

## SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *Forest of Glen Tura*, County of *Abertoe*, in Lat. *55° 32'*, Long. *2° 32'*, Distance from Sea *35* miles.  
Height of Cistern of the Barometer above Mean Sea-level *100* feet, above Ground *100* feet.  
During the MONTH of *January* 188*6*.  
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.		9 A.M.		P.M.		9 h. A.M.							
		Barometer.	Attached Thermometer.	Barometer.	Attached Thermometer.	Max. No.	Min. No.	Max. in Sun's rays.	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.			Direction.	Force.	Direction.	Force.	Velocity (0-6), 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.					
																															* No.
		inches.	°	inches.	°	°	°	°	°	°	°	°	°	°																	
1	29.39	46	29.12	49	33	47			33	49	31	47			W	2	W	1	W	3	W	2	4							1	
2	29.45	47	29.14	46	32	33			30	47	36	34			W	0	NW	1	W	3	NW	1	3							2	
3	29.24	42	29.2	44	32	39			45	43	39	40			W	1	NW	1	W	5	NW	0	0								3
4	29.10	41	29.2	41	40	29			36	42	33	30			NW	1	NW	1	W	2	NW	2	0								4
5	28.90	40	29.32	40	35	25			38	33	26	28	0.05	5	N	1	N	1	N	3	N	5	6								5
6	29.81	39	29.81	39	29	19			28	27	20	19	0.20	5	N	0	N	1	N	1	N	1	2								6
7	29.65	36	29.13	37	39	8			29	29	39	35	0.14	5	NW	2	NW	3	NW	5	NW	3	2								7
8	29.12	37	29.48	37	40	28			30	30	29	29			NW	2	NW	4	NW	5	NW	2	4								8
9	29.75	36	29.87	36	36	33			30	30	30	30			NW	1	NW	1	NW	1	NW	5	1 1/2								9
10	29.69	34	29.35	36	35	19			29	29	30	30			NE	0	NE	1	NE	4	NE	5	1								10
11	29.60	37	29.69	38	39	28			36	36	30	29			N	1	N	1	N	5	N	3	1								11
12	29.63	37	29.40	40	48	28			40	38	44	39	0.02	2	N	1	NW	1	W	7	NW	4	1								12
13	28.98	40	29.49	41	46	35			36	33	35	33			W	0	NW	1	N	3	NW	5	1								13
14	29.74	40	29.32	44	48	29			36	30	45	43			W	2	W	1	W	4	NW	3	0								14
15	29.05	42	28.93	41	44	30			38	35	37	37	0.04	6	W	1	W	1	W	1	W	4	4								15
16	29.01	39	28.69	39	37	30			31	30	32	32			NW	1	W	1	W	1	W	2	1								16
17	28.78	38	28.70	34	35	25			33	33	28	27			NW	1	NW	0	NW	2	NW	5	5								17
18	28.80	32	28.89	32	32	10			15	15	12	10			E	0	SE	0	E	1	0	0	5								18
19	29.11	33	29.08	34	37	6			37	31	30	29			W	1	W	0	W	6	SW	7	1								19
20	29.52	33	29.60	34	38	17			37	27	32	32			NW	1	NE	1	NW	4	NE	3	2								20
21	29.37	35	29.34	39	35	30			33	33	33	33			NE	0	NE	0	NE	6	NE	6	2								21
22	29.54	39	29.65	40	35	28			33	33	33	33			N	0	N	0	N	7	N	6	1								22
23	29.62	39	29.50	39	35	28			33	32	32	32	0.33	8	NE	0	N	0	NE	7	N	7	0								23
24	29.57	40	29.54	39	34	31			33	33	32	31	0.30	5	E	0	E	0	E	9	E	9	0								24
25	29.51	39	29.48	40	34	29			33	32	33	32	0.11	1	E	0	E	0	E	8	E	8	0								25
26	29.51	41	29.51	40	35	32			34	33	33	33	0.16	1	E	0	E	0	E	8	E	8	0								26
27	29.60	40	29.72	40	39	32			38	37	36	35			S	1	S	1	S	7	S	7	0								27
28	29.57	39	29.52	40	36	32			35	34	35	32	0.13	1	S	1	W	1	S	8	W	7	0								28
29	29.30	39	29.17	40	36	32			35	35	35	34			NW	1	SE	1	NW	8	SE	7	0								29
30	29.15	39	29.12	40	38	29			33	31	30	29	0.12	1	W	1	W	1	W	5	W	1	5								30
31	29.04	39	28.90	40	35	28			32	31	30	29			W	1	W	1	W	3	0	0	5								31
Sums.	1110	268	1012	289	274	33			123	92	86	44	23		24	27															
Means.	29.358	38.6	29.326	39.3	38.8	26.9			34.2	33.0	32.8	31.4			877	487															
† 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.	aurora.	m.	meteor.		
ci.	cirrus.	ms.	meteors.		
ci-cu.	cirro-cumulus.	n.	nimbus.		
ci-s.	cirro-stratus.	r.	rain.		
cu.	cumulus.	h. r.	heavy rain.		
cu-s.	cumulo-stratus.	c. h. r.	continued heavy rain.		
d.	dew.	s.	stratus.		
f.	fog.	sc.	scud.		
fr.	frost.	s.	sleet.		
h-fr.	hoar-frost.	s.	snow.		
h.	haze.	so. h.	solar halo.		
h. d.	heavy dew.	sq.	squall.		
hl.	hail.	sq.	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. h.	lunar halo.				

TABLE FOR ESTIMATING FORCE OF WIND.					
Estimated Force, 0-6.	Common Designation.	Estimated Force, 0-6.	Common Designation.	Estimated Force, 0-6.	Common Designation.
0	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†† = *29.332*  
for Temp. (Col. 2), = *29.358* — *2.6*  
Corrected Mean” of Barometer at 9 P.M., minus the Correction†† = *29.298*  
for Temp. (Col. 4), = *29.326* — *2.8*  
Mean at Station, corrected, and at 32° = *29.315*  
Correction for height, feet above Mean Sea-level, =  
Mean, reduced to 32°, and Sea-level, =  
Highest Reading, corrected for Index error, on the 9 th, = *29.890*  
Lowest Do. Do., on the 16 th, = *28.690*  
Difference, or Monthly Range, = *1.200*

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 1 th, = *53.0*  
Lowest in Month, corrected for Index errors, on the 19 th, = *6.0*  
Difference, or Monthly Range, = *47.0*  
“Corrected Mean” of all the Highest, (Col. 5), = *38.8*  
“Corrected Mean” of all the Lowest, (Col. 6), = *26.9*  
Difference, or Mean Daily Range, = *11.9*  
\*\* Calculated Mean Temperature of Month, = *32.8*

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), = *33.5*  
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = *32.2*  
† Computed Temperature of Dew-Point, = *29.8*  
† Do. Elastic Force of Vapour, = *165*  
† Do. Weight of Vapour in a Cubic Foot of Air, =  
† Relative Humidity, (Saturation = 100), = *86*  
RAIN fell on 10 Days; Amount in Inches, = *2.23*

WIND.		SUMMARY.									
Direction.		N	NE	E	SE	S	SW	W	NW	Mean Force.	Mean Velocity in miles per day.
A.M.		5	3	4		2		9	8	0.77	
P.M.		5	3	3	2	1		8	9	0.87	
Mean.		5	3	3	1	2	0	9	8	0.82	

(Signed) *Robert W. Robertson*

Observations made and  
Return verified by







## SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *Stirling*, County of *Perth*, in Lat. *56° 05' N*, Long. *3° 55' W*, Distance from Sea *10* miles.Height of Cistern of the Barometer above Mean Sea-level *10* feet, above Ground *10* feet.During the MONTH of *February* 188*6*.

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 A.M.		P.M.		SUNSHINE. Hours.	9 h. A.M.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
		Barometer. No. —	Attach- ed Ther- mometer	Barometer. No. —	Attach- ed Ther- mometer	Max. No.	Min. No.	Max. in Sun's rays	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.			Direction.	Force.	Direction.	Force.		Velocity (0—10), and Direction.	Amount (0—10), and Species.	Velocity (0—10), and Direction.	Amount (0—10), and Species.		No. 1 inches.					No. 2 inches.	No. 3 inches.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
		inches.	°	inches.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°					°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction†† for Temp. (Col. 2), = *29.881* — *2.9* = *29.852*  
Corrected Mean "of Barometer at 9 P.M., minus the Correction†† for Temp. (Col. 4), = *29.882* — *3.3* = *29.850*  
Mean at Station, corrected, and at 32°, = *29.850*  
Correction for height, feet above Mean Sea-level, = *10*  
Mean, reduced to 32°, and Sea-level, = *30.260*  
Highest Reading, corrected for Index error, on the 23th, = *28.770*  
Lowest Do. Do., on the 1th, = *28.770*  
Difference, or Monthly Range, = *1.490*

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 8th, = *49.0*  
Lowest in Month, corrected for Index errors, on the 5th, = *10.0*  
Difference, or Monthly Range, = *39.0*  
"Corrected Mean" of all the Highest, (Col. 5), = *39.0*  
"Corrected Mean" of all the Lowest, (Col. 6), = *25.7*  
Difference, or Mean Daily Range, = *13.3*  
\*\* Calculated Mean Temperature of Month, = *32.4*

S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 1th, = *5*  
"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, = *5*  
Lowest at Night, Black Bulb, (corrected for Index errors), on the 1th, = *5*  
"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, = *5*  
Difference of above Means or Range ("exposed"), = *5*

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = *32.7*  
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = *31.6*  
† Computed Temperature of Dew-Point, = *29.4*  
† Do. Elastic Force of Vapour, = *1.63*  
† Do. Weight of Vapour in a Cubic Foot of Air, = *87*  
† Relative Humidity, (Saturation = 100), = *87*  
RAIN fell on 10 Days; Amount in Inches, = *1.58*

WIND.		SUMMARY.									
Direction.		N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.
A.M.		2	2	2	1	2	6	6	4		
P.M.		1	2	2	3	4	7	5	4		
Mean.		2	2	2	4	3	6	5	4	0	

\* 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.  
†† These "Hygrometrical Deductions" are calculated from Glaisher's Hygrometrical Tables, Second Edition only.  
‡ While the Diurnal Range is unknown, the Arithmetical Mean of Cols. 5 and 6 will be entered as the "Calculated Mean Temperature." Any Observations not taken under the conditions specified in the Directions on the other side, or noted at the Top of each column, must be marked as such by the observer, in each Schedule. See over.

Observations made and  
Return verified by

(Signed) *R. Harrison*







## SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *Forest of Glen Tana*, County of *Aberdeenshire*, in Lat. \_\_\_\_\_, Long. \_\_\_\_\_, Distance from Sea *35* miles.  
Height of Cistern of the Barometer above Mean Sea-level \_\_\_\_\_ feet, above Ground \_\_\_\_\_ feet. During the MONTH of *March* 188*6*.  
The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER. No. —				WIND.				RAIN.		CLOUDS.				SUNSHINE. Hours.	THERMOMETERS under Ground.			SEA. Temperature at 1 fathom, and Density.	OZONE. 0—10.	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.		9 h. A.M.		9 h. P.M.		Readings of the H. Cup Anemometer. No. —		No. of hours in which it fell.	No. —	9 A.M.			P.M.		9 h. A.M.					Temperature of WELL at depth of feet. No.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
		Barometer. * No. —	Attach- ed Ther- mometer	Barometer. No. —	Attach- ed Ther- mometer	Max. No.	Min. No.	Max. in Sun/shade	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	Direc- tion.	Force	Direc- tion.	Force	No. —	No. —			Velocity (0—6), and Direc- tion.	Amount, (6—10), and Species.		Velocity (0—6), and Direc- tion.	Amount, (6—10), and Species.	No. —						No. —	No. —																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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1	29.88	37	30.10	37	33	21			30	30	26	26	E	0	NE	0		0.10		SE	8	SE	8	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															</

BAROMETER, “corrected Mean” at 9 A.M., minus the Correction†† for Temp. (Col. 2), = *29.739* — *28* = *29.711*  
Corrected Mean” of Barometer at 9 P.M., minus the Correction†† for Temp. (Col. 4), = *29.729* — *29* = *29.700*  
Mean at Station, corrected, and at 32°, = *29.706*  
Correction for height, feet above Mean Sea-level, = \_\_\_\_\_  
Mean, reduced to 32°, and Sea-level, = \_\_\_\_\_  
Highest Reading, corrected for Index error, on the *11* th, = *30.370*  
Lowest Do. Do., on the *30* th, = *28.770*  
Difference, or Monthly Range, = *1.600*

\* 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.  
† Embreasing corrections for both capillarity and Index Errors.  
‡ The Diurnal Range for Scotland is as yet unknown.  
§ Practically, though not absolutely a surface correction.  
|| These “Hygrometrical Deductions” are calculated from Glaisher’s Hygrometrical Tables, Second Edition only.  
¶ While the Diurnal Range is unknown, the Arithmetic Mean of Cols. 5 and 6 will be entered as the “Calculated Mean Temperature.”  
Any Observations not taken under the conditions specified in the Directions on the other side, or noted at the Top of each column, must be marked as such by the observer, in each Schedule. See over.

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the *24* th, = *61.0*  
Lowest in Month, corrected for Index errors, on the *5* th, = *12.0*  
Difference, or Monthly Range, = *49.0*  
“Corrected Mean” of all the Highest, (Col. 5), = *51.6*  
“Corrected Mean” of all the Lowest, (Col. 6), = *29.6*  
Difference, or Mean Daily Range, = *12.0*  
\*\* Calculated Mean Temperature of Month, = *35.6*

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

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = *35.3*  
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = *33.8*  
†† Computed Temperature of Dew-Point, = *31.5*  
†† Do. Elastic Force of Vapour, = *1.77*  
†† Do. Weight of Vapour in a Cubic Foot of Air, = \_\_\_\_\_  
†† Relative Humidity, (Saturation = 100), = *86*  
RAIN fell on *20* Days; Amount in Inches, = *2.85*

WIND.		SUMMARY.										
Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.	
A.M.	4	2	4	2	5	7	2	5		0.65		
P.M.	2	3	3	3	3	8	6	3		0.71		
Mean.	3	3	3	3	4	7	4	4	0	0.68		

Observations made and  
Return verified by

(Signed) *Robert Warburton*



Yr James  
March 1808

BOOK POST.



SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Forest of Glen Tonia, County of Murdoch Shire, in Lat. \_\_\_\_\_, Long. \_\_\_\_\_, Distance from Sea \_\_\_\_\_ miles.

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

During the MONTH of April 1886

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 A.M.		P.M.		9 h. A.M.								Temperature of Wet Bulb at depth of feet. No. _____	Temperature at 1 foot and Density.	9 A.M. 9 P.M.																								
		Barometer. * No. _____	Attach- ed Ther- mometer No. _____	Barometer. No. _____	Attach- ed Ther- mometer No. _____	Max. No. _____	Min. No. _____	Max. in Sun rays No. _____	Min. on Grass. No. _____	Dry bulb. No. _____	Wet bulb. No. _____	Dry bulb. No. _____	Wet bulb. 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. _____	No. _____									No. _____																							
																																					inches.	°	inches.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
	1	29.41	41	29.56	44	46	23			42	34	42	40	0.20	W	2	SW	2		W	2	SW	6	4								1																											
	2	29.29	44	29.96	46	53	38			41	43	42	39	0.40	SW	3	SW	2		SW	5	SW	6	6								2																											
	3	29.34	44	29.29	44	51	33			41	36	41	38		SW	2	SW	2		SW	3	SW	5	4								3																											
	4	29.12	44	29.07	43	53	32			46	40	39	38	0.30	SW	2	SW	2		SW	3	SW	1	12								4																											
	5	29.20	44	29.19	45	54	25			42	38	40	37	0.60	SW	1	SW	2		SW	4	W	7	12								5																											
	6	29.11	44	29.21	45	52	34			42	39	40	38		W	2	W	1		W	2	W	1	11								6																											
	7	29.30	44	29.	44	45	28			42	38	42	41		W	1	W	4		W	1	W	4	6								7																											
	8	28.53	42		41	40	38			43	41	40	38		W	1	W	1		W	3	W	2	5								8																											
	9	28.73	42	29.05	41	46	38			42	39	37	31		W	1	W	1		W	1	W	0	8								9																											
	10	29.21	40	29.45	40	46	39			39	36	39	39		SW	1	W	—		SW	4	—	—	8								10																											
	11	29.71	39	29.80	40	44	27			40	39	39	39		W	0	W	—		W	1	—	—	6								11																											
	12	29.77	40	29.80	40	43	29			43	39	38	32		NE	1	W	—		NE	5	—	—	6								12																											
	13	29.95	40			50	27			47	44	47	43		N	1	N	—		N	4	W	3	5								13																											
	14	30.03	43	30.02	42	53	38			47	43	45	42		NE	1	NE	1		NE	5	NE	4	5								14																											
	15	30.14	43	29.07	44	50	37			45	42	42	39		NE	2	NE	1		NE	5	NE	4	6								15																											
	16	30.19	45	30.20	43	49	37			40	33	36	36		NE	2	NE	1		NE	3	NE	2	5								16																											
	17	30.15	43	30.95	41	44	35			43	41	39	37		NE	2	E	1		NE	6	E	1	7								17																											
	18	29.98	40	29.95	40	46	30			42	41	39	39		E	1	E	1		E	8	E	10	5								18																											
	19	29.90	41	29.95	41	42	37			42	40	39	38		E	1	E	1		E	10	E	10									19																											
	20	29.98	41	29.98	38	41	35			38	33	40	39		E	1	E	—		E	10	E	6									20																											
	21	30.01	38	29.95	40	43	27			41	37	36	32		E	—	W	—		E	2	W	2									21																											
	22	29.95	40	29.88	41	51	22			41	37	40	38		NE		SE	1		NE	6	SE	6	8								22																											
	23	29.88	41	29.90	43	50	37			41	40	44	42		N	1	NE	0		N	1	NE	4	7								23																											
	24	29.98	43	30.	42	49	28			41	40	47	44		E	1	SW	1		E	1	SW	2	12								24																											
	25	30.05	45	30.	48	49	30			49	44	41	41		W	1	SW	1		W	1	SW	1	12								25																											
	26	29.99	49	29.80	50	51	30			49	44	45	46		W	6	W	6		W	1	W	6	13								26																											
	27	29.15	53	29.	52	62	41			57	50	51	49		W	1	W	1		W	6	W	4	6								27																											
	28	29.18	52	29.76	47	62	50			41	36	40	36		NE	1	N	1		NE	6	N	1	8								28																											
	29	29.96	45	29.92	45	45	28			39	35	39	36		N	1	N	1		N	1	N	1	8								29																											
	30	29.93	45	29.93	44	47	43			47	41	38	34		N	1	E	1		N	4	E		12								30																											
	31																																31																										
Sums.		1612 2008	9	139 1888	8	10 94	15 59			11 94	12 285	13 27	17 264	0.66		36		29																																									
Means.		29.648	432	29.674	432	48.5	32.0			48.1	395	409	388			120		0.97																																									
† Total Corrections for Instru- mental Errors.																																																											
‡ Corre- ctions for Diurnal Range.																																																											
“Cor- rected 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																												

<b>BAROMETER,</b> "corrected Mean" at 9 A.M., minus the Correction $\uparrow$ )	=	<u>29.609</u>
for Temp. (Col. 2), = <u>29.648</u> - ... <u>29</u> )		
Corrected Mean " of Barometer at 9 P.M., minus the Correction $\uparrow$ )	=	<u>29.635</u>
for Temp. (Col. 4), = <u>29.674</u> - ... <u>29</u> )		
<b>Mean at Station, corrected, and at 32°,</b> .....	=	<u>29.622</u>
Correction for height, feet above Mean Sea-level,.....	=	_____
<b>Mean, reduced to 32°, and Sea-level,</b> .....	=	_____
Highest Reading, corrected for Index error, on the 16 th,.....	=	<u>30.200</u>
Lowest Do. Do., on the 4 th,.....	=	<u>29.020</u>
Difference, or <b>Monthly Range,</b> .....	=	<u>1.180</u>

<b>S.-R. THERMOMETER,</b> (in shade, etc.), <b>Highest in Month,</b> (corrected for Index Errors), on the <u>27</u> th, .....	=	<u>62.0</u>
<b>Lowest in Month,</b> corrected for Index errors, on the <u>22</u> th, .....	=	<u>22.0</u>
Difference, or <b>Monthly Range,</b> .....	=	<u>40.0</u>
" Corrected <b>Mean</b> " of all the <b>Highest,</b> (Col. 5), .....	=	<u>48.5</u>
" Corrected <b>Mean</b> " of all the <b>Lowest,</b> (Col. 6), .....	=	<u>32.0</u>
Difference, or <b>Mean Daily Range,</b> .....	=	<u>16.5</u>
<b>** Calculated Mean Temperature</b> of Month, .....	=	<u>40.2</u>

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

<b>HYGROMETER, Mean</b> (corrected) A.M. and P.M. Reading of <b>Dry Bulb</b> , (Cols. 9 and 11), .....	=	44.0
<b>Mean</b> (corrected) A.M. and P.M. Reading of <b>Wet Bulb</b> , (Cols. 10 and 12), .....	=	39.2
‡ Computed <b>Temperature of Dew-Point</b> , .....	=	36.9
‡ Do. <b>Elastic Force of Vapour</b> , .....	=	2.19
‡ Do. <b>Weight of Vapour in a Cubic Foot of Air</b> , ...	=	
‡ <b>Relative Humidity</b> , (Saturation = 100), .....	=	86
<b>RAIN</b> fell on <u>4</u> Days; Amount in Inches, .....	=	0.66

WIND.		SUMMARY.									
Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.
A.M.	4	7	5			5	9			120	
P.M.	3	4	5	1		7	10			097	
Mean.	4	5	5	1	0	6	9	0	0	1.08	

(Signed) Robert W. Barber

Observations made and  
Return verified by







## SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *Glen Tana Abayne*, County of \_\_\_\_\_, in Lat. \_\_\_\_\_, Long. \_\_\_\_\_, Distance from Sea \_\_\_\_\_ miles.

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

During the MONTH of *MAY* 188*6*.

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.			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.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
		Barometer. * No. _____	Attach- ed Ther- mometer	Barometer. No. _____	Attach- ed Ther- mometer	Max. No.	Min. No.	Max. in Sun's rays	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.			Direction.	Force	Direction.	Force		Velocity (0-6), and Direc- tion.	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.	Temperature of WELL at depth of feet. No. _____	Temperature at 1 fathom, and Density,	9 A.M. 9 P.M.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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BAROMETER, "corrected Mean" at 9 A.M., minus the Correction†† = 29.653  
for Temp. (Col. 2), = 29.702 - 49  
Corrected Mean" of Barometer at 9 P.M., minus the Correction†† = 29.627  
for Temp. (Col. 4), = 29.676 - 49  
Mean at Station, corrected, and at 32°, = 29.640  
Correction for height, feet above Mean Sea-level, = \_\_\_\_\_  
Mean, reduced to 32°, and Sea-level, = \_\_\_\_\_  
Highest Reading, corrected for Index error, on the 2 th, = 30.150  
Lowest Do. Do., on the 18 th, = 29.010  
Difference, or Monthly Range, = 1.140

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 7 th, = 73.0  
Lowest in Month, corrected for Index errors, on the 2 th, = 25.0  
Difference, or Monthly Range, = 48.0  
"Corrected Mean" of all the Highest, (Col. 5), = 55.2  
"Corrected Mean" of all the Lowest, (Col. 6), = 36.8  
Difference, or Mean Daily Range, = 18.4  
\*\* Calculated Mean Temperature of Month, = 45.0

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), = 46.7  
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 42.6  
† Computed Temperature of Dew-Point, = 38.0  
† Do. Elastic Force of Vapour, = .229  
† Do. Weight of Vapour in a Cubic Foot of Air, = \_\_\_\_\_  
† Relative Humidity, (Saturation = 100), = 73  
RAIN fell on 9 Days; Amount in Inches, = 2.97

WIND.		SUMMARY.									
Direction.		N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.
A.M.		3	2	4	2	5	9	5	1		1.10
P.M.		4	5	1	1	6	6	8			0.97
Mean.		3	3	2	2	5	8	6	1	0	1.03

1.06

(Signed)

R. Warburton

Observations made and  
Return verified by







# SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Glen Tana, County of Aberdeen Shire, in Lat. 57° 3', Long. 2° 52', Distance from Sea 36 miles. 36

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

During the MONTH of June 1886

The Hours of Observation are of Greenwich Time.

[illegible]

<b>BAROMETER,</b> "corrected Mean" at 9 A.M., <i>minus</i> the Correction $\uparrow$ )	=	29.646
for Temp. (Col. 2), = 29.741..... - 65)		
Corrected Mean" of Barometer at 9 P.M., <i>minus</i> the Correction $\uparrow$ )	=	29.629
for Temp. (Col. 4), = 29.696.. - 67)		
<b>Mean at Station, corrected, and at 32°,.....</b>	=	29.638
Correction for height, feet above Mean Sea-level,.....	=	
<b>Mean, reduced to 32°, and Sea-level,.....</b>	=	
Highest Reading, corrected for Index error, on the 30 th,.....	=	30.100
Lowest Do. Do. on the 23 th,.....	=	29.230
Difference, or <b>Monthly Range,</b> .....	=	0.870

<b>S.-R. THERMOMETER,</b> (in shade, etc.),	<b>Highest in Month,</b> (corrected for	
Index Errors), on the	30 <sup>th</sup> , .....	= 71.0
<b>Lowest in Month,</b> corrected for Index errors, on the	3 <sup>th</sup> , .....	= 28.0
Difference, or <b>Monthly Range,</b> .....		= 43.0
" Corrected <b>Mean</b> " of all the <b>Highest,</b> (Col. 5), .....		= 62.8
" Corrected <b>Mean</b> " of all the <b>Lowest,</b> (Col. 6), .....		= 42.7
Difference, or <b>Mean Daily Range,</b> .....		= 20.1
** Calculated <b>Mean Temperature</b> of Month, .....		= 52.8

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

<b>HYGROMETER, Mean</b> (corrected) A.M. and P.M. Reading of <b>Dry Bulb</b> , (Cols. 9 and 11), .....	=	53.5
<b>Mean</b> (corrected) A.M. and P.M. Reading of <b>Wet Bulb</b> , (Cols. 10 and 12), .....	=	48.2
†† Computed <b>Temperature of Dew-Point</b> , .....	=	43.0
†† Do. <b>Elastic Force of Vapour</b> , .....	=	276
†† Do. <b>Weight of Vapour in a Cubic Foot of Air</b> , ...	=	
†† <b>Relative Humidity</b> , (Saturation = 100), .....	=	68

WIND.											
SUMMARY.											
Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.
A.M.	7	12			2	5-9	4			150	
P.M.	6	12			2	4-12	3			117	
Mean.	6	12	0		2	5-10	4	0		133	

Observations made and  
Return verified by

(Signed) Robert W. Burton



Glenn Tarnow  
June 1986

ONE of the chief objects that the *Societate Meteorologica*, Society proposed to itself when the Society was established in 1856, was to secure greater uniformity in the system of observations pursued at all its Stations. Uniformity in the observations is absolutely necessary to justify the publication of Monthly Results from different observations, it being found that differences between the Returns from two Stations, so very considerable as to render them quite incomparable, may arise from dissimilarity in the position or the use of differently constructed instruments. It is therefore hoped, that those who kindly furnish Reports to the Society, will by their 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 recommended 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 columns of the Schedule. It is hoped that this thorough 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 consisting in applying pressure by means of a screw to the bottom of the cistern, which is made of flexible leather, thus raising or depressing the surface till it just meets the ivory point which forms the zero point of the 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 column. Its scale-marks are not like inches, but so much shorter as to compensate for the error that would otherwise arise from the fluctuations of the surface of mercury in the column. This is an excellent Barometer for ordinary Observers, inasmuch as it entirely eliminates the error of observation likely to arise in a few cases in setting the instrument to the zero point of the fixed scale when the light is not good. To slow 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 Fowden'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 foot, whose stem passes freely through the bell and case of the cistern. When the index-line on this little piston-rod is brought, by the adjusting screw, to form one straight line with those on its ivory frame, the surface of the mercury is then at the exact height from which the scale is graduated. In taking an observation, this preliminary setting must be made with scrupulous accuracy; as a slight error here will vitiate the readings from the venter.

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

The Barometer should be suspended in such a good light as may 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 not tilted to either the east or west, nor the heat of 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 column adjusted 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 venier, which must be carefully aligned so as to form exactly a tangent to the convex surface of the mercury in the tube. Observations must be taken quickly, so as to prevent heat from the observer's hands and person from affecting the mercury. The use of a lens will facilitate an accurate adjustment and reading of the Barometer. A mistake not infrequently made by those beginning to observe, consisting in setting the edge of the venier to the level of the clear surface of the mercury which is in direct contact with the glass tube, must be carefully avoided.

The crabs rest frequently while in feeding. The Barometer on the crabs' feet frequently reads 0.500 inch, and 0.500 inch, that is to say, instead of 29.865 inches, either of the following is sometimes observed—viz. as 30.305 inches, 28.805 inches, 29.865 inches, or 29.815 inches. Experience having shown that even the very best Observers make these mistakes, particular attention is directed to the matter.

When a Barometer having adjustable surfaces has to be removed from its fastenings, the ivory peg must first be secured so as to form a tight plug to the stem, 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 stem 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 Barometres are liable to be deranged by the introduction of air into their tubes, on removal from place to place, or on being roughly handled, they may be useful to Observers to know how the air may be expelled. First, close up the gistem by screwing the ivory peg tight, so as to prevent the escape of mercury. Then screw up the gistem, to about half an inch from the top of the tube; and having slowly inverted the instrument, place the top of it on a yielding substance, such as the foot, and gently tap on the gistem with the palm of the hand, so as to induce the air to ascend through the column to the stem, whence it may escape. Since there is the weight of two atmospheres—the pressure of the mercury in the Barometre, 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 Barometre, care must be taken to screw down the mercury in the tube before unfisting the flow of the gistem, 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 Hygrometer, be kept in Stevenson's Louvre-boarded Box for Thermometers, painted white inside and outside, and covered to four-stouffs, also painted white, firmly.

sawed to four stout posts, also painted white, firmly fixed in the ground. The posts must be of such a length that when the Thermometers are hung in position the Bulbs of the Minimum Thermometer, and of the Dry and Wet Bulb Thermometers will be exactly at the same height of four feet above the ground, the Maximum Thermometer being hung immediately above the Minimum Thermometer. The distance from the top of the posts to the top of the glass, in all the cases, is to be related to the height of the observer, and in a few cases, in order to enable the Observer to observe as much of the air surrounding and enclosing the Observations as possible. The Thermometers are suspended on cross levers in the top of the Box, and the door which should open to the north

The Council regard the question of UNIFORMITY OF HEIGHT ABOVE GROUND, AND METHOD IN PROTECTING THE THERMOMETERS, as vital in every system of Meteorological Observation, since without it Observations made at different Stations are incompatible, thus rendering it impossible to compare the Climates of places with each other as regards their most important features.

Professor Philip L. Negandhi and Zaub's Maximum Thermometers are recommended, and Rutherford's Minimum Thermometers are recommended. It is recommended that these Thermometers be graduated on the glass stem. The Minimum Thermometer is liable to two derangements—viz, the column of spirit breaking, and part of the spirit distilling by high temperature and lodging at the top of the tube. This derangement is of occasional occurrence with Maximum Thermometers. A systematic examination of Minimum Thermometers ought to be a regular part of the work carried on by each Observer.

Fortunately, Spirit Meters may be easily set right by the following means when the column of spirit chances to separate. Let the thermometer be taken in the hand by the end farthest from the bulb, and, holding it above the head, and then swinging down towards the head, the object being on the principle of centrifugal force, to send the column down the detached portion of spirit till it unites with the column below. A few throws, or swinging strokes, will generally be sufficient for the purpose; after which the thermometer should be placed in a slanting position, to allow the rest of the spirit still adhering to the sides of the tube to drain down to the column. But another method must be adopted, if the portion of spirit in the top of the tube be small. The head should be applied slowly and cautiously to the top end of the tube where the detached portion of spirit is, which, being funnelled into vapour by the heat, will condense on the surface of the unbroken column of spirit. Care must be taken that the heat is not applied too quickly; for, if this be done, the tube will break and the instrument be destroyed. The best way to apply the requisite amount of heat, is by bringing the end of the tube slowly down towards a luminous flame from a gas-burner, or, if gas be not at hand, a piece of ignited metal will serve instead.

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

any one of these methods. When the water is removed from the Hygrograph in use at the Society's Stations consists of two Thermometers usually, but not necessarily mounted on one frame. As frequently slight deviations from the expected form of this apparatus seriously vitiate the Hygrographical Observations, Observers are specially requested to take care to observe the following conditions.—The bulbs must hang down to at least an inch from the scales and frame to which they are attached; the frame must be such as will bring the tubes forward by an inch from any bend on which it may be suspended; the water must be covered and altogether placed to the side, and a little below the level of the wet bulb, but in no case under the bulbs; the muslin must be of medium fineness, and fastened at the neck of the bulb by the cotton, which also supplies it with water. It must be seen to by the Observer that the muslin is always clean and moist, and that the water pipe is not broken. In frosty weather, observation is a matter of much delicacy, and must be made with great care. The bulb must be moistened by immersion from 15 to 30 minutes before the hour of observation. From the film of ice thus formed evaporation will proceed as from the moist cloth in ordinary circumstances.

In reading the Thermometer, great care must be taken to observe the position of the spirit, and the position of the index or pointer as they are passing the figure of the index or pointer, and the column of mercury. The reading ought to be taken to tenths of a degree, and noted in decimals. Thus, if the Thermometer will be read  $59^{\circ} \cdot 9$ ,  $40^{\circ} \cdot 0$ , or again  $40^{\circ} \cdot 4$ ,  $40^{\circ} \cdot 5$ ,  $40^{\circ} \cdot 6$ , according as it indicates a Little under an exact coincidence with, or a little over  $40^{\circ}$  or  $40^{\circ} \cdot 5$ , respectively. So also  $40^{\circ} \cdot 1$  and  $40^{\circ} \cdot 2$  more or less must be registered,  $40^{\circ} \cdot 2$ ,  $40^{\circ} \cdot 3$ , and  $40^{\circ} \cdot 7$  or  $40^{\circ} \cdot 8$  respectively. In reading Rutherford's Minimum Thermometer, the indication of that end of the index which is next the surface of the spirit is alone noted. On opening the Thermometer Box, the Dry and Wet Bulb Thermometers are to be first, and rapidly read, inasmuch as they are readily affected by heat from the observer.

The Hydrogenometeor is read at 9 a.m. and 9 p.m. The Self-Registering Thermometers are read at 9 p.m. only, as indicating the greatest and least degrees of temperature in the Temperature. 24 hours preceding. It is not a matter of indifference when the Self-Registering Thermometers are read, since, in winter at least, the extremes may occur at any hour; and it is necessary to satisfy their recurrence to their proper meteorological day. In the Secretary's schedules, the indications registered on the 31 are those of the series of phenomena commencing at 9 p.m. on the 31, and extending till 9 p.m. on the 3d.

No instrument ought to be used for Meteorological purposes till it has been carefully tested by comparison with a Standard Thermometer. When such Thermometers are not graduated on the stem, but merely on an unattached scale, undergo repairs, they are very liable to be moved from their position on the Scale, and ought never afterwards to be used, without being re-tested. The Salt-Registering, especially the Minimum Thermometers, ought frequently to be compared with the dry bulb of the Hygrometer. The freezing-point of each Thermometer, marked by a scratch on the tube, ought to be used once a year, in snow or melting ice.

In selecting instruments, the following points require attention:—The divisions of the varieties of Barometers in reference to their scales, and the perfect freedom of the Barometer from air; the correct num-

bering 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 Thermometers of similar construction; and as regards Maximum Thermometers, either Negretti and Zamboni, or Phillips's, whether they will act at the highest temperatures 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.

Wind. The accuracy of which, both as regards Direction and Force, is so essential toward the right

A discussion of many of the more important problems of the science of a Wind-Vane might be given at least 12 feet above surrounding objects, so that it will oscillate incessantly, the true direction would be taken. In all cases, but especially when the Vane is stationary, and the wind is light, reference may be made to the direction of smoke, etc., in well-exposed situations. Council 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, throughout different Stations, is likely to give highly valuable and interesting results, particularly in connection with the study of the general character of the winds blowing round Pittsburgh and other great Stations, in the United States.

The Society for the systematic investigation of the relation of the forces of the wind to Barometric pressure, and other points connected with storms.

The Council would recommend the Transpiration Cup Avenue

2. **Anemometer**—a self-registering instrument which shows the amount of wind that passes it per day; from which also the mean Velocity of the Wind at the time of observation may be ascertained. For indicating the Force of the Wind at any particular hour of observation, the Pressure Anemometer is recommended.

3. **Barometer**—the Aneroid Barometer, of the kind used by Mr. T. Stevenson, the Honorary Secretary, and Mr R. Ballingall, the Society's Observer at Edinburgh, are recommended as likely to secure uniformity in making observations on the Force of the Wind.

Many causes conspire to produce anomalies in Rain Return 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 free and unobstructed by surrounding objects as is desirable,

As the wind is unobscured by surrounding objects is destroyed, the gauge should be taken to place it at some distance from shrubs, trees, fences, buildings or other obstructions, at least as many feet from their base as they are in height. The more important the observations 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 rim of the Gauge must be perfectly level, and fixed so that it will remain at a uniform level in all weathers, and be at a height of one foot above the 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 rises to its height only at the time the instrument is read, it being found that a stem projecting above the rim of the Gauge seriously interferes with the proper measurement of the Rain-fall. 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 Journals of the previous day. If the Gauge is read once a month, the reading is to be made on the 1st 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:—When a Snow-shower occurs, it should be noted in the 'Remarks,' and the letter S affixed 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 intensions of the Rain-Gauge. For wind, rain, and snow, as intended 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  $20^{\circ}$  or  $30^{\circ}$  of the zenith). The strata of Clouds that appear near the horizon are viewed obliquely; and thus, being multiplied by the cosine, we ought not to take account of the smallness of the Clouds' column, but of the apparentness of the strata. The amount of the Clouds' column, and the 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, wholly covered, 10, and so on.

Observations of the Clouds are made at 9 A.M. and at sunset, 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

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.W., with one-third the speed of the former. Again, in the second  $\frac{1}{4}$  st. Cloud column, an entry of  $\frac{1}{2}$  will indicate that the higher  $\frac{1}{2}$  cu-st.

sections are covered to the amount of 4-tenths with, status Clouds; and that the sky is further observed to the extent of 2-tenths by lower Clouds of the cumulo status 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 consistency, 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 being 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 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 ascertained by a properly constructed apparatus, from boats, or on the coast, where it is not impeded, from the oarls of piers and rocks round the coast, where it is not influenced by that of river water, and as little as possible by currents sweeping along the coast, and thus acquiring the temperature of the land. At or near the time of high sun or cooled by nocturnal radiation. At or near the time of high

water, in cases where the observations cannot be taken daily, the observation may be made on the 5th, 15th, and 25th of each month. When convenient, extra Sea Observations might be taken for other months, and greater depths, notwithstanding the temperature of the Air, and the state of Observation. It is also very desirable that observations on the daily Maxima and Minima by Thermometers continuously immersed, be taken at the same time, and at the same place, as the Air, Mr. F. Stevenson, and already commenced at Portland and Liverpool.

The temperature of the water at the bottom of Wells ought, when practicable, to be taken, both the depth of the Wells.

Well and of the water being noted.

**Ozone.** The Paper is affixed by a pin to a board in the Turner monster Box; and the indications registered 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 35<sup>W</sup>, 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 Electro-meteorological column 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 advantage of, and a list of such are in general use are taken at the foot of the column. Besides special and extraordinary observations, great prominence ought to be given in this column to Prevalent Diseases, differences in climate, colour, velocity, and direction, especially between the Lower and Upper States of Clouds, the Colour of the Sky, &c. Remarks ought to be made on the occurrence of Meteors, Auroræ Boreales, remarkable depressions, elevations, and fluctuations of the Barometer, Thunder-Storms, and remarkable falls of Snow. Hail, Rain, the Hour of Storms of Wind commencing, attaining their maximum, and ending as well as such notes on Storms as have been noted at above. When lefty bills are in the vicinity of a Station, the Height of Clouds and of the Snow-line in winter should be recorded.

The use of abbreviations, the state of the weather at 9 A.M., and r.m. should be registered either in two columns, otherwise unoccupied or ruled off for the purpose, from the column of Remarks.

Observations in connection with the Periodic Return of the Seasons, possess not only great scientific value, but are also of considerable importance in connection with the Periodic Return of the Seasons.

Observations in connection with the Periodic Return of the Seasons, Agriculture, Horticulture, and Natural History. The Council would direct the special attention of Observers to the registration of such phenomena, so that the published Summaries may fairly represent the whole of Scotland.

Observations ought to be confined to individual trees and shrubs; particular species of birds, and, in the case of eggs, to specified parts reared from year to year on a selected piece of ground or farm.

The Annual Table, published yearly in the Society's Journal, will indicate the species of plants and animals to which special attention more particularly directed.

The Council recommend, however, before purchasing new instruments, and in repairing old ones, to communicate with the Meteorological Secretary, in order that every instrument may be examined and improved before being used; and they consider it necessary that he should have full power to reject any instrument which, on being presented for comparison, does not afford him satisfaction.

(By Order)

A. B.

EDINBURGH, December 1882.

(by Order)  
A. B.

OBSERVATIONS IN CONNECTION WITH THE PERIODICAL RETURN OF THE SEASONS.

FOREST TREES.					
Alder,					
Ash,	.	.	.	.	.
Beech,	.	.	.	.	.
Birch,	.	.	.	.	.
Elm,	.	.	.	.	.
Larch,	.	.	.	.	.
Lime,	.	.	.	.	.
Oak,	.	.	.	.	.
Sycamore or Plane,	.	.	.	.	.
In Flower.					
Last buds first appear.					
In Leaf.					
Dropped or Leaves.					
mentioning variety.					
GROVE.					
Barley,					
Potatoes,	.	.	.	.	.
Pease,	.	.	.	.	.
Beans,	.	.	.	.	.
Wheat,	.	.	.	.	.
Oats,	.	.	.	.	.
Rye Grass,	.	.	.	.	.
Sorting or sowing above ground.					
Appearing in flower.					
In ear or raised.					
First cut					

SHRUBS, &c.	Barberry, . . . . .	First in Blossom.	Apple, . . . . .	FRUITS.	First in Blossom.	Fruit Ripe Generally.	Cuckoo, . . . . .	MIGRATORY BIRDS.	First Arrival.	Departure.
	Broom, . . . . .		Cherry, . . . . .		House-Swallow, . . . . .					
	Hazel, . . . . .		Gean, . . . . .		Lapwing, . . . . .					
	Hawthorn, . . . . .		Gooseberry, . . . . .		Plover, . . . . .					
	Holly, . . . . .		Peach, . . . . .		Sand-Martin, . . . . .					
	Laburnum, . . . . .		Pear, . . . . .		Starling, . . . . .					
	Lilac, . . . . .		Plum, . . . . .		Swan, . . . . .					
	Mezeron, . . . . .		Strawberry, . . . . .		Rail or Corn Crane, . . . . .					
	Mountain Ash or Rowan, . . . . .									
	Red Flowering Currant, . . . . .									
	Rhododendron Ponticum, . . . . .									
	Whin, . . . . .									

...whether you may be able to collect relative to the crops or grain, hay, potatoes, etc., whether plentiful, or in perfection; and the Agricultural condition of the district generally.

Mr. ALEXANDER BUCHAN

*Secretary of the Meteorological Society of Scotland,*

EDINBURGH.

BOOK POST.

[illegible]



## SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Glen Tana Abeyne, County of Aberdeen, in Lat. \_\_\_\_\_, Long. \_\_\_\_\_, Distance from Sea 38 miles.

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

During the MONTH of July 1886.

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, 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. * No.	Attach- ed Ther- mometer	Barometer. No.	Attach- ed Ther- mometer	Max. No.	Min. No.	Max. in Sun/rays	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.			Direction.	Force.	Direction.	Force.	No.	Velocity (0-5), and Direction.	Amount (0-10), and Species.	Velocity (0-5), and Direction.	Amount (0-10), and Species.	No.	12 inches.						22 inches.	
																																	inches.
1	30.02	58	29.90	60	70	46			68	61	67	58	NW	1	W	1		N	6	N	1	12									1		
2	29.96	63	30.03	62	82	58			71	60	58	56	W	1	NE	1		W	5	NE	9	10									2		
3	30.03	62	30.03	61	77	58			56	54	54	53	NW	1	SE			SW	10			2									3		
4	29.99	60	29.93	60	67	48			61	56	60	58	NW	2	W			NE	8	N	1	15									4		
5	29.93	59	29.78	58	77	44			68	55	60	54	W	2	W	3		NW	2	SW	2	12									5		
6	29.68	59	29.69	59	71	46			66	57	54	48	W	3	W			NE	4	E	1	10									6		
7	29.65	57	29.60	56	68	46			60	50	50	45	W	2	W	1		NE	4	NW	5	8									7		
8	29.60	55	29.75	55	67	38			56	49	43	40	N	1	NW	1		NW	8	NW	9	6									8		
9	29.81	54	29.80	54	58	38			54	44	54	49	N	1	W	0		E	4	NW	5	9									9		
10	29.89	54	29.70	56	61	48			59	50	52	49	SW	1	SW	1		NE	6	NW	9	8									10		
11	29.60	56	29.56	56	67	48			62	59	60	56	SW	1	W	2		NE	9	NE	9	5									11		
12	29.58	57	29.35	57	70	48			63	54	55	49	W	2	W	1		NW	8	NW	7	9									12		
13	29.50	57	29.35	57	65	48			58	51	53	50	W	2	W	3		NE	7	SW	8	6									13		
14	29.98	56	29.13	54	69	47			57	50	47	44	S	2	S	1		SE	8	NE	8	3									14		
15	29.27	54	29.30	54	53	45			55	48	51	46	N	2	NW	3		SE	7	NW	7	8									15		
16	29.38	53	29.53	53	60	45			54	47	51	46	W	1	NW	1		SE	9	NE	6	6									16		
17	29.66	54	29.62	55	61	44			55	48	53	48	W	1	SW	1		NE	6	N	2	12									17		
18	29.60	57	29.45	58	67	40			57	50	60	57	SW	1	W	1		W	9	NE	9	2									18		
19	29.38	59	29.45	59	65	49			64	60	59	54	S	1	S	1		NW	6	S	8	12									19		
20	29.55	59	29.70	66	71	47			62	54	62	58	SE	1	S	0		NE	5	NW	7	10									20		
21	29.76	62	29.55	60	70	53			67	58	58	55	SE	2	S	1		N	2	NE	10	8									21		
22	29.40	60	29.25	59	70	54			62	56	57	53	S	2	S	1		NE	8	NW	10	8									22		
23	29.25	59	29.30	58	71	54			59	51	56	54	S	3	S	1		NE	7	NW	9	9									23		
24	29.29	57	29.35	57	66	46			54	53	56	55	NW	1	W	0		W	10	NE	10	0									24		
25	29.38	56	29.45	56	57	49			56	54	52	51	1.50	W	1	N	0		NE	10	NE	10	0								25		
26	29.42	56	29.48	54	56	47			52	50	47	45	2.20	N	1	NW	3		NW	9	NE	9	0								26		
27	29.53	53	29.46	53	57	48			49	44	57	44	1.42	N	3	N	1		NE	8	NE	9	2								27		
28	29.77	53	29.78	53	55	49			50	47	49	47		N	2	8	0		NE	9	NW	10	8								28		
29	29.80	54	29.68	54	60	44			50	48	50	49		NE	1	S	0		NW	9	NW	10	5								29		
30	29.38	53	29.41	55	57	47			51	50	48	47	2.26	NE		NE			NE	10	NE	9	0								30		
31	29.58	54	29.45	54	55	45			55	49	50	47		NW	2	NE	1		NW	9	NW	9	5								31		
Sums.	1714	212	1801	214	150	224			127	67	133	07	3.58		46		30																
Means.	29.556	56.8	29.581	56.9	64.8	47.2			58.0	52.2	54.3	50.2			1.48		1.00																
+ 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  $\dagger\dagger$  for Temp. (Col. 2), = 29.596 — 7.5 = 29.521  
Corrected Mean  $\dagger$  of Barometer at 9 P.M., minus the Correction  $\dagger\dagger$  for Temp. (Col. 4), = 29.581 — 2.5 = 29.506  
Mean at Station, corrected, and at 32°, = 29.513  
Correction for height, feet above Mean Sea-level, = \_\_\_\_\_  
Mean, reduced to 32°, and Sea-level, = \_\_\_\_\_  
Highest Reading, corrected for Index error, on the 3 th, = 30.030  
Lowest Do. Do., on the 14 th, = 29.980  
Difference, or Monthly Range, = 1.050

\* 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. 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.

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 2 th, = 82.0  
Lowest in Month, corrected for Index errors, on the 8 th, = 38.0  
Difference, or Monthly Range, = 44.0  
"Corrected Mean" of all the Highest, (Col. 5), = 64.8  
"Corrected Mean" of all the Lowest, (Col. 6), = 47.2  
Difference, or Mean Daily Range, = 17.6  
\*\* Calculated Mean Temperature of Month, = 56.0  
S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the th, = \_\_\_\_\_  
"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, = \_\_\_\_\_  
Lowest at Night, Black Bulb, (corrected for Index errors), on the th, = \_\_\_\_\_  
"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, = \_\_\_\_\_  
Difference of above Means or Range ("exposed"), = \_\_\_\_\_

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 56.1  
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 51.2  
†† Computed Temperature of Dew-Point, = 46.6  
†† Do. Elastic Force of Vapour, = 3.20  
†† Do. Weight of Vapour in a Cubic Foot of Air, = \_\_\_\_\_  
†† Relative Humidity, (Saturation = 100), = 69  
RAIN fell on 4 Days; Amount in Inches, = 3.38

WIND.		SUMMARY.					
Direction.		N	NE	E	SE	S	SW
A.M.		6	2		2	4	3
P.M.		2	3		1	8	2
Mean.		4	2	0	2	6	3

Observations made and  
Return verified by

(Signed)

R. Warburton







# SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Glen Tana Abeyne, County of Aberdeenshire, in Lat. \_\_\_\_\_, Long. \_\_\_\_\_, Distance from Sea 33 miles.

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

During the MONTH of August 1886

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.	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. in Sun's rays	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.			Dirac- tion.	Force	Dirac- tion.	Force		Velocity (0-6), and Dirac- tion.	Amount (0-10), and Species.	Velocity (0-6), and Dirac- tion.		Amount (0-10), and Species.	No. _____ 3 inches.	No. _____ 12 inches.					No. _____ 22 inches.	
inches.	°	inches.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°		
	1	29.42	54	29.4	54	58	46			53	47	49	44			NW	1	W	1		NE	7	NE	9	7							1	
	2	29.42	54	29.45	54	59	46			50	46	48	44			NW	2	NW	2		NE	9	NE	9	8							2	
	3	29.18	53	29.85	54	57	43			51	45	48	45			N	3	N	0		NE	9	NW	8	7							3	
	4	29.95	51	29.85	52	59	34			56	51	53	48			NW	1	SW	2		NW	7	NE	10	8							4	
	5	29.79	53	29.6	58	63	39			60	51	54	54			NW	2	SW	2		SW	6	NW	9	7							5	
	6	29.59	60	29.58	60	67	55			60	58	61	54			W	1	W	2		NW	8	NE	6	6							6	
	7	29.48	60	29.53	60	73	48			64	58	57	52			NW	1	W	2		NE	9	NW	8	10							7	
	8	29.58	59	29.6	59	68	58			63	53	58	48			W	2	S	1		SW	6	NE	6	9							8	
	9	29.68	58	29.61	58	67	49			60	59	50	46			W	1	W	1		NE	6	NW	5	6							9	
	10	29.65	58	29.4	55	63	47			57	50	51	49			NW	1	S	1		SE	8	NW	10	4							10	
	11	29.4	55	29.45	55	61	46			52	47	49	48			W	2	W	1		NE	6	NW	9	8							11	
	12	29.51	53	29.45	56	62	42			52	50	52	52			N	1	SW	0		NW	6	NW	8	9							12	
	13	29.37	58	29.45	56	64	46			53	51	48	46			NW	1	N	1		SW	7	NE	9	0							13	
	14	29.6	53	29.72	56	56	47			48	45	52	47			NW	2	SW	1		SE	8	W	8	5							14	
	15	29.62	58	29.45	50	60	46			58	50	60	57			W	3	S	1		NW	7	SE	9	6							15	
	16	29.28	60	29.4	60	62	54			60	55	68	55			SW	2	W	1		NW	7	NW	10	10							16	
	17	29.65	61	29.88	56	66	57			54	51	44	48			NW	2	N	1		SE	9	N	2	6							17	
	18	29.95	52	29.85	58	60	55			59	51	42	57			SE	1	NW	2		SW	4	NE	8	8							18	
	19	29.96	58	30.	59	69	57			57	54	59	54			NW	1	SW	2		NW	9	NW	8	2							19	
	20	29.91	59	29.85	60	68	46			61	60	59	52			W	2	NW	1		E	1	SE	9	12							20	
	21	29.94	60	29.95	59	74	48			50	47	57	51			W	1	N	2		SE	8	NW	7	5							21	
	22	29.95	58	29.87	58	69	45			49	46	56	52			N	0	NW	0		W	6	S	2	9							22	
	23	29.88	54	29.73	58	71	37			69	58	57	54			SW	1	S	1		NE	4	NE	8	8							23	
	24	29.66	59	29.6	60	65	47			64	57	59	54			SW	1	SW	1		N	1	NW	7	6							24	
	25	29.59	61	29.51	61	70	55			61	55	58	53			S	2	S	1		SE	6	NW	8	1							25	
	26	29.53	61	29.6	58	63	55			58	52	64	52			SW	1	N	1		SE	8	NE	10	0							26	
	27	29.78	56	29.9	57	59	43			57	50	48	46			SW	1	NW	0		NW	6	SE	9	2							27	
	28	29.78	58	29.65	60	68	46			62	57	64	58			S	1	SW	0		NW	9	NW	8	6							28	
	29	29.65	60	29.65	62	71	55			64	59	65	60			S	1	SW	3		W	3	SE	6	6							29	
	30	29.63	64	29.60	64	66	60			64	60	58	53			SW	1	W	1		NE	5	NW	7	2							30	
	31	29.58	64	29.7	64	70	48			60	55	57	47			S	1	S	0		NE	9	NE	10	2							31	
Sums.		2056	228	2029	237	146	237			235	75	163	25				43		33														
Means.		29.663	57.4	29.653	57.6	64.7	47.6			57.6	52.4	55.3	50.8				139		1.06														
† Total Corrections for Instru- mental Errors.																																	
‡ Corrections for Diurnal Range.																																	
“Cor- rected 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.		
ci.	cirrus.	ms.	meteors.		
ci-cu.	cirro-cumulus.	n.	rain.		
ci-s.	cirro-stratus.	r.	rain.		
cu.	cumulus.	h. r.	heavy rain.		
cu-s.	cumulo-stratus.	e. 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. ha.	solar halo.		
h. d.	heavy dew.	sq.	squall.		
hl.	hail.	sg.	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.	aurora.	m.	meteor.
ci.	cirrus.	ms.	meteors.
ci-cu.	cirro-cumulus.	n.	nimbus.
ci-s.	cirro-stratus.	r.	rain.
cu.	cumulus.	h.r.	heavy rain.
cu-s.	cumulo-stratus.	e.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.ha.	solar halo.
h.d.	heavy dew.	sq.	squall.
hl.	hail.	sqg.	squalls.
l.	lightning.	t.	thunder.
li.cl.	light clouds.	t.s.	thunder storm.
li.sl.	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

BAROMETER, “corrected Mean” at 9 A.M., minus the Correction†† = 29.587  
 for Temp. (Col. 2), = 29.663 — 7.6  
 Corrected Mean† of Barometer at 9 P.M., minus the Correction†† = 29.576  
 for Temp. (Col. 4), = 29.653 — 7.7  
 Mean at Station, corrected, and at 32°, = 29.581  
 Correction for height, feet above Mean Sea-level, = \_\_\_\_\_  
 Mean, reduced to 32°, and Sea-level, = \_\_\_\_\_  
 Highest Reading, corrected for Index error, on the 19 th, = 30.000  
 Lowest Do. Do., on the 13 th, = 29.370  
 Difference, or Monthly Range, = 0.630

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 21 th, = 74.0  
 Lowest in Month, corrected for Index errors, on the 4 th, = 34.0  
 Difference, or Monthly Range, = 40.0  
 “Corrected Mean” of all the Highest, (Col. 5), = 64.7  
 “Corrected Mean” of all the Lowest, (Col. 6), = 47.6  
 Difference, or Mean Daily Range, = 17.1  
 \*\* Calculated Mean Temperature of Month, = 56.1  
 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), = 56.4  
 Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 51.6  
 ‡ Computed Temperature of Dew-Point, = 47.1  
 ‡ Do. Elastic Force of Vapour, = 325  
 ‡ Do. Weight of Vapour in a Cubic Foot of Air, = \_\_\_\_\_  
 ‡ Relative Humidity, (Saturation = 100), = 71  
 RAIN fell on \_\_\_\_\_ Days; Amount in Inches, = \_\_\_\_\_

WIND. SUMMARY.												
Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.	
A.M.	3			1	4	6	7	10		139		
P.M.	4				6	8	8	5		1.06		
Mean.	3	0	0	1	5	7	8	7	0	1.22		

1.49

(Signed) R. Warburton

Observations made and Return verified by \_\_\_\_\_







## SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *Glen Yana Abeyne*, County of *Aberdeenshire*, in Lat. \_\_\_\_\_, Long. \_\_\_\_\_, Distance from Sea *35* miles.

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

During the MONTH of *September* 188 \_\_\_\_\_.

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.		9 A.M.		P.M.			9 h. A.M.								
		Barometer.	Attached Thermometer.	Barometer.	Attached Thermometer.	Max.	Min.	Max. in Sun's rays.	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.			Direction.	Force.	Direction.	Force.	Readings of the H- Cup Anemometer. No. _____	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. _____	No. _____	No. _____						No. _____
		inches.	°	inches.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	
	1	29.74	60	29.80	58	63	55			63	55	53	47			SW	1	N	1	NE	6	SE	8	6								1	
	2	29.85	56	29.95	54	67	43			56	50	50	47			W	1	NW	0	W	4	E	2	6								2	
	3	30.04	52	29.95	50	61	32			53	50	56	50			SW	1	W	1	-	-	-	-	8								3	
	4	30.01	50	29.92	52	68	33			57	53	56	55			NW	0	SW	1	-	-	-	-	6								4	
	5	29.80	60	29.05	62	70	47			56	53	57	54			SW	1	SE	1	SW	1	NE	10	2								5	
	6	29.80	56	29.75	58	68	45			46	43	47	44			NW	1	SW	1	NE	9	NW	14	3								6	
	7	29.80	54	30.03	56	62	46			56	54	56	46	0.30		SW	2	SE	1	W	1	SW	10	4								7	
	8	30.60	58	30.63	60	59	45			56	50	50	47			S	1	S	1	SE	10	NW	4	7								8	
	9	30.60	60	30.23	62	64	45			52	48	54	49	0.46		SW	2	SW	3	NW	8	NE	9	1								9	
	10	30.20	58	30.15	54	60	45			49	46	49	44	0.44		W	1	W	1	NE	6	W	4	2								10	
	11	30.12	52	30.03	50	60	46			52	48	54	49			S	0	W	3	NE	7	NE	10									11	
	12	30.00	50	29.92	52	64	44			62	53	49	44			W	2	W	0	NE	6	NW	8	7								12	
	13	29.50	55	29.45	53	64	40			50	47	49	48			N	0	N	1	NW	5	SW	9									13	
	14	29.45	56	29.50	58	53	46			53	50	45	43	1.44		N	1	N	1	NW	6	NE	6	5								14	
	15	29.28	54	29.20	55	59	44			46	43	41	39			N	0	NW	0	NE	8	-	-	4								15	
	16	29.40	56	29.12	57	58	29			47	43	39	36			W	1	NW	0	NE	4	W	4	6								16	
	17	29.24	56	29.42	56	61	29			48	44	39	38			W	0	S	1	-	-	NE	6	6								17	
	18	29.42	50	29.25	52	60	30			44	43	42	44			NW	0	SW	1	NE	8	NW	8	2								18	
	19	29.45	58	29.74	56	57	47			47	45	47	43			S	0	S	0	NW	9	W	7	3								19	
	20	29.85	54	29.78	52	56	47			49	46	47	44			NE	1	W	1	SE	8	NE	9	0								20	
	21	29.75	49	29.75	50	56	47			48	42	46	42			NW	1	NW	2	NW	6	SE	9	2								21	
	22	29.80	48	29.58	50	50	46			46	43	46	45			N	2	N	1	NE	8	NE	9	1								22	
	23	29.90	50	29.90	50	57	45			48	45	45	42			N	1	W	2	NW	8	NE	9									23	
	24	29.90	51	29.88	50	50	48			48	44	42	41			N	1	S	1	NE	7	SE	8									24	
	25	29.82	48	29.72	49	51	35			51	46	49	46			S	0	NW	1	N	4	NE	8	3								25	
	26	29.68	56	29.70	58	58	47			49	46	48	46			W	1	W	0	NE	5	SE	4	6								26	
	27	29.15	60	29.40	62	62	44			61	55	46	42			SW	3	W	3	NE	8	-	-	4								27	
	28	29.30	59	29.52	60	62	43			53	46	43	43			W	2	W	2	N	3	-	-	3								28	
	29	29.52	52	29.40	54	58	44			49	46	48	46			W	1	S	1	W	5	NW	9									29	
	30	29.48	50	29.40	52	57	46			57	55	48	45	0.23		W	0	S	3	NW	9	NW	10	4								30	
	31																																31
	Sums.	1617 2345	11 125	169 2242	10 143	11 138	15 81			16 45	12 233	16 244	14 149	11 289						30													
	Means.	29.748	54.2	29.747	54.8	59.64	27			57.5	47.8	48.1	45.0							1.00													
	† 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.
ci.	" cirrus.	ms.	" meteor.
ci-cu.	" cirro-cumulus.	n.	" nimbus.
ci-s.	" cirro-stratus.	r.	" rain.
cu.	" cumulus.	h. r.	" heavy rain.
cu-s.	" cumulo-stratus.	c. h. r.	" continued heavy rain.
d.	" dew.	s.	" stratus.
f.	" fog.	sc.	" scud.
fr.	" frost.	s.	" sleet.
h-fr.	" hoar-frost.	s.	" snow.
h.	" haze.	sol. h.	" solar halo.
h. d.	" heavy dew.	sq.	" squall.
hl.	" hail.	sq.	" 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

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction†† for Temp. (Col. 2), = *29.684*  
Corrected Mean" of Barometer at 9 P.M., minus the Correction†† for Temp. (Col. 4), = *29.678*  
Mean at Station, corrected, and at 32°, = *29.670*  
Correction for height, feet above Mean Sea-level, = \_\_\_\_\_  
Mean, reduced to 32°, and Sea-level, = \_\_\_\_\_  
Highest Reading, corrected for Index error, on the 8th, = *30.630*  
Lowest Do. Do., on the 16th, = *29.120*  
Difference, or Monthly Range, = *1.510*

\* 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.  
† Enhancing corrections for both capillarity and Index Errors.  
‡ The Diurnal Range for Scotland is as yet unknown.  
§ These "Hygrometrical Deductions" are calculated from Glaisher's Hygrometrical Tables, Second Edition only.  
|| While the Diurnal Range is unknown, the Arithmetical Mean of Cols. 9 and 11 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.

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 5th, = *70.0*  
Lowest in Month, corrected for Index errors, on the 16th, = *29.0*  
Difference, or Monthly Range, = *41.0*  
"Corrected Mean" of all the Highest, (Col. 5), = *59.6*  
"Corrected Mean" of all the Lowest, (Col. 6), = *42.7*  
Difference, or Mean Daily Range, = *16.9*  
\*\* Calculated Mean Temperature of Month, = *50.2*

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), = *49.8*  
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = *46.4*  
†† Computed Temperature of Dew-Point, = *42.8*  
†† Do. Elastic Force of Vapour, = *276*  
†† Do. Weight of Vapour in a Cubic Foot of Air, = \_\_\_\_\_  
†† Relative Humidity, (Saturation = 100), = *77*  
RAIN fell on *5* Days; Amount in Inches, = *2.89*

WIND.		SUMMARY.							
Direction.		N	NE	E	SE	S	SW	W	NW
A.M.		6	1			4	6	9	4
P.M.		3			2	6	4	10	5
Mean.		4	1	0	1	5	5	9	5

1-16

(Signed)

*R. Warburton*Observations made and  
Return verified by







## SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Glen Tana Abhoyne, County of Albion, in Lat. \_\_\_\_\_, Long. \_\_\_\_\_, Distance from Sea 35 miles.  
Height of Cistern of the Barometer above Mean Sea-level \_\_\_\_\_ feet, above Ground \_\_\_\_\_ feet. During the MONTH of October 188 6.

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, begin and end.</i>	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.		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 Density.	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 Sun's rays No.	Min. on Grass. No.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	Direc- tion.	Force.			Direc- tion.	Force.	Velocity (0-6), and Direc- tion.	Amount (0-10), and Species.		Velocity (0-6), and Direc- tion.	Amount (0-10), and Species.	No. 8 inches.	No. 12 inches.						No. 22 inches.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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## NOTATION USED IN GENERAL REMARKS.

a.	denotes aurora.	m.	denotes meteor.
ci.	" cirrus.	ms.	" meteors.
ci-cu.	" cirro-cumulus.	n.	" nimbus.
cl-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.	" sleet.
h-fr.	" hoar-frost.	s.	" snow.
h.	" haze.	sol. halo.	" solar halo.
h. d.	" heavy dew.	sq.	" squall.
hl.	" hail.	sq.	" 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. halo.	" 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†† for Temp. (Col. 2), = 29.548  
Corrected Mean" of Barometer at 9 P.M., minus the Correction†† for Temp. (Col. 4), = 29.564  
Mean at Station, corrected, and at 32°, = 29.556  
Correction for height, feet above Mean Sea-level, = \_\_\_\_\_  
Mean, reduced to 32°, and Sea-level, = \_\_\_\_\_  
Highest Reading, corrected for Index error, on the 24 th, = 30.320  
Lowest Do. Do., on the 12 th, = 28.880  
Difference, or Monthly Range, = 1.440

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 6 th, = 63.0  
Lowest in Month, corrected for Index errors, on the 23 th, = 27.0  
Difference, or Monthly Range, = 36.0  
"Corrected Mean" of all the Highest, (Col. 5), = 54.3  
"Corrected Mean" of all the Lowest, (Col. 6), = 41.0  
Difference, or Mean Daily Range, = 13.3  
\*\* Calculated Mean Temperature of Month, = 47.6

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

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 47.0  
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 44.6  
# Computed Temperature of Dew-Point, = 41.9  
# Do. Elastic Force of Vapour, = 266  
# Do. Weight of Vapour in a Cubic Foot of Air, = \_\_\_\_\_  
# Relative Humidity, (Saturation = 100), = 83  
RAIN fell on Days; Amount in Inches, = 2.90

WIND.		SUMMARY.					
Direction.		N	NE	E	SE	S	SW
A.M.		4	1	3	8	3	8
P.M.		1	1	1	15	4	6
Mean.		3	1	0	2	1	4

1.30

Observations made and  
Return verified by

(Signed)

R. W. Parburton







## SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Glen Tana Alpine, County of Aberdeenshire, in Lat. \_\_\_\_\_, Long. \_\_\_\_\_, Distance from Sea 33 miles.  
Height of Cistern of the Barometer above Mean Sea-level \_\_\_\_\_ feet, above Ground \_\_\_\_\_ feet. During the MONTH of October 1886.

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.								
		Barometer.	Attached Thermometer	Barometer.	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 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.		
		* No.	No.	No.	No.	No.	No.	No.	No.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.			No.	No.	No.	No.		No.	No.	No.	No.		No.					No.	No.	No.	No.
		inches.	°	inches.	°	°	°	°	°	°	°	°	°			°	°	°	°		°	°	°	°		°					°	°	°	°
	1	29.38	60	29.35	52	62	58			57	55	50	45			W	0	S	3			SE	8	NW	10	4						1		
	2	29.40	58	29.15	60	58	49			55	49	47	45			SW	2	S	1			NE	6	SE	8	8						2		
	3	29.82	50	29.88	48	59	38			50	45	41	40			S	-	S	1			NE	8	NE	7	-						3		
	4	29.90	54	29.90	56	58	50			54	52	44	42			S	1	SE	1			NW	9	NE	8	-						4		
	5	29.82	49	29.70	50	56	51			52	53	52	50			SE	-	W	1			NW	9	NW	7	-						5		
	6	29.62	54	29.60	51	56	51			53	54	53	50			NE	1	S	1			SW	10	SE	9	-						6		
	7	29.52	56	29.68	58	58	51			55	54	54	52			S	1	SW	W			SE	9	SW	8	8						7		
	8	29.70	60	29.70	58	63	46			57	54	49	47			W	1	S	1			W	6	SE	7	5						8		
	9	29.58	58	29.20	60	62	34			51	50	50	48			S	2	SW	2			SW	9	SE	9	-						9		
	10	29.18	54	29.30	50	59	48			51	47	49	45			W	1	S	2			SE	8	S	4	6						10		
	11	29.45	50	29.20	48	55	34			49	44	50	45			W	1	S	3			NW	2	SW	8	4						11		
	12	28.88	52	29.90	53	54	45			53	48	38	35			SW	9	W	1			NE	1	NW	6	3						12		
	13	28.92	50	29.20	47	55	32			48	44	38	35			W	2	W	1			W	1	-	-	4						13		
	14	29.25	63	29.30	54	55	30			36	35	35	33			NW	1	W	1			W	4	-	-	4						14		
	15	29.50	55	28.85	56	57	29			38	36	49	46	1.50		N	-	S	2			SW	9	SE	-	20						15		
	16	28.95	48	29.00	50	50	37			50	49	49	48	1.40		NW	2	NE	2			NW	9	SW	9	-						16		
	17	29.15	52	29.45	53	56	36			48	47	48	45			NW	2	N	1			NW	10	NE	10	-						17		
	18	29.55	48	29.65	49	50	44			47	44	46	44			N	1	W	1			NE	8	SW	8	-						18		
	19	29.18	46	29.65	48	49	43			46	44	46	43			NW	1	NW	1			NW	10	W	9	1						19		
	20	29.85	49	29.55	50	50	43			44	42	42	40			N	2	NW	1			S	9	W	4	2						20		
	21	29.65	50	29.68	51	52	42			46	45	44	43			S	1	SW	1			NW	10	NE	9	2						21		
	22	29.18	52	29.68	48	52	30			35	34	30	29			W	1	NW	1			E	2	E	2	8						22		
	23	30.02	46	30.12	48	53	27			40	39	44	42			N	-	S	1			NE	8	SW	8	5						23		
	24	30.28	50	30.32	49	47	36			44	43	45	44			S	1	SW	1			W	6	NW	9	1						24		
	25	30.30	46	30.25	50	49	38			43	42	48	45			SW	-	S	1			SE	8	SE	9	2						25		
	26	30.22	48	30.15	44	49	39			40	39	41	40			W	1	W	1			NE	9	SW	7	1						26		
	27	30.00	49	29.90	47	47	39			44	43	43	41			W	1	S	1			NE	8	NW	8	2						27		
	28	29.88	50	29.94	50	48	43			47	45	48	45			SE	2	S	2			NW	8	SW	9	1						28		
	29	29.82	52	29.88	54	53	40			52	48	52	49			SE	1	S	1			SW	9	NE	6	3						29		
	30	30.00	56	29.95	54	52	43			46	44	48	48			S	-	S	2			NW	8	NE	7	4						30		
	31	29.70	52	29.65	56	54	44			50	48	52	45			S	1	S	1			SE	9	NW	6	5						31		
	Sums.	1885	57	1933	51	132	30			245	175	186	113	2.90		31		40																
	Means.	29.608	51.8	29.624	51.6	54.3	41.0			47.9	45.6	46.0	43.6			1.00		1.29																
	† Total Corrections for Instrumental Errors.																																	
	† Corrections for Diurnal Range.																																	
	"Corrected 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			

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.

hl. hail.

l. lightning.

li. cl. light clouds.

li. sh. light showers.

lu. co. lunar corona.

lu. ha. lunar halo.

m. denotes meteor.

ms. meteors.

n. nimbus.

r. rain.

h. r. heavy rain.

c. h. r. continued heavy rain.

s. stratus.

sc. scud.

sleet.

s. snow.

so. ha. solar halo.

sq. squall.

sqs. squalls.

t. thunder.

t. 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

0.5

1

Calm

Very light air

Light air

1.5

2

3

Light breeze

Fresh breeze

Very fresh

4

5

6

Blowing hard

Blowing a gale

Violent gale

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction†† for Temp. (Col. 2), = 29.548  
Corrected Mean" of Barometer at 9 P.M., minus the Correction†† for Temp. (Col. 4), = 29.564  
Mean at Station, corrected, and at 32°, = 29.556  
Correction for height, feet above Mean Sea-level, = \_\_\_\_\_  
Mean, reduced to 32°, and Sea-level, = \_\_\_\_\_  
Highest Reading, corrected for Index error, on the 24 th, = 30.320  
Lowest Do. Do., on the 12 th, = 28.880  
Difference, or Monthly Range, = 1.440

\* 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 *mean* correction.  
‡‡ These "Hygrometrical Deductions" are calculated from Glasgow's Hygrometrical Tables, Second Edition only.  
‡‡‡ While the Diurnal Range is unknown, the Arithmetical Mean of Cols. 5 and 6 will be entered as the "Calculated Mean Temperature."  
Any Observations not taken under the conditions specified in the Directions on the other side, or noted at the Top of each column, must be marked as such by the observer, in each Schedule. See over.

S.-R. THERMOMETER, (in shade, etc.) Highest in Month, (corrected for Index Errors), on the 6 th, = 63.0  
Lowest in Month, corrected for Index errors, on the 23 th, = 27.0  
Difference, or Monthly Range, = 36.0  
"Corrected Mean" of all the Highest, (Col. 5), = 54.3  
"Corrected Mean" of all the Lowest, (Col. 6), = 41.0  
Difference, or Mean Daily Range, = 13.3  
\*\* Calculated Mean Temperature of Month, = 47.6

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

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 47.0  
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 44.6  
† Computed Temperature of Dew-Point, = 41.9  
† Do. Elastic Force of Vapour, = 266  
† Do. Weight of Vapour in a Cubic Foot of Air, = \_\_\_\_\_  
† Relative Humidity, (Saturation = 100), = 83  
RAIN fell on Days; Amount in Inches, = 2.90

WIND.		SUMMARY.									
Direction.		N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.
A.M.		4	1		3	8	3	8	4		1.00
P.M.		1	1		1	15	4	6	3		1.29
Mean.		3	1	0	2	11	4	7	3	0	1.14

1.30

Observations made and  
Return verified by

(Signed) R. W. Arbuthnot







## SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Glenfarg, Abernethy, County of Aberdeen Shire, in Lat. \_\_\_\_\_, Long. \_\_\_\_\_, Distance from Sea 35 miles.  
Height of Cistern of the Barometer above Mean Sea-level \_\_\_\_\_ feet, above Ground \_\_\_\_\_ feet.  
During the MONTH of November 1886.  
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.  <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.		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.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
		Barometer. * No. —	Attach- ed Ther- mometer	Barometer. No. —	Attach- ed Ther- mometer	Max. No.	Min. No.	Max. in Sun's rays	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.			Direction.	Force	Direction.	Force		Velocity (0—6), and Direction.	Amount (0—10), and Species.	Velocity (0—6), and Direction.		Amount (0—10), and Species.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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## NOTATION USED IN GENERAL REMARKS.

a.	denotes aurora.	m.	denotes meteor.
ci.	cirrus.	ms.	meteors.
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.	depression.	s.	stratus.
f.	fog.	sc.	scud.
fr.	frost.	s.	sleet.
h-fr.	hoar-frost.	s. h.	snow.
h.	haze.	sc. h.	solar halo.
h. d.	heavy dew.	sq.	squall.
hl.	hail.	sq. s.	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

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction†† = 29.556  
for Temp. (Col. 2), = 29.600 - 44  
Corrected Mean" of Barometer at 9 P.M., minus the Correction†† = 29.549  
for Temp. (Col. 4), = 29.590 - 41  
Mean at Station, corrected, and at 32°, = 29.552  
Correction for height, feet above Mean Sea-level, = \_\_\_\_\_  
Mean, reduced to 32°, and Sea-level, = \_\_\_\_\_  
Highest Reading, corrected for Index error, on the 24th, = 30.400  
Lowest Do. Do., on the 15th, = 28.950  
Difference, or Monthly Range, = 1.450

\* 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.  
††† "Provisionally, 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 Arithmetic Mean of Col. 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.

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 25th, = 58.0  
Lowest in Month, corrected for Index errors, on the 19th, = 27.0  
Difference, or Monthly Range, = 31.0  
"Corrected Mean" of all the Highest, (Col. 5), = 48.3  
"Corrected Mean" of all the Lowest, (Col. 6), = 34.3  
Difference, or Mean Daily Range, = 14.0  
\*\* Calculated Mean Temperature of Month, = 41.3  
S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the \_\_\_\_\_ th, = \_\_\_\_\_  
"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, = \_\_\_\_\_  
Lowest at Night, Black Bulb, (corrected for Index errors), on the \_\_\_\_\_ th, = \_\_\_\_\_  
"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, = \_\_\_\_\_  
Difference of above Means or Range ("exposed"), = \_\_\_\_\_

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 41.0  
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 38.6  
† Computed Temperature of Dew-Point, = 35.6  
† Do. Elastic Force of Vapour, = 2.08  
† Do. Weight of Vapour in a Cubic Foot of Air, = \_\_\_\_\_  
† Relative Humidity, (Saturation = 100), = 81  
RAIN fell on \_\_\_\_\_ Days; Amount in Inches, = \_\_\_\_\_

WIND. SUMMARY.											
Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.
A.M.	3			3	4	8	10	2		1.13	
P.M.	1			1	5	4	5	4		1.63	
Mean.	2	0	0	2	9	6	7	3	0	1.38	

1.87

Observations made and  
Return verified by

(Signed)

P. Warburton



