
cu.	cumulus.	r.	rain.
cu-s.	cumulo-stratus.	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.	so. h.	solar halo.
h. d.	heavy dew.	sq.	squall.
h. l.	hail.	sq. s.	squalls.
l.	lightning.	t.	thunder.
li. cl.	light clouds.	t. s.	thunder storm.
li. sh.	light showers.	w.	wind.
li. co.	lunar corona.	g.	gale of wind.
li. ha.	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	Calm	1.5	Light breeze	4	Blowing hard
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†† = 29.793
for Temp. (Col. 2), = 29.872, — 0.079.
Corrected Mean" of Barometer at 9 P.M., minus the Correction†† = 29.791
for Temp. (Col. 4), = 29.873, — 0.082.
Mean at Station, corrected, and at 32°..... = 29.792
Correction for height, 116 feet above Mean Sea-level,..... = .127
Mean, reduced to 32°, and Sea-level,..... = 29.919
Highest Reading, corrected for Index error, on the 8 th,..... = 30.236
Lowest Do. Do., on the 23rd..... = 29.372
Difference, or Monthly Range,..... = 0.864

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 26 th,..... = 70.2
Lowest in Month, corrected for Index errors, on the 18 th,..... = 40.3
Difference, or Monthly Range,..... = 29.9
"Corrected Mean" of all the Highest, (Col. 5),..... = 62.9
"Corrected Mean" of all the Lowest, (Col. 6),..... = 48.7
Difference, or Mean Daily Range,..... = 14.2
** Calculated Mean Temperature of Month,..... = 55.8
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),..... = 54.5
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12),..... = 52.4
†† Computed Temperature of Dew-Point,..... = 50.3
†† Do. Elastic Force of Vapour,..... = 365
†† Do. Weight of Vapour in a Cubic Foot of Air, ... =
†† Relative Humidity, (Saturation = 100),..... = 86
RAIN fell on 25 Days; Amount in Inches,..... = 3.66

WIND.	SUMMARY.									
	Direction.	N	NE	E	SE	S	SW	W	NW	Mean Velocity in miles per day.
A.M.		3	2	1	4	6	6	8	1	0.79
P.M.		1	0	3	4	2	4	9	6	0.68
Mean.		2	1	2	4	4	5	8	4	0.74 = 0.5542.

Observations made and
Return verified by

James Hay

(Signed)

James Hay

J.H.

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Barons Cottage, Rothsay, Buteshire, in Lat 55° 49' 50", Long 5° 4' 5", Distance from Sea 10 miles.
Height of Cistern of the Barometer above Mean Sea-level 116 feet, above Ground 3 feet. During the MONTH of September 1888.
The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				RAIN.		WIND.				CLOUDS.				SUNSHINE. Hours.	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.					
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.		No. of hours in which it fell.	Amount in inches.	9 h. A.M.		9 h. P.M.		Readings of the H. Cup Anemometer. No.—	9 h. A.M.	P.M.	9 h. A.M.														
		Barometer. * No.	Atmospheric Thermometer.	Barometer. No.	Atmospheric Thermometer.	Max. No.	Min. No.	Max. in Sun's rays. No.	Min. on Grass. No.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.			Direction.	Force.	Direction.	Force.				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.		
inches.	°	inches.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°						
1		30.040	56	29.834	58	58	47.3			58.2	52.2	57	56.5	1.225	SW	1	SW	5		10	10										Dull & wet	1					
2		29.820	58	29.900	58	61.3	48.5			58	56	49.5	48.2	0.03	W	5	calm	-		5	2										clear, fine	2					
3		29.860	57	29.772	59	60.5	48.5			55	53.2	52.5	51	0.90	W	5	W	5		10	10										Dull & drizzle	3					
4		29.726	57	29.762	58	60	48.5			53.6	50.8	49.5	48	1.80	W	1	calm	-		9	2										fine	4					
5		29.794	59	29.850	58	61.5	48.5			56.6	55.2	51	50	0.50	W	1	W	1		8	1										drizzle	5					
6		29.684	55	29.744	56	58.8	48.5			51.5	49.5	50.5	49.5	1.30	SSW	1	VNW	1		10	2										Dull & drizzle	6					
7		30.030	57	30.264	58	62.2	47.5			58	53	48	46.2		NW	1	calm	-		1	2										3c breezy fine	7					
8		30.430	55	30.440	56	64.5	40.5			57	52.2	45.3	44		calm	-	calm	-		1	-										fine	8					
9		30.440	53	30.298	53	53	43.8			50	47.5	47	45		ENE	5	E	5		9	10										cloudy & drizzle	9					
10		30.190	53	30.140	55	64	39			54.3	50	46.5	45.5	0.90	NW	5	E	5		2	10										fine, warm	10					
11		30.160	54	30.230	56	59.5	45.2			54.5	53.5	54	52.3		W	5	W	5		9	10										Dull & drizzle	11					
12		30.348	58	30.400	57	60	51.5			56	53.2	51.5	50		SW	5	calm	-		10	10										cloudy fine	12					
13		30.430	57	30.350	59	67.6	49.6			58.5	55	50.8	49.3		SE	5	calm	-		1	-										clear	13					
14		30.236	57	30.114	57	67.5	47.5			59	54.5	52.2	50.5	1.25	SE	1	calm	-		-	-										fine	14					
15		30.000	58	30.040	60	60	49.5			54.5	54	53	51.6	3.10	SE	5	NW	1.5		10	10										Dull & drizzle	15					
16		30.174	54	30.224	58	63.5	49.3			56.2	52.5	48	47		W	5	NW	5		8	-										fine	16					
17		30.220	55	30.246	56	64	49.5			54.5	53	52	50.5		W	5	calm	-		9	10										cloudy fine	17					
18		30.284	57	30.290	59	65.5	48			56	53	52.2	51.6		W	5	W	5		10	-										fine	18					
19		30.292	56	30.290	59	68	45			56.5	55.5	53.5	51.5		NE	5	NE	5		-	10										clear	19					
20		30.216	55	30.250	56	61	48			51	49.6	48.8	48		NE	5	calm	-		10	-										fine	20					
21		30.254	53	30.216	57	65	43.2			57.5	51	48	47.2	0.06	calm	-	calm	-		10	-										fine	21					
22		30.210	54	30.200	56	59	42			49.2	49	46.2	45.6		calm	-	calm	-		10	-										Dull & drizzle	22					
23		30.154	54	30.074	55	62.2	41.5			50	49.3	46.3	45.5		SW	5	W	5		10	-										fine	23					
24		30.000	53	30.064	55	63.2	40			50.5	50	49.2	46.5		NE	5	E	2		10	9										fine	24					
25		30.210	53	30.270	52	56.2	44			46	42	45.5	41.2		ENE	1	E	1		8	10										fine	25					
26		30.290	50	30.250	54	60	42			48.8	44.3	47.5	46		ENE	5	ENE	5		8	-										fine	26					
27		30.184	53	30.070	53	60.5	46.2			51.5	49.8	50	48	0.20	NE	5	NE	1		10	5										cloudy fine	27					
28		29.954	53	29.770	53	52.5	47			49.2	48	51	51	0.70	NE	1	calm	-		10	10										Dull & drizzle	28					
29		29.670	54	29.692	53	58.5	40.5			52.8	50.8	41.2	39.5		NW	5	NW	1		8	-										fine	29					
30		29.784	57	29.774	48	51.5	35.5			45	41.2	38	35.5	0.68	NW	1	NW	5		2	-										fine	30					
31																																				fine	31
Sums.		808.184	165.5	802.844	164.2	169				108.5	127	117	124	2.479	13		17.5	14.0		218	133																
Means.		3	15	2	18	2	15			9	2	27	23				0.58	0.47		7.3	4.4																
† Total Corrections for Instrumental Errors.																																					
‡ Corrections for Diurnal Range.																																					
“Corrected Means.”																																					
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†† = 30.034
for Temp. (Col. 2), = 30.106 - 0.072
Corrected Mean” of Barometer at 9 P.M., minus the Correction†† = 30.0271
for Temp. (Col. 4), = 30.095 - 0.074
Mean at Station, corrected, and at 32°, = 30.0328
Correction for height, 116 feet above Mean Sea-level, = 0.127
Mean, reduced to 32°, and Sea-level, = 30.1525
Highest Reading, corrected for Index error, on the 8 th, = 30.446
Lowest Do. Do., on the 29 th, = 29.670
Difference, or Monthly Range, = 0.776

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 19 th, = 68.0
Lowest in Month, corrected for Index errors, on the 30 th, = 35.5
Difference, or Monthly Range, = 32.5
“Corrected Mean” of all the Highest, (Col. 5), = 60.9
“Corrected Mean” of all the Lowest, (Col. 6), = 45.3
Difference, or Mean Daily Range, = 15.6
** Calculated Mean Temperature of Month, = 53.1
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), = 51.3
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 49.4
†† Computed Temperature of Dew-Point, = 47.4
†† Do. Elastic Force of Vapour, = 3.29
†† Do. Weight of Vapour in a Cubic Foot of Air, =
†† Relative Humidity, (Saturation = 100), = 87
RAIN fell on 13 Days; Amount in Inches, = 2.48

WIND.	SUMMARY.										Mean Force.	Mean Velocity in miles per day.
	Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.		
A.M.		0	5	3	3	1	3	8	4	3	0.58	
P.M.		0	2	5	0	0	2	5	4	12	0.53	
Mean.		0	4	4	1	1	2	7	4	7	0.53	

Observations made and
Return verified by

James Kay

(Signed)

James Kay
J.K. J.K.

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *Barone Cottage, Rothsay*, County of *Dumfries*, in Lat. *55° 49' 50"* Long. *5° 4' 5"*, Distance from Sea *10* miles.
Height of Cistern of the Barometer above Mean Sea-level *116* feet, above Ground *3* feet. During the MONTH of *October* 188*8*.

The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				RAIN.		WIND.				CLOUDS.				THERMOMETERS under Ground.				SEA.	OZONE.	GENERAL REMARKS.		Days of Month.				
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs. Grass.		9 h. A.M.		9 h. P.M.		No. of hours in which it fell.	Amount in inches.	9 h. A.M.		9 h. P.M.		Readings of the H.C. Anemometer.	9 A.M.		P.M.		No. 3 inches.	No. 12 inches.	No. 22 inches.						Temperature of WELL at depth of feet, 50.	Temperature and Density.	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).	Amount (0-10), and Species.	Velocity (0-10).	Amount (0-10), and Species.												
		* No.	inches.	°	inches.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°						°	°	°	°
1	29.614	48	29.486	46	52.5	24.5			40.8	39.5	35.2	23.2			NW	5	NW	1															1			
2	29.182	45	29.174	47	53.9	35			42.2	41.2	44.2	42.2	.020		NW	1	E	1.5															2			
3	29.440	47	29.540	49	52.5	34			40	40	39.5	38	.040		NW	1.5	calm																	3		
4	29.316	49	29.484	45	48.5	31			43.5	41.5	35.2	32.5	.070		NW	1.5	NW	1																4		
5	29.476	45	29.636	45	48	25			44.5	41	36.3	35			NW	1.5	NW	5																5		
6	29.860	43	30.040	45	50.5	25.5			43	39	38	35.5	.005		NW	5	NW	5																6		
7	30.510	44	30.160	49	53.5	36.2			44.5	43	47	46	.040		SE	?	calm																	7		
8	30.130	48	30.112	52	52	42.5			49.5	48.5	49.5	48	.005		NW	?	NW	5																8		
9	30.084	50	30.070	52	52	42.8			50.6	49.2	48	47			NW	5	calm																	9		
10	30.044	51	30.050	53	52	44.5			49.2	47.8	45.5	44.5			NW	?	calm																	10		
11	30.034	49	29.980	52	51	38			44	42.5	50	49	.240		NW	5	NW	2																11		
12	29.750	52	29.772	51	53.6	44			52.5	52	45	40.8	.068		SW	?	NW	1																12		
13	29.914	49	30.048	47	51.5	26.5			45.5	41	38	35.4			NW	2	NW	5																13		
14	30.112	47	30.112	49	51.2	24.2			44.5	42	48	46	.010		W	5	NW	5																14		
15	30.184	51	30.238	52	53	46.6			50.5	49.8	47	46.3	.030		SW	1	calm																	15		
16	30.238	52	30.230	52	53.2	42			50	48.6	42.5	42			W	5	calm																	16		
17	30.210	50	30.154	50	51.5	28.2			46	45.5	40.5	45.3			calm		?																	17		
18	30.084	49	30.064	51	52.6	44			48.5	46.5	40.2	45.5	.010		SE	1	calm																	18		
19	30.128	51	30.198	53	53.6	45			51	49.2	45	44	.035		S	5	calm																	19		
20	30.294	51	30.360	52	52.6	43.2			49	48.5	42.2	48	.005		calm		E	1																20		
21	30.404	51	30.430	50	57.5	45			51	49.5	45.5	44.2	.005		NE	1	NE	5																21		
22	30.380	50	30.240	49	50.5	41.5			43.2	42.2	42.6	42			ENE	?	NW																	22		
23	30.142	50	30.050	57	55.2	42			48.8	47.6	48.5	47			SW	5	WSW	5																23		
24	29.884	50	29.764	51	52.5	42.2			48.5	47	50.5	49.6	.050		SE	5	W	?																24		
25	29.620	54	29.556	55	56	49.5			53	52	54.5	54	.400		S	1.2	SSW	2																25		
26	29.612	56	29.652	57	64	52			56.2	55.2	55	55	.395		SSW	5	SW	2																26		
27	29.710	57	29.760	61	57.2	54.5			57	57	57	56.5	.072		S	2	S	2																27		
28	29.640	57	29.654	57	58	49.5			56	55.5	50.5	48.5	.440		SE	1.5	SW	1.5																28		
29	29.862	53	29.892	53	55	46.5			50.8	50.2	48.5	45.5	.005		SW	1.5	SW	5																29		
30	29.720	52	29.564	52	56.2	44.5			52	50.2	46.5	44.5	.320		SE	1	SW	1																30		
31	29.470	51	29.554	50	52.5	42.5			49.5	45	43.8		.110		W	1	OW	5																31		
		12.138	12	12.178	12	149	148			149	149	173	168		2.365																					
		51.4	0.3	28.024	33	9.7	1.5			4.3	2.0	4.9	5.0		22		23.5	20.5																		
		27		28		13	5			26	21	77	13																							
		29.888	50.1	29.904	51.1	54.5	41.8			48.5	46.8	45.8	44.4				0.87	0.68																		

BAROMETER, “corrected Mean” at 9 A.M., minus the Correction† for Temp. (Col. 2), = *29.888* - *0.058* = *29.830*
Corrected Mean” of Barometer at 9 P.M., minus the Correction† for Temp. (Col. 4), = *29.904* - *0.060* = *29.844*
Mean at Station, corrected, and at 32°, = *29.837*
Correction for height, *116* feet above Mean Sea-level, = *1.27*
Mean, reduced to 32°, and Sea-level, = *29.964*
Highest Reading, corrected for Index error, on the *21st*, = *30.430*
Lowest Do. Do., on the *2nd*, = *29.174*
Difference, or Monthly Range, = *1.256*

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the *26th*, = *64.0*
Lowest in Month, corrected for Index errors, on the *4th*, = *31.0*
Difference, or Monthly Range, = *33.0*
“Corrected Mean” of all the Highest, (Col. 5), = *54.5*
“Corrected Mean” of all the Lowest, (Col. 6), = *41.8*
Difference, or Mean Daily Range, = *12.7*
** Calculated Mean Temperature of Month, = *48.2*
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), = *47.2*
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = *45.6*
† Computed Temperature of Dew-Point, = *43.9*
† Do. Elastic Force of Vapour, = *2.87*
† Do. Weight of Vapour in a Cubic Foot of Air, = *89*
† Relative Humidity, (Saturation = 100), = *89*
RAIN fell on *22* Days; Amount in Inches, = *2.36*

WIND.		SUMMARY.									
Direction.		N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.
A.M.		3	1	0	2	4	4	9	6	2	0.87
P.M.		0	1	2	0	2	5	2	10	9	0.68
Mean.		2	1	1	1	3	4	6	8	5	0.78 = 0.61 lb.

Observations made and
Return verified by

James Hay

(Signed)

James Hay

MA.

J. G. E.

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Barone Cottage, Rothbar, County of Bute, in Lat. 55° 49' 50", Long. 5° 4' 5", Distance from Sea miles.
 Height of Cistern of the Barometer above Mean Sea-level 116 feet, above Ground 3 feet. During the MONTH of November 1888.
 The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				RAIN.		WIND.				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.						
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulb, on Sun's rays.		9 h. A.M.		9 h. P.M.		No. of hours in which it fell.	Amount in inches.	9 h. A.M.		9 h. P.M.		Readings of the H. Cup Anemometer.	9 A.M.		P.M.		SUNSHINE. Hours.	9 h. A.M.						Temperature of Well at 5 feet below surface.	Temperature of Air at 5 feet above surface, and Dew.	9 A.M.	9 P.M.		
		Barometer.	Atmospheric.	Barometer.	Atmospheric.	Max.	Min.	Max.	Min.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.			Direction.	Force.	Direction.	Force.		Velocity (0-10), and Direction.	Amount (0-10), and Direction.	Velocity (0-10), and Direction.	Amount (0-10), and Direction.		No. 8 inches.										No. 12 inches.	No. 22 inches.
		* No.	inches.	°	inches.	°	No.	No.	No.	No.	°	°	°	°	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.						No.	No.	No.	No.	No.	No.
1	29.610	49	29.810	48	50.537	5			40	39.3	43	40		0.06	NE	5	NE	5														Between 9 am & 9 pm	1				
2	29.830	45	29.772	46	50.640				45.5	41	45	42			NE	5	NE	1.5														1/2 clear showers p.m.	2				
3	29.806	49	29.840	47	50	44			46	44.5	44.5	42.5		0.05	E	2	E	1														Dull blowy	3				
4	29.808	47	29.774	48	49.543				46	43	44.5	42.5			E	1.5	E	1															cloudy "	4			
5	29.870	47	29.976	48	47	42.5			44.2	41.2	45	42.5			NY	1.5	NE	1															1/2 clear " cold	5			
6	30.008	45	29.960	44	47.638				41	37	38.5	35.5			E	1.5	NE	1															cloudy "	6			
7	29.920	45	29.824	45	45	38			42.2	38	41	38			NE	1	NE	2																3 clear " fine	7		
8	29.820	43	29.830	45	46	39.5			41	36.6	39.5	37		0.20	E	1.5	E	1																1/2 " " cold	8		
9	29.790	44	29.780	45	44.238				41.8	40.5	40	38		2.65	ENE	1	SE	1.5																Dull " "	9		
10	29.640	44	29.460	46	46.339				42.2	39.8	43	42		2.80	ESE	1.5	SE	1.5																" " wet	10		
11	29.624	47	29.744	49	53.241				47	46	45.6	44		0.30	S	5	SE	1																" " cold	11		
12	29.622	46	29.384	48	47.538				42.2	41.5	45.5	44		5.10	E	1	SE	1.5																1/2 clear showers	12		
13	29.380	49	29.390	52	49	45			48.5	47.5	45.5	45		2.60	ENE	5	E	5																Dull blowy cold	13		
14	29.500	50	29.772	51	53	34.5			49	48	47	44.5		1.75	SW	5	SW	1																" " damp	14		
15	29.480	50	29.810	51	54	45			50.2	48.8	48.5	46		1.15	S	1	ESE	5																" " showers p.m.	15		
16	29.144	52	29.566	50	55.545				53	47.5	48	43		2.35	SSW	3	SW	1																" " p.m.	16		
17	29.416	47	29.672	47	47.537				42.8	39.8	42.5	40		0.70	W	2	NYW	1.5																" " stormy showers	17		
18	29.698	47	29.664	51	51.338				48	46.6	48.5	47.5		1.20	SW	5	WSW	1																	1/2 clear " " gusty "	18	
19	29.524	52	29.384	50	52.641				50	49	43	38		2.70	SW	1	W	3																	1/2 " " blowy showers	19	
20	29.286	44	29.540	44	44.235				35.8	35.2	39	36.8		5.35	W	5	YW	3																	Dull stormy showers	20	
21	29.700	44	29.834	46	47	37.2			44	41.5	45	44		7.10	WNW	2	SW	2																	" " fierce blasts, sleet hail	21	
22	29.640	50	29.660	53	52.642				50.2	49.3	47.5	46.5		3.60	SW	2	WNW	3																	" " blowy showers	22	
23	29.632	50	29.710	48	49	44.5			46	43	44.5	43.5		7.90	WSW	2	WSW	5																	stormy wet	23	
24	29.556	50	29.558	53	53	44			47	46.5	51	50.8		6.90	SW	5	W	1																	blowdy showers	24	
25	29.260	53	29.180	50	55.240				54.5	51.5	40.5	39		3.08	SSW	3	WSW	2																	Dull & wet	25	
26	29.220	46	29.372	44	43.332				41	39	32.2	30.6		1.05	WSW	1.5	NW	5																	" " blowy showers	26	
27	29.200	42	29.099	42	40	31.5			37	35.6	37	36		0.98	RNE	1	calm	—																	" " & wet	27	
28	29.358	40	29.460	40	43.633				34.5	33.3	35.6	33.8			calm	—	E	1																	showers p.m.	28	
29	29.400	39	29.350	42	42	35.3			37.2	36.2	41	39.5		0.35	NE	1.5	E	1.5																	2 c o o	29	
30	29.300	43	29.440	42	42	38.5			41.5	40	39.2	37.5			ENE	1	N	5																	Dull blowy cold sleet sho.	30	
31																																				cloudy & fine	31
Sums.		107	12	115	12	107	157			132	126	122	110		60.18																						
Means.		17	19	18	21	25	29			13	6	9	3		23																						
† Total Corrections for Instrumental Errors.																																					
† Corrections for Diurnal Range.																																					
"Corrected Means."																																					
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						

Notation used in general remarks.

a. denotes aurora.

ci. cirrus.

ci.-cu. cirro-cumulus.

ci.-s. cirro-stratus.

cu. cumulus.

cu.-s. cumulo-stratus.

d. dew.

f. fog.

fr. frost.

h.-fr. hoar-frost.

h. haze.

h. d. heavy dew.

h. hail.

l. lightning.

li. cl. light clouds.

li. sh. light showers.

lu. co. lunar corona.

lu. la. lunar halo.

m. denotes meteor.

ms. meteors.

n. nimbus.

r. rain.

h. r. heavy rain.

c. h. r. continued heavy rain.

s. stratus.

sq. squall.

s. sleet.

so. h. solar halo.

sq. squall.

sgs. squalls.

t. thunder.

i. s. thunder storm.

w. wind.

g. gale of wind.

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

Very light air

1

Light air

1.5

Light breeze

2

Fresh breeze

3

Very fresh

4

Blowing hard

5

Blowing a gale

6

Violent gale

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction†† for Temp. (Col. 2), = 29.573 - 0.48 = 29.525
 Corrected Mean of Barometer at 9 P.M., minus the Correction†† for Temp. (Col. 4), = 29.517 - 0.49 = 29.568
 Mean at Station, corrected, and at 32°, = 29.5465
 Correction for height, 116 feet above Mean Sea-level, = .127
 Mean, reduced to 32°, and Sea-level, = 29.673
 Highest Reading, corrected for Index error, on the 6 th, = 30.008
 Lowest Do. Do., on the 27 th, = 29.090
 Difference, or Monthly Range, = 0.918

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 16 th, = 55.5
 Lowest in Month, corrected for Index errors, on the 27 th, = 31.5
 Difference, or Monthly Range, = 24.0
 "Corrected Mean" of all the Highest, (Col. 5), = 48.5
 "Corrected Mean" of all the Lowest, (Col. 6), = 39.8
 Difference, or Mean Daily Range, = 8.7
 ** Calculated Mean Temperature of Month, = 44.25
 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), = 43.8
 Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 41.6
 ‡ Computed Temperature of Dew-Point, = 39.0
 ‡ Do. Elastic Force of Vapour, = 239
 ‡ Do. Weight of Vapour in a Cubic Foot of Air, ... =
 ‡ Relative Humidity, (Saturation = 100), = 83
 RAIN fell on 23 Days; Amount in Inches, = 6.02

WIND.		SUMMARY.				
Direction.		N	NE	E	SE	S
A.M.		0	4	10	0	4
P.M.		1	5	4	0	3
Mean.		1	4	7	2	4

* 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 Glaisher's Hygrometrical Tables, Second Edition only.
 While the Diurnal Range is unknown, the Arithmetical Mean of Cols. 2 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.

Observations made and Return verified by James Hay (Signed) James Hay
 J.E.

OBSERVATIONS,

turning of the scale of every instrument ; the rejection of *Thermometers*, the frameworks of which are not likely to stand exposure to the weather, as shown in the past by repeated and annoying breakages of the thermometers of similar construction ; and as regards *Maximum Thermometers*, either *Negretti and Zamboni*, or *Phillips's*, which are the only ones that will act at the highest temperatures they may be required to observe, by the laws of the *Code* 35, and the *Regulation* of the *Secretary*, and advise with him according to the purchase of instruments.

Very great care should be bestowed on the Observations of the *Wind*. Wind the accuracy of which both as regards *Direction* and *Force*, is so essential towards the right discussion of many of the more important problems of the science.

A *Wind-Vane* ought to be elevated at least 12 feet above surrounding objects. When it oscillates necessarily, the mean direction should be taken. In all cases, but especially when the *Vane* is stationary, and when the *Vane* is feeble, reference may be made to the direction of smoke, etc., and well-exposed situations. Careful observations are recommended to be made on the changes in the direction of the wind ; and during the day, extra observations at every hour of *Greenwich* time. Such

be made on the changes in the direction of the wind, and during some observations at every hour of Greenwich time. Such a system of simultaneous observation, pursued at different Stations, likely to give highly valuable and important results, particularly in connection with the system of thickly-planted Stations, over a limited district round Edinburgh called *Storm Stations*, in the course of being established by the Society for the systematic investigation of the relation of the force of the wind to Barometric variations, *RADETSKY*, and other points connected with storms.

The Comed world connects the Hemispherical Cup Anemometer, a self-registering instrument which shows the amount of Wind that passes it per day; from which we can also the mean Velocity of the Wind at the time of the observation may be ascertained. For attending the

Many cases conspire to produce anomalies in Rain Returns, arising partly from the difficulty of obtaining perfectly unobstructed situation for observation, and partly from the defective nature of the instruments used. The Rain-gauge should not be placed on a slope or terrace, but on a level piece of ground, in an open situation as the Observer can secure for it. As it is often difficult to obtain a position free and unobstructed by surrounding objects as is desirable, the gauge should be taken to place it at some distance from shrubs, trees, houses, buildings, or other obstructions, at least as many feet from their base as they are in height. The more important directions, however, are those towards which it is most desirable to have a free exposure, are in the order of their importance, S.W., N.E., S.E., and W. The position of the Gauge must be perfectly level, and fixed so that it will remain level in all weathers, and be at a height of one foot above the ground, and be surrounded by a railing or fence, which will guard it from wind, snow, or frost, and prevent any person from tampering with it.

When it melting, put it to its weight only at the time the instrument is used. It is found that a scale projecting above the rim of the gauge, if being found to be a little high, should be taken to hold the gauge seriously interfering with the proper measurement of the Rain-falls. When a measuring glass is used, care should be taken to hold it quite perpendicular. The Rain Gauge ought to be read daily at 9 A.M. and the reading entered in the Returns of the previous day. If the Gauge is read once a month, the reading is to be made on the first of the month, and the amount entered for the previous month. Snow-falls may, for convenience, be registered in the Rain columns, under the following conditions:—(1) When a Snow-fall occurs, the amount of snow-fall is to be entered in the Rain column.

and the letter S attixed to the depth of water received in Gauge. The depth of the snow must be mentioned in some open place where no drift is observed, and registered in addition to, and as a check upon, the indications of the Rain-Gauge. For wind, rain, and snow, as noted in every column the Observer cannot be too careful to register observations only; and nothing but the particulars of the nature of detection or inference.

Convenient abbreviations for the nomenclature of Clonks will be found the other side. The amount of snow ought not to be

Gauss.

[illegible]

6, S. W. will indicate that the upper strata of Clouds travel with
2. W. extreme velocity from S.W. and those in the lower regions from
S.W. with one-third the speed of the former. Again, in the second
Cloud column, an entry of $\frac{4}{4}$ s.e. will indicate that the higher
regions are covered to the amount of 2, east,
and that the sky is further obscured to the extent of 2-eighths by
lower Clouds of the cumulo stratus kind.

Remarks on peculiar Clouds, accompanied with drawings, will
assist materially in the development of a more exact nomenclature
of Clouds, as well as throw light on the electrical, and other of the
more obscure phenomena of Meteorology.

The approximate number of Hours in which objects in the sun's
rays cast shadows, should be entered in the proper
Sunshine

column.

As the germination and growth of plants generally depend greatly on the temperature of the soil,—its moisture and constancy,—the Council recommend that observations in this interesting department be made at 9 A.M., by Thermometers permanently fixed in the soil, their bulbs being sunk to depths of 3, 12, and 22 inches, and the stems above ground protected from the sun's rays, and fitted with sloping tin collars, to prevent rain water being conveyed to the bulbs by the stems or wooden frames.

A knowledge of the Temperature of the Sea is not only in itself important but in its relations to that of our island, a most important branch of Meteorology. The Council therefore recommend that the Temperature of the Sea be carefully taken by a properly constructed apparatus, from boats, or from the shore, at least once a day, and that, if this be impracticable, 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 normal radiation. At or near the time of high

OBSERVATIONS,

BOOK POST.

122 *George Street*

[illegible]

First	Experimental Birds.	Chickens,
Second	House-Swallows,	Lapwings,
Third	Plovers,	Sand-Martin,
Fourth	Starlings,	Swan,
Fifth	Rail or Corn Crane,	

[illegible]

App	Berry,	.	.	.
Black	Bourtree or Elder,	.	.	.
Che	Broom,	.	.	.
Gec	Hazel,	.	.	.
God	Hawthorn,	.	.	.
Pea	Holly,	.	.	.
Plum	Laburnum,	.	.	.
Str	Lilac,	.	.	.
	Mezereon,	.	.	.
	Mountain Ash or Rowan,	.	.	.
	Red Flowering Currant,	.	.	.
	Rhododendron Ponticum,	.	.	.
	Winn,	.	.	.

100 Wm

To the SECRETARY

1

A circular postmark from THESSALONICA 13 88 is visible on the left. To its right is a rectangular stamp with the number 298 and a central emblem, possibly a coat of arms or a religious symbol, surrounded by decorative borders.

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...the roughness

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valley fresh
was on
the hills of
the

The flower is
 very small
 and the leaves
 are very small
 and the fruit is
 very small

any a boy
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and females
in fact than

24

To the SECRETARY

1

*Wm
Lambert*

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SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Barone Cottage, Buteshire, County of Buteshire, in Lat. 55° 49' 50", Long. 5° 4' 5", Distance from Sea 10 miles.
Height of Cistern of the Barometer above Mean Sea-level 116 feet, above Ground 3 feet. During the MONTH of December 1888.

The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				RAIN.		WIND.				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.	
		9 h. A.M.		9 h. P.M.		Protected in Shade, feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.		No. of hours in which it fell.	Amount in inches.	9 h. A.M.		9 h. P.M.		Readings of the H. Cup Anemometer.	9 A.M.		P.M.		9 h. A.M.								
		Barometer.	Attach- ed Ther- mometer.	Barometer.	Attach- ed Ther- mometer.	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. 3 inches.	No. 12 inches.	No. 22 inches.						
		Barometer.	Attach- ed Ther- mometer.	Barometer.	Attach- ed Ther- mometer.	Max. No.	Min. No.	Max. No.	Min. No.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	Direction.	Force.	Direction.	Force.	9 h. A.M.	9 h. P.M.	9 h. A.M.	9 h. P.M.	Hours.	No. 3 inches.	No. 12 inches.	No. 22 inches.								
		inches.	°	inches.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°							
	1	29.506	44	29.460	47	48	31			28.3	37.2	42.5	41		1.40	calm	—	3	.5			9	10							Dull, wet fern	1		
	2	29.594	45	29.580	47	50.5	42.5			45.5	44.2	44	45.2		.975	3	.5	calm	—			10	10							" wet	2		
	3	29.314	49	29.392	53	54.2	44.2			51	50.5	52	50.8		.286	3	2	SW	.5			10	10							"	3		
	4	29.680	53	29.660	52	53.5	40.5			48.3	47.5	49	48		.110	3W	1	SW	.5			10	10							Cloudy fine	4		
	5	29.740	51	29.824	51	52.3	45.5			50.5	50.2	40.5	40.3		.140	3	.5	calm	—			10	8							" Damp	5		
	6	29.960	51	29.820	51	51.3	40			48.8	48	50.5	49.8		.068	SE	.5	SE	1			9	10							Dull mild	6		
	7	29.630	50	29.660	51	52.5	45.5			48.5	46.5	40	45		.100	SE	1.5	W	1			10	—							" damp clear fern	7		
	8	30.000	47	29.960	48	48.5	38.5			42.8	41	54.2	41		.150	3W	.5	W	.5			8	5							1/2 clear showers	8		
	9	30.140	44	30.224	44	46.6	35.2			35	34	37.5	36.2		.005	WNW	.5	WNW	.5			—	5							3/4 " fine "	9		
	10	30.240	42	30.180	41	46.5	32.5			32.8	32.2	32.6	32.5		.010	NW	.5	SE	.5			—	—							1/2 " frosty	10		
	11	30.040	41	30.004	43	49.2	26.2			38	35.5	36	37.2		.190	SE	.5	SE	.5			9	10							Dull, dark, damp	11		
	12	30.100	43	30.110	47	45.5	27.5			40	39.2	42.6	42.5		—	SE	.5	SE	1			8	10							1/2 clear heavy, low	12		
	13	30.060	44	30.000	45	45.3	40.5			42.2	41	42.5	40.5		.215	SE	.5	S	1.5			10	8							Dull & dark	13		
	14	30.020	46	30.204	45	47.3	35			46.2	45.5	35	34		—	SW	.5	NW	.5			10	1							1/2 fern	14		
	15	30.324	42	30.350	45	45	32			32.8	32.2	42	42		.122	calm	—	NW	.5			3	5							1/2 clear changeable	15		
	16	30.320	45	30.320	46	45.5	42			44.2	43	44	42.5		—	W	1	WSW	1			10	10							Cloudy chilly	16		
	17	30.180	44	30.134	45	46.5	40			45.2	44.8	40.2	38		—	SW	.5	SW	.5			10	9							1/2 clear fine	17		
	18	30.000	45	29.750	44	45.3	38			38.5	36.8	40.5	39		—	S	.5	SE	.5			8	10							3/4 " "	18		
	19	29.530	45	29.284	53	51.3	40.5			49.2	48	50	49		.220	SE	1.5	S	2			10	10							Dull cloudy damp	19		
	20	29.380	46	29.250	47	50.5	39.5			40.2	39.8	41.2	41.2		.040	calm	—	S	.5			10	10							" "	20		
	21	28.990	45	28.824	49	47.2	38.5			40	38	46.2	45		.212	SE	1	SE	2			5	10							" wet fern	21		
	22	28.980	48	29.260	48	49	44.5			46.5	45.5	46	44		—	E	1	E	.5			10	10							" heavy	22		
	23	29.414	48	29.260	47	47.6	43			44	42	44.3	43.2		.140	SE	.5	SE	1			6	10							1/2 clear showers	23		
	24	29.070	49	29.280	46	46	35			42.5	41	34.5	32.8		.100	SW	.5	N	1			10	—							3/4 clear showers	24		
	25	29.350	42	29.104	48	43.5	33.5			36	34.6	41.5	38.5		.365	SE	1	W	2			2	5							Dull wet fern	25		
	26	29.440	43	29.624	43	43	34.2			36.2	34	36	35		.225	WSW	.5	W	.5			2	5							1/2 snow & hail sho. fern	26		
	27	29.500	42	29.180	42	42	33.5			36	34	40.3	38.2		.230	SE	1	SW	1			9	8							Dull dark sho. fern	27		
	28	29.250	43	29.040	41	44	34			38.2	36.6	35.2	32.2		—	NW	.5	NW	.5			2	—							3/4 fine	28		
	29	29.890	40	29.064	41	43.6	28.5			32.8	31.5	28.5	28		—	NE	.5	calm	—			1	—							Clear fine frosty	29		
	30	30.090	36	29.984	39	34	26			26.5	25	30.5	30		—	calm	—	calm	—			—	—							20		30	
	31	29.600	40	29.764	42	44.3	30.5			29.5	38	43	42.5		.240	SW	.5	W	.5			9	2							Dull & cool stormy	31		
Sums.		12	12	13	15	15	13			36	30.6	51.6	137		4.263		20.0		22.5			220	209										
Means.		29.731	449	29.725	461	46.8	37.7			41.2	39.9	41.7	40.4		22		0.65		0.73			7.1	67										
† Total Corrections for Instrumental Errors.																																	
† Corrections for Diurnal Range.																																	
"Corrected Means."																																	
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		

NOTATION USED IN GENERAL REMARKS.

a.	denotes aurora.	m.	denotes meteor.
cl.	" cirrus.	ms.	" micrometeor.
cl.-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.	" squall.
fr.	" frost.	s.	" snow.
h.-fr.	" hoar-frost.	s.	" sleet.
h.	" haze.	so.ha.	" solar halo.
h. d.	" heavy dew.	sq.	" squall.
h.	" hail.	squ.	" squalls.
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. ha.	" 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	Calm	1.5	Light breeze	4	Blowing hard
0.5	Very light air	2	Fresh breeze	5	Blowing a gale
1	Light air	3	Very fresh	6	Violent gale

NOTATION USED IN GENERAL REMARKS.

a.	denotes aurora.	m.	denotes meteor.
ci.	" cirrus.	ms.	" meteoric.
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.	" squall.
fr.	" frost.	st.	" sleet.
h.-fr.	" hoar-frost.	s.	" snow.
h.	" haze.	so. h.	" solar halo.
h. d.	" heavy dew.	sq.	" squall.
h. l.	" hail.	t. s.	" thunder.
l.	" lightning.	t. s.	" thunder storm.
li. cl.	" light clouds.	w.	" wind.
li. sh.	" light showers.	g.	" gale of wind.
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0	Calm	1.5	Light breeze	4	Blowing hard
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†† = 29.687
for Temp. (Col. 2), = 29.731 — 0.044
Corrected Mean" of Barometer at 9 P.M., minus the Correction†† = 29.679
for Temp. (Col. 4), = 29.725 — 0.046
Mean at Station, corrected, and at 32° = 29.683
Correction for height, 116 feet above Mean Sea-level, = .127
Mean, reduced to 32°, and Sea-level, = 29.810
Highest Reading, corrected for Index error, on the 15th, = 30.350
Lowest Do. Do., on the 21st, = 28.824
Difference, or Monthly Range, = 1.526

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 3th, = 54.2
Lowest in Month, corrected for Index errors, on the 30th, = 26.0
Difference, or Monthly Range, = 28.2
"Corrected Mean" of all the Highest, (Col. 5), = 46.8
"Corrected Mean" of all the Lowest, (Col. 6), = 38.7
Difference, or Mean Daily Range, = 8.1
** Calculated Mean Temperature of Month, = 42.43
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), = 41.4
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 40.2
†† Computed Temperature of Dew-Point, = 38.7
†† Do. Elastic Force of Vapour, = .235
†† Do. Weight of Vapour in a Cubic Foot of Air, =
†† Relative Humidity, (Saturation = 100), = 91
RAIN fell on 22 Days; Amount in Inches, = 4.26

WIND.		SUMMARY.									
Direction.		N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.
A.M.		1	13	4	10	4	2	2	2		0.65
P.M.		1	0	1	8	5	3	7	3		0.73
Mean.		1	0	2	6	8	4	5	3		0.69 = 0.48

Observations made and Return verified by

James Kay

(Signed)

James Kay

J. G.

