

## SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *Forest of Glen Tana Abbey* 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 *January* 18*90*.

The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				Rain.		WIND.				CLOUDS.				THERMOMETERS under Ground.			SEA.	OZONE.	GENERAL REMARKS.  As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc.  <i>Mention the hour at which Storms, including Thunder and Lightning, began and ended.</i>	Days of Month.		
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs. Max. in Sun-rays Min. on Grass.		9 h. A.M.		9 h. P.M.		No. of hours in which it fell.	Amount in inches.	9 h. A.M.		9 h. P.M.		Readings of the H. Cap Anemometer No. 9 h. A.M.	9 A.M.		P.M.		SUNSHINE. Hours.	9 h. A.M.						
		Barometer. * No.	Attached Thermometer.	Barometer. No.	Attached Thermometer.	Max. No.	Min. No.	Max. No.	Min. No.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.			Direction.	Force.	Direction.	Force.		Velocity (0-6) and Direction.	Amount (0-10), and Species.	Velocity (0-6) and Direction.	Amount (0-10), and Species.		No. 3 inches.					No. 12 inches.	No. 22 inches.
inches.	°	inches.	°	°	°	°	°	°	°	°	°	°																				
1	30.1	46	29.69	42	49	28			40	38	38	34			H	2	S	3			10	10	3								1	
2	29.86	45	29.67	40	50	30			43	42	34	32			S	3	SH	2			10	10	4								2	
3	29.5	39	29.39	43	49	20			31	30	42	40			H	1	SH	2			SE	7	10	4								3
4	29.33	44	29.35	47	51	23			38	37	40	38			SH	1	S	3			10	10	2									4
5	29.04	45	29.21	47	42	19			42	40	40	39	0.55		SH	2	S	5			10	10										5
6	29.63	45	29.61	54	40	20			44	41	50	49	0.26		S	2	S	3			10	10										6
7	29.49	52	29.76	49	54	27			53	51	43	41	0.12		S	5	S	2			10	10	3									7
8	29.85	47	29.31	50	50	31			46	44	45	43	0.27		S	3	S	3			10	10	2									8
9	29.52	48	29.31	46	46	29			43	41	40	39			H	5	N	2				10	3									9
10	29.45	44	29.89	46	45	27			39	38	41	39	0.36		N	1	S	2			10	10										10
11	29.8	44	29.60	50	43	21			42	41	47	46			S	2	S	2			10	NH	6	2								11
12	29.67	47	29.65	52	50	31			40	38	41	40	0.7		H	2	S	5			H	2	10	2								12
13	29.48	50	29.65	45	51	18			44	40	39	37			SH	3	SH	4			NH	4		4								13
14	29.63	43	29.24	54	45	29			42	40	39	37	0.55		S	3	S	4	NE	9	10											14
15	29.71	43	29.59	52	51	31			42	40	45	44			SE	1	S	2	NE	4	10	3										15
16	29.59	51	29.49	51	51	31			35	34	45	44			S	4	S	5			10	10	2									16
17	29.57	51	29.48	50	52	30			50	48	50	48	0.32		S	4	S	4			10	10	1									17
18	29.1	49	28.60	49	47	28			46	45	41	40			S	4	N	2			10		3									18
19	28.45	47	28.69	44	44	18			43	42	34	33	0.30		S	5	S	4			10	10										19
20	28.88	47	29.0	43	42	26			38	37	35	33	0.80		H	3	SH	4			10	10	3									20
21	29.02	41	28.83	42	40	24			37	35	34	33			H	4	N	2	NE	9	10	2										21
22	28.65	41	28.88	34	40	22			32	31	31	30			NH	2	N	1			10		1									22
23	28.76	32	29.04	36	34	05			15	14	18	17	0.40		N	1	H	1	NE	7	10	2										23
24	29.21	49	29.28	48	38	04			34	33	36	35			SH	1	S	4	NE	8	10	3										24
25	28.76	46	28.62	47	49	25			47	45	45	43	0.10		S	4	N	3			10		3									25
26	28.79	46	28.89	44	48	19			41	39	36	34			H	5	H	2	NH	6		2										
27	29.22	46	29.41	42	45	18			38	37	32	31			H	2	H	2			10		4									
28	29.78	40	29.89	44	42	19			34	33	33	32			H	1	N	2	SE	9		3										28
29	30.08	41	29.91	49	38	22			34	33	41	39			NH	2	H	2	SE	5	10	3										29
30	30.02	47	29.93	50	47	26			45	44	47	45			H	1	H	1			10	10	2									30
31	30.0	52	30.03	49	53	35			50	48	47	45			H	1	H	1			10	10	4									31
Sums.		1294	162	1232	190	186	736			08	26	29	25	4.0		80		84														
Means.		29.417	45.22	29.397	46.1	46.0	23.7			40.3	38.7	39.6	38.2			2.58		2.71														
+ Total Corrections for Instru- mental Errors.							18.0																									
+ 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	

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction  $\ddagger$  for Temp. (Col. 2), = \_\_\_\_\_"Corrected Mean" of Barometer at 9 P.M., minus the Correction  $\ddagger$  for Temp. (Col. 4), = \_\_\_\_\_

Mean at Station, corrected, and at 32', = \_\_\_\_\_

Correction for height, feet above Mean Sea-level, = \_\_\_\_\_

Mean, reduced to 32', and Sea-level, = \_\_\_\_\_

Highest Reading, corrected for Index error, on the 1<sup>st</sup> th, = *30.100*Lowest Do. Do., on the 19<sup>th</sup>, = *28.450*Difference, or Monthly Range, = *1.650*S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 7<sup>th</sup>, = *54.0*Lowest in Month, corrected for Index errors, on the 19<sup>th</sup>, = *26.0*Difference, or Monthly Range, = *28.0*"Corrected Mean" of all the Highest, (Col. 5), = *46.0*"Corrected Mean" of all the Lowest, (Col. 6), = *31.7*Difference, or Mean Daily Range, = *14.3*\*\* Calculated Mean Temperature of Month, = *38.8*

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), = *40.0*Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = *38.4*†† Computed Temperature of Dew-Point, = *36.3*†† Do. Elastic Force of Vapour, = *2.15*

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

†† Relative Humidity (Saturation = 100), = *87*RAIN fell on 12 Days; Amount in Inches, = *4.10*

WIND.		SUMMARY.									
Direction.		N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.
A.M.	2				1	11	4	11	2		2.58
P.M.	4					15	4	8			2.71
Mean.	3	0	0	1	13	4	9	1	0		2.64

(Signed) *R. Warburton Glen Tana Abbey*Observations made and  
Return verified by \_\_\_\_\_







# SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *Glen Tana Aboyne* 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 *February* 1890.

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. Max. in Sun, Min. on Grass.		9 h. A.M.		9 h. P.M.			9 h. A.M.		9 h. P.M.		9 A.M.		P.M.		9 h. A.M.									
		Barometer.	Attached Thermometer.	Barometer.	Attached Thermometer.	Max.	Min.	Max.	Min.	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.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.		No. of hours in which it fell.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.						
		inches.	°	inches.	°	°	°	°	°	°	°	°	°		°									°	°	°						
	1	29.84	46	29.69	47	55	22			48	46	42	38		H	2	H	2		10		10	3							1		
	2	29.75	44	29.92	48	50	26			36	33	40	38		H	2	H	2					5							2		
	3	30.49	29.91	50	49	27				47	44	45	43		S	2	H	1		NE	6		10	6							3	
	4	29.85	48	29.92	47	50	20			40	38	33	32		SH	2	H	1		SE	6		10	4							4	
	5	30.02	44	30.07	43	52	15			34	33	35	34		H	2	H	1					10	6							5	
	6	30.17	38	30.24	40	46	19			32	32	31	30		N		H	1		10			5								6	
	7	30.37	37	30.35	40	49	15			25	24	31	30		H	1	NH	2						4							7	
	8	30.31	33	30.22	37	44	10			20	19	25	24		NE		H							6							8	
	9	30.22	34	30.19	37	43	10			33	32	37	34		H	1	H	2		SE	9		10	4							9	
	10	30.20	42	30.15	44	38	23			36	34	33	32		S	1	S	1		10			1								10	
	11	30.18	41	30.04	46	39	24			32	31	37	35	0.20	S	2	H	3		SE	4		10	2							11	
	12	29.97	43	29.97	45	33	24			37	35	33	32		SH	3	S	2		10			10	1							12	
	13	29.79	42	29.72	49	39	23			33	33	32	30	0.11	SE	3	S	4		10			10	1							13	
	14	29.81	46	29.82	32	39	13			27	26	22	22		S	1	S	1		10			4								14	
	15	29.82	34	29.65	42	40	10			39	38	33	32	0.20	SH	1	N	1		10			10	1							15	
	16	29.5	40	29.64	45	40	20			38	36	34	33	1.25	S	2	S	2		10			10	0							16	
	17	29.83	43	30.45	39	19				39	38	35	33		S	2	S	2		10			10	2							17	
	18	30.2	43	30.24	44	41	29			39	37	37	35		S	2	S	2		10			10	1							18	
	19	30.32	42	30.19	43	45	28			37	35	35	34		SE	2	S	2		10			10	2							19	
	20	30.07	42	29.92	43	37	25			35	34	35	33		S	1	S	2		10			10								20	
	21	29.98	39	30.08	40	36	24			35	34	29	28		S	1	S	1		10			10	5							21	
	22	30.28	46	30.38	40	45	12			30	30	40	38	0.25	H	1	S	2		SE	8		10	3							22	
	23	30.48	44	30.50	45	48	20			45	43	43	41		H	2	H	2		10			10	2							23	
	24	30.52	47	30.51	45	51	30			43	41	41	39		H	1	S	1		10			10								24	
	25	30.50	41	30.37	48	47	21			34	33	41	39		N	1	N	2		10			10	2							25	
	26	30.35	46	30.49	40	47	29			39	38	33	32		N	3	N	2		10			10	1							26	
	27	30.41	39	30.39	49	40	21			31	31	29	28	0.15	N	3	N	2		SE	7		10	3							27	
	28	30.36	37	29.93	40	34	19			31	30	29	27		H	2	N	1		10			10	2							28	
	29																															29
	30																															30
	31																															31
Sums.		310	50	250	94	96	18			157	118	130	86	2.16	46		47															
Means.		30.114	41.8	30.090	43.4	43.4	20.6			35.6	34.2	34.6	33.1		1.64		1.64															
+ 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.	" 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. ha.	" 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 gale
1	Light air	3	Very fresh	6	Violent gale

*Snow 2 inches deep*  
*Snow 6" deep commenced to rain*

*Fall of Snow 1/2 inch deep*

NOTATION USED IN GENERAL REMARKS.			
a.	denotes aurora.	m.	denotes meteor.
ci.	cirrus.	ms.	meteors.
ci-cu.	cirro-cumulus.	n.	nebulae.
cu.	cumulus.	r.	rain.
cu-s.	cumulo-stratus.	h. r.	heavy rain.
d.	dew.	c. h. r.	continued heavy rain.
f.	fog.	s.	stratus.
fr.	frost.	sc.	scud.
h. fr.	hoar-frost.	s.	sleet.
h.	haze.	s.	snow.
h. d.	heavy dew.	so. ha.	solar halo.
hl.	hail.	sq.	squall.
l.	lightning.	sqs.	squalls.
li. cl.	light clouds.	t. s.	thunder.
li. sh.	light showers.	t. s. t.	thunder-storm.
lu. co.	lunar corona.	w.	wind.
lu. ha.	lunar halo.	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	Calm	1.5	Light breeze	4	Blowing hard
0.5	Very light air	2	Fresh breeze	5	Blowing gale
1	Light air	3	Very fresh	6	Violent gale

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction  $\ddagger$  for Temp. (Col. 2), = \_\_\_\_\_  
 "Corrected Mean" of Barometer at 9 P.M., minus the Correction  $\ddagger$  for Temp. (Col. 4), = \_\_\_\_\_  
 Mean at Station, corrected, and at 32', = \_\_\_\_\_  
 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, = *30.520*  
 Lowest Do. Do., on the 16 th, = *29.500*  
 Difference, or Monthly Range, = *1.020*

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 1 th, = *55.0*  
 Lowest in Month, corrected for Index errors, on the 8 th, = *18.0*  
 Difference, or Monthly Range, = *37.0*  
 "Corrected Mean" of all the Highest, (Col. 5), = *43.4*  
 "Corrected Mean" of all the Lowest, (Col. 6), = *28.6*  
 Difference, or Mean Daily Range, = *14.8*  
 \*\* Calculated Mean Temperature of Month, = *36.0*  
 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), = *35.1*  
 Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = *33.6*  
 Computed Temperature of Dew-Point, = *31.3*  
 Do. Elastic Force of Vapour, = *1.75*  
 Do. Weight of Vapour in a Cubic Foot of Air, = \_\_\_\_\_  
 Relative Humidity (Saturation 100), = *85*  
 RAIN fell on 6 Days; Amount in Inches, = *2.16*

WIND.		SUMMARY.	
Direction.	N NE E SE S SW W NW	Calm or Variable.	Mean Force.
A.M.	5	12	10
P.M.	5	29	39
Mean.	50	01	10

*2.69*

Observations made and Return verified by { *R. Warburton Glen Tana Aboyne* }







## SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Glen Tana Abayne, 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 March 1890

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. Sunray, Grass.		9 h. A.M.		9 h. P.M.			9 h. A.M.		9 h. P.M.		9 h. A.M.		9 h. P.M.		9 h. A.M.											
		Barometer.	Attached Thermometer.	Barometer.	Attached Thermometer.	Max. No.	Min. No.	Max. in Sunray.	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.		No. of hours in which it fell.	Amount in inches.	Direction.	Force.	Direction.	Force.	Readings of the H. Cup Anemometer No.	9 h. A.M.	Velocity (0-6) and Direction.	Amount (0-10), and Species.	Velocity (0-6) and Direction.						Amount (0-10), and Species.	No.	No.	No.
		* No.	°	No.	°	No.	No.	No.	No.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.		No.	No.	Direction.	Force.	Direction.	Force.	No.	9 h. A.M.	Velocity (0-6) and Direction.	Amount (0-10), and Species.	Velocity (0-6) and Direction.						Amount (0-10), and Species.	No.	No.	No.
		inches.	°	inches.	°	No.	No.	No.	No.	°	°	°	°		No.	No.	Direction.	Force.	Direction.	Force.	No.	9 h. A.M.	Velocity (0-6) and Direction.	Amount (0-10), and Species.	Velocity (0-6) and Direction.						Amount (0-10), and Species.	°	°	°
1	30.04	37	30.19	35	36	15		31	30	25	25			SE	1	H	1		SE	9	10	6								fall of snow 5" deep	1			
2	30.28	33	30.39	35	37	08		18	17	20	20			SH	1	H	1														2			
3	30.37	33	30.47	43	38	07		26	26	37	35			H		H	2			10	10	5									3			
4	30.78	46	29.50	46	47	15		45	42	39	37			N	3	H	3			10	10	6									4			
5	29.68	43	29.39	50	52	23		33	32	43	41	0.15		N	4	H	3			10	10	4									5			
6	29.40	47	29.24	49	45	29		42	39	40	38			H	3	N	1		SE	5		8									6			
7	29.28	46	29.13	40	47	29		38	35	26	25	1.0		H	4	H	2		SE	4	10	4									7			
8	29.18	37	29.1	39	42	11		38	37	27	26	1.20		NH	1	N	3			10	10	2									Rain & Fallg Snow 4" deep	8		
9	29.58	43	29.71	40	32	12		24	23	29	28			N	1	H	2		SE	8	10	7									9			
10	29.49	44	29.31	47	44	15		44	43	45	43			H	3	H	4		SH	7	10	3									10			
11	29.44	51	29.38	59	57	41		53	52	51	49			H	5	H	3		NE	8	10	6									11			
12	29.42	55	29.42	52	60	37		48	47	42	40			SH	4	H	3			10	10	6									12			
13	29.33	50	29.31	49	54	27		38	37	48	46			S	1	H	2		NH	9	10	8									13			
14	29.63	57	29.58	53	55	33	1/12	53	49	51	49			S	1	S	3		NE	8	10	6									14			
15	29.12	46	29.40	50	56	28		48	47	39	37			S	4	SH	3			10	10	3									15			
16	29.06	47	28.93	52	50	30		47	45	41	39			S	1	S	1			10	10	8									16			
17	29.07	49	29.12	50	54	29		39	37	40	39			H	2	SH	2		SE	8	SH	6	6								17			
18	29.45	44	29.58	47	53	32		34	31	37	35			N	3	N	1			10	10	4									18			
19	29.64	42	29.61	47	57	19		33	32	40	39			H	1	N	2			10	10	7									19			
20	29.55	44	29.33	46	45	24		38	37	38	35			N	1	S	2		275	10	10	2									20			
21	29.35	44	29.49	50	39	24		38	37	39	37			S	1	S	1			10	10	3									21			
22	29.46	48	29.39	50	45	21		36	35	33	31			H	1	S	1			10	10	7									22			
23	29.04	44	29.48	45	49	26		36	34	34	32			S	1	H	2		SE	8	SH	8	10								23			
24	29.38	40	29.16	47	54	15		29	28	37	35			H	1	H	2			10	10	5									24			
25	29.19	45	29.30	48	44	20		39	38	37	36	0.60		SE	2	S	2			10	10										25			
26	29.20	46	29.49	50	46	28		45	41	40	35			SE	2	H	2			10	10	7									26			
27	29.44	48	29.69	45	57	32		50	46	41	38			SE	2	H	2		SE	9	10	9									27			
28	29.44	48	29.73	50	54	28		42	40	45	43			S		H	2			10	10	15									28			
29	29.62	47	29.61	48	54	30		44	42	39	37			H	1	H	1		N	2	10	8									29			
30	29.75	47	30. -	48	53	26		40	35	40	38			H	4	N	2		SE	9		6									30			
31	30.16	46	30.12	44	50	26		48	38	36	34			N	1	N	1			10		9									31			
Sums.		1582	151	1605	214	254	110	189	122	247	192	2.95		60		62																		
Means.		29.510	44.9	29.521	46.9	48.2	23.5	39.3	37.2	38.0	36.2			1.94		2.04																		
+ 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  $\ddagger$  for Temp. (Col. 2), = \_\_\_\_\_"Corrected Mean" of Barometer at 9 P.M., minus the Correction  $\ddagger$  for Temp. (Col. 4), = \_\_\_\_\_

Mean at Station, corrected, and at 32', = \_\_\_\_\_

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, = 30.390Lowest Do. Do., on the 16 th, = 28.930Difference, or Monthly Range, = 1.460S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 12 th, = 60.0Lowest in Month, corrected for Index errors, on the \_\_\_\_\_ th, = 15.0Difference, or Monthly Range, = 45.0"Corrected Mean" of all the Highest, (Col. 5), = 48.2"Corrected Mean" of all the Lowest, (Col. 6), = 31.5Difference, or Mean Daily Range, = 16.7\*\* Calculated Mean Temperature of Month, = 39.8

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), = 38.6Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 36.7Computed Temperature of Dew-Point, = 34.1Do. Elastic Force of Vapour, = 1.98

Do. Weight of Vapour in a Cubic Foot of Air, = \_\_\_\_\_

Relative Humidity (Saturation = 100), = 85RAIN fell on 4 Days; Amount in Inches, = 2.95

WIND.		SUMMARY.					
Direction.	N	NE	E	SE	S	SW	W
A.M.	6			4	7	2	11
P.M.	6				6	2	17
Mean.	6	0	0	2	6	2	14

216

(Signed) Robt Warburton Glen TanaObservations made and  
Return verified by197  
197  
1379  
1773  
197







## SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Glen Tana Aboyne, County of Aberdeenshire, in Lat. \_\_\_\_\_, Long. \_\_\_\_\_, Distance from Sea 3 miles.

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

During the MONTH of April 1890.

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.			Temperature of WELL at depth of feet, No.	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.			9 h. A.M.		9 h. P.M.		9 h. A.M.		9 h. P.M.			9 h. A.M.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		Barometer.	Attached Thermometer.	Barometer.	Attached Thermometer.	Max.	Min.	Max. in Sunrays.	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.		No. of hours in which it fell.	Amount in inches.	Direction.	Force.	Direction.	Force.	Readings of the H. Cup Anemometer.	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.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.		No.	No.	Direction.	Force.	Direction.	Force.	No.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					

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

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

Mean at Station, corrected, and at 32', = \_\_\_\_\_

Correction for height, \_\_\_\_\_ feet above Mean Sea-level, = \_\_\_\_\_

Mean, reduced to 32', and Sea-level, = \_\_\_\_\_

Highest Reading, corrected for Index error, on the \_\_\_\_\_ th, = 30.110

Lowest Do. Do., on the 22th, = 29.150

Difference, or Monthly Range, = 0.960

\* 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.

† Enclosing corrections for both capillarity and Index Errors.

‡ The Diurnal Range for Scotland is as yet unknown.

§ Practically, though not absolutely a minus correction.

\*\* 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 4th, = 64.0

Lowest in Month, corrected for Index errors, on the 14th, = 19.0

Difference, or Monthly Range, = 45.0

"Corrected Mean" of all the Highest, (Col. 5), = 49.7

"Corrected Mean" of all the Lowest, (Col. 6), = 32.1

Difference, or Mean Daily Range, = 17.6

\*\* Calculated Mean Temperature of Month, = 40.9

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

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

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

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

Difference of above means or range ("exposed"), = \_\_\_\_\_

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 41.2

Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 38.6

‡ Computed Temperature of Dew-Point, = 35.4

‡ Do. Elastic Force of Vapour, = .207

‡ Do. Weight of Vapour in a Cubic Foot of Air, = \_\_\_\_\_

‡ Relative Humidity (Saturation = 100), = 80

RAIN fell on 6 Days; Amount in Inches, = .21

WIND.		SUMMARY.										
Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.	
A.M.	14	2	5	1	3	2	3			1.73		
P.M.	12		1	1	2	1	12	1		1.83		
Mean.	13	1	3	1	2	2	7	1	0	1.78		

3.17

Observations made and  
Return verified by

(Signed) R. Warburton







## SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Glen Tana Aboyne, 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 May 1890.

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.  0-10.	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. Max. in Sun-rays Min. on Grass.		9 h. A.M.		9 h. P.M.			No. of hours in which it fell.		Amount in inches.		9 h. A.M.		9 h. P.M.			Readings of the H. Cup Anemometer. No.		9 A.M.					P.M.		9 h. A.M.			Temperature of Well at depth of feet, Ave.	Temperature at 1 fathom, and Density.	9 A.M. 2 P.M.				
		Barometer.	Attached Thermometer.	Barometer.	Attached Thermometer.	Max.	Min.	Max.	Min.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.		No.	Force	No.	Force	Direction.	Force	Direction.	Force		Velocity (0-10), and Species.	Amount (0-10), and Species.	Velocity (0-10), and Species.					Amount (0-10), and Species.	No.	3 inches.	No.	12 inches.				No.	22 inches.		
		* No.		No.		No.	No.	No.	No.																																	
		inches.	°	inches.	°	°	°	°	°	°	°	°	°		°	°	°	°	°	°	°	°		°	°	°					°	°	°	°	°				°	°	°	°
1	29.7249	29.7050	60.24					41.40	49.49	49.49	49.49		W 1	N 1			SE 6	SK 8	5													1										
2	29.6953	29.6755	57.35					46.44	49.47	47.46	49.47		SE 2	W 2			10	SE 5	3													2										
3	29.6950	29.7453	53.34					47.46	50.48	46.46	50.48		N 1	N 2			SH 9	F 10	6													3										
4	29.7649	29.5950	59.36					44.41	49.47	44.41	49.47		N 2	NH 3			NH 5	10	8													4										
5	29.6353	29.6153	60.30					46.43	46.43	0.015	NH 3	NH 1					SE 7	NE 9	9													5										
6	29.6149	29.5950	63.29					48.47	50.46		S 1	SH 2					W 5	NH 4	7													6										
7	29.5848	29.6148	61.22					52.49	40.38		SH 2	S 1					SH 3	10	6													7										
8	29.6749	29.6851	61.22					43.42	48.46	0.025	E 1	E 1					10	NE 8	7													8										
9	29.6753	29.5955	55.34					47.45	50.49		N 1	N 2					10	10	5													9										
10	29.5152	29.4952	55.34					47.46	49.48	0.020	SE 2	S 1					10	10	4													10										
11	29.5351	29.3850	57.33					45.43	50.47	0.30	N 1	NE 2					10	10	1													11										
12	29.3352	29.4154	58.30					46.43	46.44	0.15	NH 2	W 2					10	10	1													12										
13	29.4551	29.3754	60.28					48.47	50.46		W 1	W 2					10	10	8													13										
14	29.4152	29.5753	61.24					52.47	40.37		W 2	N 3					NE 6	10	9													14										
15	29.6751	29.6954	57.39					47.43	50.49	0.096	SH 1	S 2					NE 8	10	5													15										
16	29.7951	29.5952	56.27					48.47	53.51		S 2	S 2					10	10	6													16										
17	29.3152	29.4952	53.36					50.49	51.49		S 2	S 2					10	10	6													17										
18	29.6154	29.6953	62.33					55.51	45.43		S 2	S 2					SK 9	10	5													18										
19	29.7555	29.7158	58.37					47.46	53.51		S 2	S 2					10	10	2													19										
20	29.6956	29.6155	57.38					50.49	51.49		N 1	S 2					10	10	1													20										
21	29.7853	29.9556	54.38					49.47	53.49		S 3	S 1					10	10	2													21										
22	30.1157	30.0956	57.39					56.53	51.49		W 1	S 2					10	10	8													22										
23	30.1658	30.0959	68.29					53.51	57.55		W 2	S 1					SE 8	10	12													23										
24	30.1456	30.0160	72.30					60.54	55.53		NE 1	N 1					10	10	10													24										
25	30.0156	30.0557	71.29					57.50	45.43		N 2	N 2					10	10	4													25										
26	30.0154	29.9655	59.35					47.43	43.41		N 2	N 2					10	10	2													26										
27	29.9553	29.9153	53.34					44.40	47.45		N 2	N 1					10	10	4													27										
28	29.9655	29.8954	58.35					54.48	50.47		N 1	N 2					NE 9	10	7													28										
29	29.8056	29.6952	62.34					53.48	45.43		N 3	N 2					10	10	2													29										
30	29.7550	29.8348	55.30					42.36	37.35	0.03	N 4	N 4					10	10	4													30										
31	29.9457	29.8955	48.32					42.37	43.41		N 4	N 2					10	SK 8	7													31										
Sums.	17 13 12	2268 79	2209 111	470 70				266 175	255 186	2.04		57	57																													
Means.	29.732 525	29.713 536	58.7323					46.6456	48.2460			184	184																													
+ 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												

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction  $\frac{1}{10}$  for Temp. (Col. 2), = \_\_\_\_\_"Corrected Mean" of Barometer at 9 P.M., minus the Correction  $\frac{1}{10}$  for Temp. (Col. 4), = \_\_\_\_\_

Mean at Station, corrected, and at 32°, = \_\_\_\_\_

Correction for height, feet above Mean Sea-level, = \_\_\_\_\_

Mean, reduced to 32°, and Sea-level, = \_\_\_\_\_

Highest Reading, corrected for Index error, on the 23<sup>th</sup>, = 30.160Lowest Do. Do., on the 17<sup>th</sup>, = 29.310

Difference, or Monthly Range, = 0.850

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 24<sup>th</sup>, = 72.0Lowest in Month, corrected for Index errors, on the 7<sup>th</sup>, = 30.0

Difference, or Monthly Range, = 42.0

"Corrected Mean" of all the Highest, (Col. 5), = 58.7

"Corrected Mean" of all the Lowest, (Col. 6), = 40.3

Difference, or Mean Daily Range, = 18.4

\* Calculated Mean Temperature of Month, = 49.5

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

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

Lowest at Night, Black Bulb (corrected for Index errors), on the \_\_\_\_\_, = \_\_\_\_\_

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

Difference of above means or range ("exposed"), = \_\_\_\_\_

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 48.4

Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 45.8

Computed Temperature of Dew-Point, = 43.2

Do. Elastic Force of Vapour, = 2.80

Do. Weight of Vapour in a Cubic Foot of Air, = \_\_\_\_\_

Relative Humidity (Saturation = 100), = 83

RAIN fell on 7 Days; Amount in Inches, = 2.04

WIND.		SUMMARY.									
Direction.		N	NE	E	SE	S	SW	W	NW	Cal. or Variable.	Mean Force.
A.M.	12	1	1	2	6	2	5	2			184
P.M.	12	1	1		1	1	3	2			184
Mean.	12	1	1	1	8	2	4	2	0		184

3.38

Observations made and  
Return verified by(Signed) Robt Warburton Glen Tana







## SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Glen Tana Abayne, 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 June 1890.

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. Sun's rays, Grass.		9 h. A.M.		9 h. P.M.			9 h. A.M.		9 h. P.M.		9 A.M.		P.M.										
		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.	Velocity (0-6) and Direction.	Amount (0-10) and Species.	Velocity (0-6) 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.									
		inches.	°	inches.	°	°	°	°	°	°	°	°	°		°	°	°	°	°	°	°	°									
	1	29.74	53	29.61	56	58	30			43	41	41	38		N	1	N	2		NE	6	NH	9	5					1		
	2	29.64	54	29.36	56	60	35			43	41	57	49		N	2	N	1		10		10	1					2			
	3	29.43	59	29.29	56	60	41			57	53	55	53		N	3	N	2		10		10	8					3			
	4	29.38	58	29.55	60	63	39			49	47	47	45		N	2	N	2		SE	9	SH	8	5					4		
	5	29.59	63	29.61	50	60	34			46	44	42	40		NH	1	N	2		10		10	2					5			
D.S.	6	29.57	49	29.89	58	63	36			50	48	40	39	0.04	S	4	S	2		10	NH	6	2					6			
	7	30.88	54	30.82	57	65	25			48	45	49	46		N	1	N	2		10		10	10					7			
	8	30.08	53	29.86	56	58	34			54	51	50	48		N	1	N	2		10		10	10					8			
	9	29.72	55	29.76	55	58	35			55	53	54	50		N	2	S	2		10		10	9					9			
	10	29.75	57	29.59	55	66	39			57	52	53	51		S	1	S	2		10		10	7					10			
	11	29.53	57	29.58	56	60	30			58	55	50	48		S	1	N	2		10		10	5					11			
	12	29.65	55	29.91	53	64	39			51	50	49	47		N	3	N	2		10		10	—					12			
	13	30.11	56	30.19	54	54	35			45	42	43	41		N	2	S	1		10		10	6					13			
	14	30.21	53	30.05	56	56	34			46	42	49	47		N	1	N	1		10	NE	8	9					14			
	15	29.87	52	29.76	50	65	27			50	46	53	51		N	1	NH	2		10	SE	9	8					15			
	16	29.68	53	29.65	55	64	36			51	47	54	50		N	2	N	3		—	SH	6	10					16			
	17	29.61	57	29.69	55	69	28			56	49	47	45		N	2	N	3		10		10	8					17			
	18	29.79	57	29.79	57	60	39			52	46	53	50	0.02	NH	2	N	2		10		10	6					18			
	19	29.83	58	29.83	59	63	42			55	50	53	49		N	3	N	2		10		10	7					19			
	20	29.65	67	29.88	56	62	42			55	49	58	53		N	3	S	2		10		—	10					20			
	21	29.79	59	29.81	60	63	37			55	48	53	60		N	3	N	1		NE	7		10	8					21		
	22	29.81	57	29.91	59	75	30			49	47	45	40		N	1	S	2		NE	9		—	11					22		
	23	29.93	56	29.87	59	80	25			50	48	55	48		N	1	N	2		10	SH	2	10					23			
	24	29.89	60	29.86	66	72	39			58	50	57	49		N	3	S	2		10		10	9					24			
	25	29.53	59	29.82	58	71	37			58	55	51	49		N	4	N	1		NH	9		10	9					25		
	26	29.81	57	29.60	59	63	27			55	53	49	47		N	1	S	2		10		9	6					26			
	27	29.49	58	29.79	59	65	35			51	50	53	50		N	1	N	2		10		10	8					27			
	28	29.72	54	29.51	50	58	35			50	49	49	47	0.7	S	2	S	1		10		10	8					28			
	29	29.51	59	29.49	57	63	32			55	51	53	50		N	2	N	3		—		10	10					29			
	30	29.31	55	29.38	56	60	30			53	50	51	49	0.15	S	3	S	2		10		10	3					30			
	31																												31		
	Sums.	2167	188	2199	185	96	121			55	25	58	219	1.29		59		57													
	Means.	29.722	563	29.733	562	632	34.0			51.8	48.4	50.3	47.3	?		1.97		1.90													
	+ 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.	meteors.		
ci-on.	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. ha.	solar halo.		
h. d.	heavy dew.	sq.	squall.		
hl.	hail.	sqs.	squalls.		
l.	lightning.	t.	thunder.		
li. cl.	light clouds.	t. s.	thunder-storm.		
li. sh.	light showers.	w.	wind.		
lu. co.	lunar corona.	gc.	gale of wind.		
lu. ha.	lunar halo.				

TABLE FOR ESTIMATING FORCE OF WIND.					
Estimated Force, 0-6.	Common Designation.	Estimated Force, 0-6.	Common Designation.	Estimated Force, 0-6.	Common Designation.
0	Calm	1-5	Light breeze	4	Blowing hard
0.5	Very light air	2	Fresh breeze	5	Blowing a gale
1	Light air	3	Very fresh	6	Violent gale

## NOTATION USED IN GENERAL REMARKS.

a.	denotes aurora.	m.	denotes meteor.
ci.	" cirrus.	ms.	" micrometeor.
ci.-cu.	" cirro-cumulus.	n.	" nimbus.
ci.-s.	" cirro-stratus.	r.	" rain.
cu.	" cumulus.	h. r.	" heavy rain.
cu.-s.	" cumulo-stratus.	c. h. r.	" continued heavy rain.
d.	" dew.	s.	" stratus.
f.	" fog.	sc.	" squall.
fr.	" frost.	s.	" sleet.
h.-fr.	" hoar-frost.	s.	" snow.
h.	" haze.	so. ha.	" 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), = \_\_\_\_\_

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

Mean at Station, corrected, and at 32°, = \_\_\_\_\_

Correction for height, feet above Mean Sea-level, = \_\_\_\_\_

Mean, reduced to 32°, and Sea-level, = \_\_\_\_\_

Highest Reading, corrected for Index error, on the 14 th, = 30.210

Lowest Do. Do., on the 3 th, = 29.290

Difference, or Monthly Range, = 0.920

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 23 th, = 80.0

Lowest in Month, corrected for Index errors, on the 7 th, = 33.0

Difference, or Monthly Range, = 45.0

"Corrected Mean" of all the Highest, (Col. 5), = 63.2

"Corrected Mean" of all the Lowest, (Col. 6), = 42.0

Difference, or Mean Daily Range, = 21.2

\*\* Calculated Mean Temperature of Month, = 52.6

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), = 51.0

Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 48.8

Computed Temperature of Dew-Point, = 46.5

Do. Elastic Force of Vapour, = 318

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

Relative Humidity (Saturation = 100), = 85

RAIN fell on 4 Days; Amount in Inches, = 1.29

WIND.		SUMMARY.										
Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.	
A.M.	17				5		6	2		1.97		
P.M.	11				10		8	1		1.90		
Mean.	14	0	0	0	7	0	7	2	0	1.94		

Observations made and  
Return verified by

(Signed) Robt Warburton, Glen Tana







## SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *Glen Tana Aboyne*, 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 *July* 189*0*.

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.	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.			9 h. A.M.		9 h. P.M.		9 h. A.M.		9 h. 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.		No. of hours in which it fell.	Amount in inches.	Direction.	Force.	Direction.	Force.	Readings of the H. Cup Anemometer.	Velocity (0-10) and Direction.		Amount (0-10), and Species.	Velocity (0-10) and Direction.	Amount (0-10), and Species.					No. 3 inches.	No. 12 inches.	No. 22 inches.
		* No.	inches.	°	inches.	°	°	°	°	°	°	°	°		°	°	°	°	°	°	°	°		°	°	°					°	°	°
	1	29.53	58	29.61	55	59	39			51	50	50	58			N	2	N	1			10		3						1			
	2	29.62	56	29.60	55	58	35			51	50	50	49	0.09		N	1	S	2			10		10	4					2			
	3	29.62	56	29.64	58	59	35			49	48	52	49			N	1	S	2			10		10	5					3			
	4	29.65	56	29.64	57	58	35			49	48	53	51			N	2	N	2			10		10	4					4			
	5	29.65	55	29.62	53	58	36			51	50	50	49			N	2	N	1			10	NH	9	7					5			
	6	29.64	55	29.64	53	56	35			53	51	51	50			N	1	N	1			10		10	5					6			
	7	29.62	52	29.49	53	53	32			51	50	46	45	0.20		NH	1	S	2			10		10	3					7			
	8	29.29	53	29.32	54	57	34			43	42	52	50	0.92		N	2	H	2			10		10	8					8			
	9	29.39	52	29.59	52	57	35			51	50	49	47			H	3	H	2			10		10	6					9			
	10	29.76	53	29.81	52	54	36			51	50	47	45			N	2	N	2			10		10	5					10			
	11	29.82	53	29.79	50	58	34			49	48	50	47			N	1	N	2			10		10	5					11			
	12	29.71	52	29.53	50	57	34			51	50	60	58	0.18		H	1	H	2			10		10	6					12			
	13	29.37	55	29.24	60	65	42			57	55	59	57	0.29		S	2	SH	3			10		10	4					13			
	14	29.19	58	29.40	54	69	40			62	61	57	55			H	2	H	2			10		10	7					14			
	15	29.49	57	29.70	54	62	40			60	59	53	51	0.05		SH	1	NH	1			NH	9		10	9					15		
	16	29.94	56	29.92	54	65	30			57	56	55	53	0.15		NE	1	H	2			10		10	6					16			
	17	29.95	55	29.73	55	62	30			58	57	50	48	0.12		H	1	H	1			10		10	3					17			
	18	29.69	57	29.72	54	60	41			55	53	53	51			H	1	NH	2			10		10	1					18			
	19	29.91	56	29.99	57	60	35			50	58	57	55	0.06		N	2	N	1			10		10	4					19			
	20	30.01	59	29.91	62	65	34			60	58	63	61			N	2	NH	2			NE	6		10	10					20		
	21	29.89	59	29.73	63	70	36			66	65	62	59			N	2	N	3			NE	8		10	10					21		
	22	29.75	61	29.74	61	75	48			58	57	57	56			N	9	N	2			NH	9		10	11					22		
	23	29.75	58	29.62	62	68	43			56	55	49	47			H	2	H	3			10		10	10					23			
	24	29.67	59	29.74	55	68	41			55	54	49	48			NH	4	H	2			10		10	10					24			
	25	29.83	57	29.80	53	58	35			55	55	59	57			H	2	H	1			10		10	10					25			
	26	29.67	55	29.59	62	64	30			60	59	61	58			S	2	H	1			NE	9		10	6					26		
	27	29.58	60	29.51	60	63	40			59	58	57	55			SH	2	H	2			10		10	2					27			
	28	29.47	59	29.50	59	60	36			55	53	47	45			S	1	H	1			10		10	7					28			
	29	29.64	58	29.52	58	68	41			45	44	44	43	0.12		H	1	S	2			NE	9		10	6					29		
	30	29.43	61	29.40	60	68	41			64	59	60	55	0.04		S	2	S	2			NE	9		10	9					30		
	31	29.52	59	29.58	58	69	36			63	62	53	50			H	2	H	1			SE	6		10	8					31		
Sums.		19 15	17	19 15	11	17	10			145	105	105	142	2.4			53		55														
Means.		29.64	56.5	29.63	56.2	62.0	36.5			54.7	53.4	53.4	51.4				1.71		1.77														
+ 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.	mist.
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. ha.	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  $\ddagger$  for Temp. (Col. 2), = \_\_\_\_\_"Corrected Mean" of Barometer at 9 P.M., minus the Correction  $\ddagger$  for Temp. (Col. 4), = \_\_\_\_\_

Mean at Station, corrected, and at 32', = \_\_\_\_\_

Correction for height, feet above Mean Sea-level, = \_\_\_\_\_

Mean, reduced to 32', and Sea-level, = \_\_\_\_\_

Highest Reading, corrected for Index error, on the 20th, = *30.010*Lowest Do. Do., on the 14th, = *29.190*Difference, or Monthly Range, = *0.820*S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 22th, = *75.0*Lowest in Month, corrected for Index errors, on the \_\_\_\_\_th, = *38.0*Difference, or Monthly Range, = *37.0*"Corrected Mean" of all the Highest, (Col. 5), = *62.0*"Corrected Mean" of all the Lowest, (Col. 6), = *44.5*Difference, or Mean Daily Range, = *17.5*\*\* Calculated Mean Temperature of Month, = *53.2*

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), = *54.0*Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = *52.4*Computed Temperature of Dew-Point, = *50.8*Do. Elastic Force of Vapour, = *3.71*

Do. Weight of Vapour in a Cubic Foot of Air, = \_\_\_\_\_

Relative Humidity (Saturation - 100), = *89*RAIN fell on 11 Days; Amount in Inches, = *2.13*

WIND.		SUMMARY.									
Direction.		N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.
A.M.		12	1			4	2	10	2		1.71
P.M.		9				5	1	13	3		1.77
Mean.		10	1.0	0	4	2	11	3	0		1.74

3.03

Observations made and  
Return verified by(Signed) *Robert Warburton Glen Tana Aboyne*







## SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *Glen Tana Abayne*, County of *Aberdeen Shire*, in Lat. \_\_\_\_\_, Long. \_\_\_\_\_, Distance from Sea *3.5* miles.

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

During the MONTH of *August* 188*9*.

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. H.ours.	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.			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.	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.		No. of hours in which it fell.	Direction.	Force.	Direction.	Force.	Velocity (0—10), and Species.	Amount (0—10), and Species.	Velocity (0—10), and Species.		Amount (0—10), and Species.	No. 8 inches.	No. 12 inches.					No. 22 inches.					
		* No.		No.		No.	No.	No.	No.						No.																				9 A.M.	2 P.M.
		inches.	°	inches.	°	°	°	°	°	°	°	°	°		°																					
	1	29.67	60	29.65	60	69	37			57	56	57	55	0.26	H	1	H	2		NE	9	10	9								1					
	2	29.86	58	29.89	60	63	41			55	54	59	57		H	1	N	2		10	10	8								2						
	3	29.90	58	29.82	60	72	34			61	59	60	58	0.16	H	1	S	2		NE	7	10	10								3					
	4	29.87	63	29.86	65	70	35			62	62	63	61		S	1	H	2		10	10	8								4						
	5	29.91	66	29.79	65	72	54			65	64	57	56		SH	1	H	2		10	10	10								5						
	6	29.95	63	30.01	58	71	44			55	53	55	53	0.08	N	1	S	1		10	10	2								6						
	7	30.06	60	30.05	59	60	40			57	55	55	53		H	1	H	1		10	—	10								7						
	8	30.08	56	30.08	60	68	31			59	57	53	52		H	1	H	1		—	—	11								8						
	9	30.08	58	30.02	60	78	34			57	56	57	55		H	1	H	2		NW	9	10	9							9						
	10	29.97	61	29.81	60	66	33			59	57	55	53		E	2	E	3		NE	7	10	12							10						
	11	29.71	61	29.69	60	68	34			59	58	55	53	0.60	E	3	SE	2		10	10	—								11						
	12	29.65	61	29.63	60	60	46			57	55	55	53	0.44	NE	1	H	2		10	10	—								12						
	13	29.67	58	29.59	56	58	48			57	52	55	54		N	1	H	2		10	10	3								13						
	14	29.57	58	29.53	60	58	35			57	55	55	53		H	1	SH	2		10	10	7								14						
	15	29.08	58	29.09	55	67	37			53	52	51	49	0.34	S	2	S	4		10	10	2								15						
	16	29.24	57	29.38	60	62	41			53	52	57	55		S	1	S	2		10	10	8								16						
	17	29.40	59	29.60	60	64	42			57	55	56	54		N	1	N	1		NW	8	10	3							17						
	18	29.68	58	29.74	57	62	41			54	53	55	53	0.22	H	1	S	2		10	10	3								18						
	19	29.77	56	29.48	55	58	37			54	53	53	51		H	1	H	2		10	10	4								19						
	20	29.61	57	29.43	55	63	35			55	54	47	45		H	1	H	2		10	10	5								20						
	21	29.60	56	29.50	53	66	32			49	40	53	51	0.20	H	1	S	1		10	SH	8	3							21						
	22	29.57	55	29.53	58	59	37			56	55	53	51		H	3	H	1		NW	9	10	8							22						
	23	29.43	54	29.48	54	62	35			50	49	53	51	0.23	NW	1	SH	2		10	10	3								Thunder showers with showers of hail 7 <sup>29</sup>	23					
	24	29.44	52	29.42	56	58	29			51	50	50	48	0.15	S	3	S	2		10	10	2								Thunder showers	24					
	25	29.42	55	29.27	56	60	37			51	50	50	49		N	1	S	2		10	10	2									25					
	26	29.10	55	29.60	56	59	35			48	47	50	48	0.65	N	1	H	2		10	10	—									26					
	27	29.11	54	29.34	55	54	35			51	50	45	43	0.26	N	1	N	2		10	10	2								3 Bels of thunder 4 17	27					
	28	29.56	56	29.69	54	56	35			59	57	43	41	0.03	N	1	N	1		10	SE	9	9								28					
	29	29.77	51	29.89	50	56	28			46	44	43	41		N	1	H	2		10	10	3									29					
	30	29.98	53	30.0	49	63	32			45	43	43	41		NW	1	N	1		SE	8	—	6								30					
	31	30.06	52	30.07	55	58	32			48	45	53	51		N	1	N	2		10	—	10									31					
	Sums.	16 13 14 15 15 10 15 63		20 65 229	213 5 229	90 21				144 92	96 37	362	39	57																						
	Means.	29.666	57.4	29.689	57.4	62.9	368			54.7	53.0	53.1	51.2																							
	+ 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  $\frac{1}{10}$  for Temp. (Col. 2), = \_\_\_\_\_"Corrected Mean" of Barometer at 9 P.M., minus the Correction  $\frac{1}{10}$  for Temp. (Col. 4), = \_\_\_\_\_

Mean at Station, corrected, and at 32°, = \_\_\_\_\_

Correction for height, feet above Mean Sea-Level, = \_\_\_\_\_

Mean, reduced to 32°, and Sea-level, = \_\_\_\_\_

Highest Reading, corrected for Index error, on the 8<sup>th</sup>, = *30.080*Lowest Do. Do., on the 15<sup>th</sup>, = *29.082*Difference, or Monthly Range, = *1.000*S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 9<sup>th</sup>, = *78.0*Lowest in Month, corrected for Index errors, on the 29<sup>th</sup>, = *36.0*Difference, or Monthly Range, = *42.0*"Corrected Mean" of all the Highest, (Col. 5), = *62.4*"Corrected Mean" of all the Lowest, (Col. 6), = *44.8*Difference, or Mean Daily Range, = *18.1*\*\* Calculated Mean Temperature of Month, = *53.9*S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the \_\_\_\_\_<sup>th</sup>, = \_\_\_\_\_

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

Lowest at Night, Black Bulb (corrected for Index errors), on the \_\_\_\_\_<sup>th</sup>, = \_\_\_\_\_

"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), = *53.9*Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = *52.1*† Computed Temperature of Dew-Point, = *50.8*† Do. Elastic Force of Vapour, = *364*

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

† Relative Humidity (Saturation = 100), = *88*RAIN fell on 13 Days; Amount in Inches, = *3.62*

WIND.		SUMMARY.									
Direction.		N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.
A.M.		9	1	2		4	1	2	2		126
P.M.		6		1	8	2	13				184
Mean.		7	1	2	0	6	2	12	1	0	155

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(Signed) *R. Warburton Glen Tana Abayne*Observations made and  
Return verified by {







## SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *Glen Tana Aboyne* County of *Aberteen 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 *September* 18*90*.

The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				Rain.	WIND.				CLOUDS.				THERMOMETERS under Ground.			SEA.	OZONE.	GENERAL REMARKS.  As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc.  <i>Mention the hour at which Storms, including Thunder and Lightning, began and ended.</i>	Days of Month.			
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs. Grass.		9 h. A.M.		9 h. P.M.			9 h. A.M.		9 h. P.M.		9 A.M.		P.M.		9 h. A.M.									
		Barometer.	Attached Thermometer.	Barometer.	Attached Thermometer.	Max.	Min.	Max. in Sun's rays.	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.		No. of hours in which it fell.	Amount in inches.	Direction.	Force.	Direction.	Force.	Readings of the H. Cup Anemometer. No.	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.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.		No.	No.	Direction.	Force.	Direction.	Force.	9 h. A.M.	9 h. A.M.	Amount (0-10), and Direction.	Amount (0-10), and Species.	Hours.					No.	No.	No.
		inches.	°	inches.	°	°	°	°	°	°	°	°	°		°	°	°	°	°	°	°	°	°	°	°					°	°	°
	1	29.97	50	29.81	57	56	28			54	47	53	51		S	2	W	1		10	10	5								1		
	2	29.82	56	29.82	60	59	39			58	56	50	49		N	1	W	1		10	10	20								2		
	3	29.84	58	29.80	60	71	39			52	51	52	54	0.16	N	1	S	2		10	10	10								3		
	4	29.85	62	30.05	64	71	43			61	56	57	55		NW	1	N	1		SW	8	10	12							4		
	5	30.14	61	30.06	60	71	42			53	50	53	48		NW	1	N	1		10	NW	9	10							5		
	6	30.22	58	30.25	62	70	38			55	50	53	51		N	1	N	2		NW	9		11							6		
	7	30.28	57	30.19	64	74	33			63	58	57	55		N	1	N	1				12								7		
	8	30.21	59	30.05	61	77	34			65	60	56	54		N	1	N	1				12								8		
	9	30.01	64	30.07	59	73	42			58	56	54	50		N	3	N	1		10	10	10								9		
	10	30.01	55	29.89	61	65	30			52	48	57	55		H	1	N	2		10		9								10		
	11	29.83	59	30.05	60	58	43			55	52	55	53		SE	1	H	1		10		10								11		
	12	30.05	57	30.11	59	69	34			56	54	53	50		SE	1	H	1		SE	8		12							12		
	13	30.06	54	30.03	61	71	31			55	54	57	55		N	2	N	2				12								13		
	14	30.03	58	30.06	64	71	36			59	58	60	58		SH	1	H	2				10	12							14		
	15	29.96	59	29.81	60	73	37			58	57	59	57		H	1	H	2		NE	8	10	8							15		
	16	29.89	58	29.78	60	62	36			56	55	57	54		S	1	SH	1		10		7								16		
	17	29.79	68	29.72	60	64	44			55	53	58	56	0.28	S	2	H	1		SH	8		5							17		
	18	29.71	59	29.76	61	62	46			56	55	59	57	0.30	S	1	S	1		10	10	0								18		
	19	29.77	58	29.70	57	63	41			53	52	53	57	0.15	SH	1	S	2		10	10	2								19		
	20	29.61	59	29.47	57	62	43			55	53	54	52	0.20	S	2	S	3		10	10									20		
	21	29.46	56	29.40	59	58	42			53	50	53	51		S	3	S	2		10	10	1								21		
	22	29.57	56	29.57	54	57	33			51	50	50	47		N	1	N	2		10	NW	8	2							22		
	23	29.70	56	29.65	68	62	34			53	51	46	45		N	1	W	2		10	10	4								23		
	24	29.65	56	29.81	55	59	36			57	53	50	48		SH	2	H	2		SE	6	SH	7	8						24		
	25	30.04	52	29.90	59	64	36			53	51	59	57		H	2	H	2		NE	6	10	8							25		
	26	29.77	61	30.0	62	66	43			66	64	60	58		H	4	H	3		SE	8		9							26		
	27	29.92	65	29.89	64	70	48			64	63	59	57		H	4	H	2		SE	9	NW	9	6						27		
	28	29.89	59	29.78	60	67	38			52	48	53	51		H	1	H	2		10	NW	6	9							28		
	29	29.66	60	29.04	54	62	38			52	49	49	47		H	1	N	2		10		8								29		
	30	29.54	51	29.29	50	61	32			47	45	41	40	0.20	H	2	H	3		10	10	3								30		
	31																														31	
Sums.		16 12	17	13 13	10	11	13			17 99	133	66		1 29	47	51																
Means.		29.873	577	29.828	597	65.6	38.0			53.9	53.3	54.4	52.2		157	170																
+ 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.	micro-meteor.	h.	hail.
ci.-cu.	cirro-cumulus.	n.	nebula.	r.	rain.
ci.-s.	cirro-stratus.	r.	rain.	h. r.	heavy rain.
cu.	cumulus.	c. h. r.	continued heavy rain.	s.	stratus.
cu.-s.	cumulo-stratus.	s. s.	sleet.	sc.	scud.
d.	dew.	s.	snow.	st.	streak.
f.	fog.	s.	sleet.	so. ha.	solar halo.
fr.	frost.	s.	sleet.	sq.	squall.
h.-fr.	hoar-frost.	s.	snow.	sqa.	squalls.
h.	haze.	so. ha.	solar halo.	t.	thunder.
h. d.	heavy dew.	sq.	squall.	t. s.	thunder-storm.
hl.	hail.	w.	wind.	g.	gale of wind.
l.	lightning.				
li. cl.	light clouds.				
li. sh.	light showers.				
lu. co.	lunar corona.				
lu. ha.	lunar halo.				

TABLE FOR ESTIMATING FORCE OF WIND.					
Estimated Force, 0-6.	Common Designation.	Estimated Force, 0-6.	Common Designation.	Estimated Force, 0-6.	Common Designation.
0	Calm	1.5	Light breeze	4	Blowing hard
0.5	Very light air	2	Fresh breeze	5	Blowing a gale
1	Light air	3	Very fresh	6	Violent gale

## NOTATION USED IN GENERAL REMARKS.

a.	denotes aurora.	m.	denotes meteor.
ci.	cirrus.	ms.	meteors.
ci. cu.	cirro-cumulus.	n.	nebula.
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. ha.	solar halo.
h.	haze.	sq.	squall.
h. d.	heavy dew.	sq.	squalls.
hl.	hail.	t.	thunder.
l.	lightning.	t. s.	thunder-storm.
lk. cl.	light clouds.	w.	wind.
lk. sh.	light showers.	g.	gale of wind.
lu. co.	lunar corona.		
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  $\ddagger$  for Temp. (Col. 2), = \_\_\_\_\_"Corrected Mean" of Barometer at 9 P.M., minus the Correction  $\ddagger$  for Temp. (Col. 4), = \_\_\_\_\_

Mean at Station, corrected, and at 32', = \_\_\_\_\_

Correction for height, \_\_\_\_\_ feet above Mean Sea-level, = \_\_\_\_\_

Mean, reduced to 32', and Sea-level, = \_\_\_\_\_

Highest Reading, corrected for Index error, on the \_\_\_\_\_ th, = \_\_\_\_\_

Lowest Do. Do., on the \_\_\_\_\_ th, = \_\_\_\_\_

Difference, or Monthly Range, = \_\_\_\_\_

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

Lowest in Month, corrected for Index errors, on the \_\_\_\_\_ th, = \_\_\_\_\_

Difference, or Monthly Range, = \_\_\_\_\_

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

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

Difference, or Mean Daily Range, = \_\_\_\_\_

\*\* Calculated Mean Temperature of Month, = \_\_\_\_\_

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

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

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

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

Difference of above means or range ("exposed"), = \_\_\_\_\_

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

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

Computed Temperature of Dew-Point, = \_\_\_\_\_

Do. Elastic Force of Vapour, = \_\_\_\_\_

Do. Weight of Vapour in a Cubic Foot of Air, = \_\_\_\_\_

Relative Humidity (Saturation = 100), = \_\_\_\_\_

RAIN fell on \_\_\_\_\_ Days; Amount in Inches, = \_\_\_\_\_

WIND.		SUMMARY.			
Direction.		N	NE	E	SE
A.M.	8				
P.M.	9				
Mean.	8.0	0.1	5.2	12.1	0

(Signed) *Robert Warburton Glen Tana*Observations made and  
Return verified by



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

The Council of the Society remind that the Set-Registering Thermometers, and the Dry and Wet Bulb Hygrometers, be kept in Stevenson's Louver-boarded Box for Protection of the Instruments, painted white inside and outside, and Thermometers painted white inside and outside, and secured from ground level by four feet posts, also painted white, firmly screwed to four front posts, 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 Thermometer Box is to be placed over a plot of grass, and in a free open space to which the sun's rays have free access, and so arranged as to be exposed to the sun during the day, observing as much of the day as surrounding conditions enable the Observer to secure. The Thermometers are suspended on cross-laths in the interior of the Box, and face the door, which should open to the north.

The Council regard the question of UNIFORMITY OF HEIGHT AND POSITION OF THERMOMETER BOXES, AS A MATTER OF THE MOST VITAL IMPORTANCE TO METEOROLOGICAL OBSERVATION, since without it Observations made at different Stations are incomparable, and thus rendering it impossible to compare the Climates of places with each other as regards their most important features.

Professor Phillips, and Negretti and Zambra's Maximum Thermometers, and Kuhnert's Minimum Thermometer, and Set-Registering thermometers, are recommended. It is recommended that these instruments be graduated on the glass stem. The Minimum Thermometer is liable to two derangements—*viz*, the occurrence of spurts breaking, and part of the tube distilling by high temperature and lodging at the top of the bulb. This derangement of occasional concurrence with protected Thermometers, but of frequent concurrence with exposed Thermometers. Hence a systematic examination of Minimum Thermometers ought to be a regular part of the work carried on by each Observer.

that it Observations made at different Stations are comparable, and it is thus possible to compare the Climates of places with each other as regards their most important features.

Professor Phillips and Negretti and Zambias's Minimum Thermometers, and Rutherford's recommended that these thermometers be graduated on the glass stem. The minimum thermometer is liable to two derangements—viz, the spirit breaking and part of the spirit distilling by high temperature and lodging at the top of the tube. This derangement of occasional concurrence with protected Thermometers, but of frequent concurrence with exposed Thermometers. Hence a systematic examination of Minimum Thermometers ought to be a regular part of the work carried on by each Observer. Fortunately, Spirit Thermometers may be easily

[illegible]

**Black-Bulb Thermometers.** During night, have a black coating, which may easily be made, or mended, by the application of a mixture of lampblack and putty. They are placed in shallow blackened boxes, whose sides protect the bulbs from the wind. The Maximum should be freely exposed to the sun, and the Minimum should rest on wooden supports a few inches from the surface of the grass, in an open situation. Snow must not be allowed to cover either of these Thermometers; nor the sun's heat to affect the Minimum Thermometer by distillation. Black-bulbs enclosed in glass jackets may so be used, being intended comparable to the

above. It must, however, be added, that the whole subject of the investigation of Solar and Terrestrial radiation is not, yet in a sufficiently advanced state to warrant the exclusive recommendation of any one of these methods.

The Hydrogen of the Society's Stations consists of five Thermometers usually, but not necessarily, mounted *Pyran* and *Wet Bulb* on one frame. As apparently slight deviations from the approved form of this apparatus seriously vitiate the *Hygrometer* Observations, Observers are specially requested to attend to the following conditions:—The bulbs must hang down at least an inch free from the sides and must be kept well forward.

[illegible]

the eye exactly opposite the tip of the index column of mercury. The reading ought to be taken to tenths of a degree, and noted in decimals. Thus the Thermometer will be read— $39.9^{\circ}$ ,  $40.0^{\circ}$ , or  $40.1^{\circ}$ ; or again,  $40.4^{\circ}$ ,  $40.5^{\circ}$ ,  $40.6^{\circ}$ , according as it indicates a little under, an exact coincidence with, or a little over  $40^{\circ}$ , or  $40.1^{\circ}$ , respectively. So also  $40.2^{\circ}$  and  $40.3^{\circ}$ , more or less, must be registered  $40.2^{\circ}$ ,  $40.3^{\circ}$ , and  $40.4^{\circ}$ , 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 person of the Observer. The Hygrometer is read at 9 a.m. and 9 p.m. The Self-Registering Thermometers are read at 9 p.m. only. It is to be observed, in reading the greatest and least degrees of temperature in the last two hours preceding, that it is a matter of importance to observe the exact temperature.

Indifference when the Self-Registering Thermometers are read, since it is in winter, at least, the extremes may occur at any hour; and it is necessary to refer their occurrence to their proper meteorological day. In the Society's schedules, the indications registered on the 24th are those of a series of phenomena commencing at 9 p.m. on the 24th 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, as are not graduated on the stem, but merely on an attached 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 Self-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 tested once a year, in snow or melting ice.

In selecting instruments, the following points require attention.—The divisions of the vernier of Barometers in reference to their scales, and the perfect freedom of the Barometrical air; the

correct numbering of the scale of every instrument; the rejection of Thermometers the frames of which are not likely to stand exposure to the weather, as shown in the past by repeated and serious breakings of Thermometers of similar construction; and its regard to the use of the same kind of Thermometers, as of Philip's or Maximum Thermometers, after Negretti and Zamboni's, or 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. Very great care should be bestowed on the Observations of the Wind, the accuracy of which, both as regards Direction and Force, is so essential towards the right discussion of many of the more important problems of the science. A Wind-Vane ought to be elevated at least 12 feet above surrounding objects. When it oscillates incessantly, the direction of wind direction should be taken. In all cases but especially when the Vane is stationary, and when the wind is well-exposed situations. Careful observations are recommended to be made on the changes in the direction of smoke, etc., during storms, exact observations at every hour of Greenwich time. Such a system of simultaneous observation, pursued at different Stations, is likely to give highly valuable and important results, particularly in connection with the system of thick-plate'd Stations over a limited district round Edinburgh called STORM STATIONS, in the course of being established by the Society for the systematic investigation of the relation of the force of the wind to BAROMETRIC PRESSURES, and other points connected with storms. The Council would recommend the Hemispherical Cup 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

the Force of the Wind at any particular hour of the observation, the Pressure of the Air, the Direction and Force of the Wind, the Direction and Force of the Anemometers recently brought under the notice of the Society by Mr. R. Ballingall, the Society's Observer, the Honorary Secretary, and Mr. R. Stevenson, the Secretary, at Edinburgh, are recommended as likely to secure the uniformity in making observations on the Force of the Wind.

Many causes conspire to produce anomalies in the readings, arising partly from the defective nature of the instruments used, and partly from the defective nature of the observations.

The Rain Gauge should not be placed on a slope or terrace, but on a level ground, in an open situation, as the Observer has to ascertain the exact position of the gauge, and to secure it from any cause that may prevent it from securing its full effect. As it is often difficult to obtain a position as free and unobstructed by surrounding objects as is desirable, the rain gauge should be taken to other places at some distance from shrubs, trees, buildings, or other obstructions, at least as many feet from their base as they are in height. The more important directions, towards which it is most desirable to have a free exposure, are, in the order of their importance, S.W., N.E., S.E., S., and W. The rim of the gauge must be perfectly level, and so close to the ground that it may be blown over in all weathers, and be as a height of not less than 10 feet. The gauge should be furnished with a float, and the float should be secured against the possibility of being fixed.

with a measuring rod attached to a float, the rod out to the fixed point, and the float rise 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 Returns of the previous day. If the Gauge is read once a month, the reading to be entered at the first of the month, and this amount subtracted from the previous month's total, the following coefficient— $\frac{1}{30}$ —Snow-fall may be taken as the coefficient— $\frac{1}{30}$ —Snow-fall may be taken as the

under the following conditions: (1) when a snow shower occurs, it should be noted in the Remarks column; (2) the depth of the snow must be measured in some open place where no drift is observed and registered in addition to, as a check upon, the indications of the Rain Gauge. For wind, rain, and snow, as indicated in every column, the Observer cannot be too careful to register observations only; and nothing that partakes of the nature of deduction or inference.

Conventional signs for the nomenclature of clouds will be found in the Appendix on the other side. The amount of Cloud ought to be estimated from the greater or less extension of clouds.

the sky overhead ( $\infty$ ), within the range of 30 to 100 miles, and to be able to observe the clouds from the ground or less observation than is possible from the air. The clouds are observed obliquely and not being able to judge of their amount we ought not to take them into account in the Clouds' column, though their appearance and changes may be noted among the Remarks. The amount of Cloud is entered from a scale of 0 to 10; thus, when the sky overhead is free from Clouds it is entered 0, when half-covered by Clouds 5, wholly covered, 10, and so on.

Observations of the Clouds are made at 9 a.m. and at sunset, 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 V denoting 1 Direction,

6, S. W. will indicate that the upper strata of Clouds travel with  
2. W. extreme velocity from S.W., and those in the lower regions from  
W., with one-third the speed of the former. Again, in the second  
4. st. Cloud column, an entry of  $\frac{2}{9}$  will indicate that the higher  
regions are covered to the amount of  $\frac{2}{9}$  tenths with stratus Clouds ;  
and that the sky is further obscured to the extent of 2-tenths by  
lower Clouds of the cumulo stratus kind.

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

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

column.

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

A knowledge of the Temperature of the Sea is not only in itself, but in its relations to that of our climate, a most important branch of Meteorology. The Council therefore recommend that the Temperature of the Sea be carefully taken by a properly constructed apparatus, now being used, at the ends of the coast, and at points to which it is impracticable, from the ends of rivers and creeks to the coast, where it is not influenced by their flow; so as to give us information as possible by entering by their mouth along the coast, and thus acquiring the Temperature of its head, either very gradually by the sun or cooled by nocturnal radiation. At or near the time of high

in cases where the observations cannot be taken daily. An observation may be made on the 5th, 15th, and 25th of each month. When convenient, extra Sea Observations might be taken for other days of the month. The observations should be taken at low water, and greater depths, noting always the Temperatures of the Air and the Water, and the direction and force of the wind, and the direction and force of the current. It is also very desirable that observations on the bottom should be made at least once a month. The Observations of Olmstead and Minima by Thermometers continuously immersed in the water, should be instituted at points along the coast, by the method proposed by Mr. Stevenson, and already commenced at Peterhead and Liverpool. The Temperature of the water at the bottom of Wells ought to be taken when practicable, to be taken, both the depth of the water and of the water being noted. Mention what Trawl-Papers are used, Schönlank's or Moffat's, section number Box, and the indications registered at 9 A.M. The direction and force of the wind, and the direction and force of the current, should be noted in connection with the force and direction of the wind at the time of the observation, in the following manner:—this 3<sup>rd</sup>, as an Ozone entered in the schedule will indicate that the Ozone Paper is dried 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 use of the electrometer is, in truth, 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 to the very advantage of, and a list of such are in general use is given at the foot of the column. Besides special and extraordinary Observations.

Atmospheric Electricity.	Remarks.
	Those for which no rules can be given nor hours assigned.

valent Diseases, differences in character, colour, locality, and direction of wind, etc. Remarks ought to be made on the occurrence of Meteors, comets, aurorae boreales, and fluctuations in the temperature between the Lower and Upper Strata of clouds, the Colour of the sky, &c. Remarks ought to be deposited on the occurrences of more Boreas, remarkable depressions, elevations, and fluctuations in the Barometrical Thunder-Storms, and remarkable falls of Snow Hail, Rain, or Brim, the Hour of Storms of Wind commencing, attaining its maximum, and ceasing, as well as the state of the Sky, the Direction of the prevailing Winds, and the quantity of the Snow-fall in winter should be recorded.

The use of abbreviations, the state of the weather at 9 A.M. and at 3 P.M. should be registered, either in two columns, otherwise unnecessary, 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 connected with art of considerable importance in connection with the Periodic Re-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 as specified in particular species of fruit-bearing trees, and to selected pieces of arable land.

The Council recommend Observers, 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 is more particularly directed.

Print Out  
or Reload.

S.

(By Order)

A. E.

Exempted, December 1888.

[illegible]

Leaf.	Divided of	unimbricated variety.	CROSS	Small Plan
		Barley,		
		Bere or Hys,		
		Oats,		
		Wheat,		
		Beans,		
		Pease,		
		Potatoes,		
		Turnips,		
		Rye Grass,		

OBSERVATIONS IN CONNECTION					
FOREST TREES.	In flower.	Leaf buds first appear.	in		
Alder,	.	.	.	.	.
Asp,	.	.	.	.	.
Beech,	.	.	.	.	.
Birch,	.	.	.	.	.
Elm,	.	.	.	.	.
Larch,	.	.	.	.	.
lime,	.	.	.	.	.
Oak,	.	.	.	.	.
Sycamore or Plane,	.	.	.	.	.

Glen Lander  
Sept. 1890

*Scottish Meteorological Society.*

EDINBURGH.

BOOK POST.

Have the goodness also to state, or mention, if you may be able to connect them to one of the following groups of fruits, and, whether any, diseases, etc., whether prevalent, or in perfection, and the Agricultural condition of the district generally.

[illegible]

OBSERVATIONS IN CONNECTION WITH THE PERIODICAL RETURN OF THE SEASONS.

EDINBURGH, *December 1888.*

(By Order) A. B.



## SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *The 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 *October* 18*90*.

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. Sun rays, Grass.		9 h. A.M.		9 h. P.M.			9 h. A.M.		9 h. P.M.		9 A.M.		P.M.															
		Barometer.	Attached Thermometer.	Barometer.	Attached Thermometer.	Max.	Min.	Max.	Min.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.		Direction.	Force.	Direction.	Force.	Velocity (0-6) and Direction.	Amount (0-10), and Species.	Velocity (0-6) and Direction.	Amount (0-10), and Species.														
		* No.	No.	No.	No.	No.	No.	No.	No.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.		No. of hours in which it fell.	No.	No.	No.	No.	9 h. A.M.	No.	No.														
		inches.	°	inches.	°	°	°	°	°	°	°	°	°		°	°	°	°	°	°	°	°						°								
	1	29.16	51	29.62	50	50	32			47	46	42	38	0.70	H	3	N	4		H	9		10	2									1			
	2	30.02	48	29.79	55	48	29			43	41	42	40		H	1	N	4		H	1			2									2			
	3	29.60	57	29.62	59	61	34			61	60	53	50		H	4	H	2			10		10											3		
	4	29.79	56	29.74	60	64	34			56	55	53	51		H	1	H	2		NE	9		E	2	3									4		
	5	29.70	62	29.54	60	63	43			60	58	55	53		H	1	H	3		NE	7			10	8									5		
	6	29.62	57	29.69	55	67	36			51	50	50	48		H	3	H	2		SE				10	8									6		
	7	29.74	52	30.01	55	57	35			48	47	47	45		H	1	H	1			10	SE	6	7										7		
	8	30.29	51	30.20	48	54	27			45	44	41	40		S	1	H	1		NW	7													8		
	9	30.08	53	29.96	58	58	29			58	57	57	55		SH	1	H	2		NW	6	NE	6	7										9		
	10	29.96	62	29.89	60	65	45			61	60	57	55		SH	2	H	1		SH	8													10		
	11	29.95	63	30.01	61	67	42			59	55	57	55		H	1	H	1		NW	7			10	8									11		
	12	30.04	62	30.01	56	65	45			59	57	53	49		H	2	H	1		NE	9														12	
	13	30.04	53	29.95	60	66	29			56	55	47	45		H	1	H	1		NW	7			10	8										13	
	14	29.81	58	29.58	58	63	34			54	53	53	51		S	2	H	2		NW	6														14	
	15	29.24	54	29.06	52	61	34			44	43	43	42		H	2	H	5			10		10	6											15	
	16	29.21	50	29.99	49	49	39			42	41	43	40	0.30	H	3	NW	4		NW	8			10	5										16	
	17	29.38	49	29.81	48	46	30			44	42	40	37	0.7	NW	4	NW	3			10														17	
	18	29.99	51	30.10	47	49	33			43	40	41	38		N	3	N	2			10		10												18	
	19	30.12	49	30.14	52	47	32			43	41	40	38	0.20	N	1	NE	1			10		10	4											19	
	20	30.01	50	30.05	52	46	31			41	40	41	39	0.15	E	1	N	1			10		10	2											20	
	21	30.12	51	30.18	52	45	32			44	43	41	39	0.45	N	1	N	1			10		10												21	
	22	30.21	53	30.26	53	59	30			53	50	50	47		N	2	N	1			10		10												22	
	23	30.19	53	29.94	54	57	31			54	51	53	51		S	1	S	1			10														23	
	24	29.74	56	29.66	53	57	44			54	50	41	39		H	1	H	2			10		10	5											24	
	25	29.53	50	29.29	49	60	29			40	38	31	29		H	1	H	1		NW	9			10	2										25	
	26	29.52	44	29.51	47	44	19			33	30	31	30	0.18	H	1	N	2			10														26	
	27	29.72	45	29.81	45	41	20			30	29	30	28	0.31	N	2	NW	1		NE	6			10	2										27	
	28	29.85	43	29.41	51	56	20			36	35	32	49	0.18	H	1	H	5			10														28	
	29	29.28	55	29.51	52	56	27			56	55	40	39		H	4	H	4			10		10	2											29	
	30	29.77	48	29.64	49	60	24			38	36	42	39		H	1	H	2		NE	9														30	
	31																																			31
Sums.		13 12 11		14 12 13		14 13				12 10 7	15	23				53		61																		
Means.		29.783	52.9	29.799	53.3	53.7	32.5			48.4	46.7	45.5	43.5			177		2.03																		
+ 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  $\ddagger$  for Temp. (Col. 2), = \_\_\_\_\_"Corrected Mean" of Barometer at 9 P.M., minus the Correction  $\ddagger$  for Temp. (Col. 4), = \_\_\_\_\_

Mean at Station, corrected, and at 32°, = \_\_\_\_\_

Correction for height, feet above Mean Sea-level, = \_\_\_\_\_

Mean, reduced to 32°, and Sea-level, = \_\_\_\_\_

Highest Reading, corrected for Index error, on the 8 th, = *30.290*Lowest Do. Do., on the 15 th, = *29.060*Difference, or Monthly Range, = *1.230*S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 6 th, = *67.0*Lowest in Month, corrected for Index errors, on the 26 th, = *27.0*Difference, or Monthly Range, = *40.0*"Corrected Mean" of all the Highest, (Col. 5), = *55.7*"Corrected Mean" of all the Lowest, (Col. 6), = *40.5*Difference, or Mean Daily Range, = *15.2*\*\* Calculated Mean Temperature of Month, = *48.1*

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), = *47.0*Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = *45.6*Computed Temperature of Dew-Point, = *44.1*Do. Elastic Force of Vapour, = *2.88*

Do. Weight of Vapour in a Cubic Foot of Air, = \_\_\_\_\_

Relative Humidity (Saturation = 100), = *90*RAIN fell on 9 Days; Amount in Inches, = *2.19*

WIND.		SUMMARY.					
Direction.	N	NE	E	SE	S	SW	W
A.M.	5	1			3	2	18
P.M.	7	1			1	18	3
Mean.	6	1	0	2	1	18	2

(Signed) *R. Warburton Glen Tana*Observations made and  
Return verified by







# SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *Forest of Glen Tanna, Albany* 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 *November* 1890.

The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				Rain.	WIND.				CLOUDS.				THERMOMETERS under Ground.				SEA.	OZONE.	GENERAL REMARKS.  As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc.  Mention the hour at which Storms, including Thunder and Lightning, began and ended.	Days of Month.		
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		Dry No.		Wet No.			9 h. A.M.		9 h. P.M.		9 A.M.		P.M.		9 h. A.M.									
		Barometer.	Attached Ther- mometer	Barometer.	Attached Ther- mometer	Max.	Min.	Max. in Sun's rays	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.		Direction.	Force	Direction.	Force	Velocity (0-10), and Direc- tion.	Amount (0-10), and Direc- tion.	Velocity (0-10), and Direc- tion.	Amount (0-10), and Direc- tion.	No. 3 inches.	No. 12 inches.	No. 22 inches.							
		* No.		No.		No.	No.	No.	No.																							
		inches.	°	inches.	°	°	°	°	°	°	°	°	°		°																	
	1	29.52	53	29.27	52	47	34			45	44	47	45		H	1	H	3	10		10	5								1		
	2	29.67	53	29.09	50	53	34			50	49	38	36	0.15	H	1	H	4	10		10	3								2		
	3	29.38	47	29.13	49	52	25			38	37	37	35		H	1	H	3	10		10	2								3		
	4	29.02	46	29.26	49	43	20			32	31	45	43		SH	2	N	2			10	1								4		
	5	29.49	51	29.61	49	51	26			42	41	45	43	0.10	N	2	H	2	10		10	2								5		
	6	29.52	46	28.79	50	35	27			43	42	41	40	0.80	SW	1	H	3	10		10									6		
	7	29.91	49	29.36	42	45	31			44	43	30	29	1.20	H	3	H	2	10												7	
	8	29.23	45	29.14	45	44	17			44	42	41	40	0.18	S	3	H	2	10		10	1									8	
	9	29.27	47	29.34	50	46	29			38	37	36	34	0.65	S	1	S	3	10		10										9	
	10	29.55	48	29.49	50	45	23			34	33	41	39		S	1	S	3	10		10										10	
	11	29.34	48	29.10	49	45	34			42	40	39	37	0.30	S	3	S	2	10		10										11	
	12	29.52	48	29.36	52	43	27			38	37	45	43	0.34	S	1	S	4	10		10										12	
	13	29.51	49	29.75	50	47	29			38	37	43	42		H	1	S	2	SE 9		10										13	
	14	29.2	49	29.50	49	51	26			43	42	44	42	0.32	S	1	S	3	10		10										14	
	15	29.86	51	30.01	47	46	29			44	43	39	37		H	2	S	2			10	2									15	
	16	30.03	45	29.94	47	50	18			33	32	30	28		S	1	SH	2	SH 9		10	2									16	
	17	30.14	43	29.98	48	45	21			31	30	43	41		S	1	H	1	S 2		10										17	
	18	30.08	46	30.10	49	49	22			41	40	49	47		H	1	S	2	NE 4		10	3									18	
	19	30.01	52	30.09	50	56	27			55	51	47	43	0.10	OS	1	S	2	NW 4												19	
	20	30.09	52	29.89	55	59	33			48	44	50	47	0.14	H	2	H	2	10	SE 7		4									20	
	21	29.70	57	29.69	49	55	32			52	49	37	35		H	2	H	3	10			2									21	
	22	29.64	47	29.22	55	54	29			42	39	37	35		H	1	H	2	10	SH 6		1									22	
	23	29.24	53	29.10	52	43	26			36	33	39	37		NW	2	H	3	10			0									23	
	24	29.28	48	29.46	48	53	32			43	40	39	37		H	2	NE 2		10		10	3									24	
	25	29.84	47	30.12	43	39	26			43	40	39	37		E	1	N	1	10		10	1									25	
	26	30.20	41	30.21	37	37	16			36	35	32	30	0.30	N	1	H	1	SE 6			3									26	
	27	30.15	38	30.14	35	37	08			26	25	25	23		SE	1	N	1	NW 5			2									27	
	28	30.15	36	30.12	35	34	6			20	19	20	18		SE	1	H	1	SH 9			3									28	
	29	30.07	37	29.89	42	35	8			23	22	18	17		SW	1	H	4	NE 9		10	1									29	
	30	29.73	45	29.67	50	44	9			19	18	41	39		H	2	S	3	10		10										30	
	31									44	40	49	47																			31
Sums.		1894	212	1807	228	193	701			263	215	257	199	4.58		44		70														
Means.		29.63	147.1	29.60	247.6	46.4	22.6			38.6	37.2	38.6	36.6			1.47		2.03														
+ 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.	" 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. ha.	" solar halo.		
h. d.	" heavy dew.	sq.	" squall.		
h. l.	" 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

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.	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.
h.	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	1-3	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), = \_\_\_\_\_  
 "Corrected Mean" of Barometer at 9 P.M., minus the Correction †† = \_\_\_\_\_  
 for Temp. (Col. 4), = \_\_\_\_\_  
 Mean at Station, corrected, and at 32°, = \_\_\_\_\_  
 Correction for height, \_\_\_\_\_ feet above Mean Sea-level, = \_\_\_\_\_  
 Mean, reduced to 32°, and Sea-level, = \_\_\_\_\_  
 Highest Reading, corrected for Index error, on the 26 th, = 30.210  
 Lowest Do. Do., on the 2 th, = 28.670  
 Difference, or Monthly Range, = 1.540

\* 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 Journal 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 20 th, = 59.0  
 Lowest in Month, corrected for Index errors, on the 3 th, = 22.6  
 Difference, or Monthly Range, = 60.0  
 "Corrected Mean" of all the Highest, (Col. 5), = 46.4  
 "Corrected Mean" of all the Lowest, (Col. 6), = 30.6  
 Difference, or Mean Daily Range, = 15.8  
 \*\* Calculated Mean Temperature of Month, = 38.2  
 S-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 7 th, = \_\_\_\_\_  
 "Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, = \_\_\_\_\_  
 Lowest at Night, Black Bulb (corrected for Index errors), on the 1 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), = 38.7  
 Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 36.9  
 †† Computed Temperature of Dew-Point, = 34.5  
 † Do. Elastic Force of Vapour, = 2.00  
 † Do. Weight of Vapour in a Cubic Foot of Air, = \_\_\_\_\_  
 † Relative Humidity (Saturation = 100), = 86  
 RAIN fell on 12 Days; Amount in Inches, = 4.58

WIND. SUMMARY.											
Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.
A.M.	2		1	2	9	3	12	1		1.47	
P.M.	3	1			10	1	15			2.03	
Mean.	2	1	1	1	9	2	13	1	0	1.75	3.06

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

(Signed) *Robert Warburton Glen Tanna*







## SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *Glen Tana Abayne*, County of *Aberdeen*, 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 *December* 18*90*.

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.			9 h. A.M.		9 h. P.M.		0 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.		No. of hours in which it fell.	Amount in inches.	Direction.	Force.	Direction.	Force.	Readings of the H. Cup Anemometer. No. —	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.	inches.	°	inches.	°	°	°	°	°	°	°	°	°	No.	No.	Direction.	Force.	Direction.	Force.	9 h. A.M.	Velocity (0—6) and Direction.	Amount (0—10), and Species.	Velocity (0—6) and Direction.	Amount (0—10), and Species.	No.	No.	No.			
		inches.	°	inches.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
	1	29.67	56	29.65	57	55	35			53	50	43	41		SH	2	S	2			10		10	2							1
	2	29.65	54	29.64	52	56	34			46	45	43	41	0.35	S	1	H	2			10		10	—							2
	3	29.75	48	29.95	48	49	26			35	34	35	33	0.25	N	2	N	3			10		10	—							3
	4	30.01	46	29.99	46	34	23			36	34	38	37	0.018	N	2	SE	2			10		10	—							4
	5	29.99	45	30.02	46	38	24			37	35	35	33		SE	1	S	2			10		10	—							5
	6	30.11	44	30.17	46	38	23			33	32	35	33		NE	1	N	2			10		10	—							6
	7	30.16	43	30.08	48	37	20			32	30	35	33	0.50	SE	1	S	1			10		10	—							7
	8	30.05	46	29.99	45	34	22			33	32	40	38	0.05	S	1	S	1			10		10	—							8
	9	29.98	44	30.01	46	39	23			38	36	33	32		SE	1	S	2			10		10	—							9
	10	30.08	44	30.01	47	40	21			30	29	40	38		SH	1	S	2			10		10	—							10
	11	29.96	46	29.95	48	40	21			38	37	33	31		S	1	S	1			10		10	—							11
	12	30.01	45	29.99	40	39	19			29	27	30	27		SE	1	E	2			10		10	2							12
	13	29.91	37	29.82	36	37	12			23	22	23	22		S	1	H	2			10		10	—							13
	14	29.83	39	29.73	44	33	11			24	24	36	35		SH	1	SW	3			10		10	—							14
	15	29.67	46	29.88	46	42	14			40	39	35	33		NW	1	N	1			10		10	2							15
	16	29.88	45	29.99	44	43	29			33	32	36	34		SH	2	S	1			10		10	—							16
	17	29.90	46	29.87	49	41	28			32	31	34	32		SE	1	S	2			10		10	2							17
	18	29.70	47	29.38	44	37	23			33	31	28	27		S	1	S	2			10		10	1							18
	19	29.25	42	29.41	41	33	18			27	26	29	28		S	1	S	2			10		10	2							19
	20	29.60	42	29.91	41	36	18			34	33	30	28		SH	1	SW	2	NW	9			—	3							20
	21	30.14	39	30.18	35	40	11			22	21	21	20		SH	1	S	1			—		—	3							21
	22	30.04	37	29.79	40	36	10			27	26	35	33		SE	1	S	2			—		—	2							22
	23	29.68	42	29.99	44	45	20			39	37	32	30		SH	2	S	1			10		10	—							23
	24	30.15	43	30.13	34	45	16			33	31	23	22		H	1	N	1			—		—	3							24
	25	29.94	40	30.11	39	40	14			39	36	32	30		N	1	NW	1			—		—	1							25
	26	30.37	42	30.38	42	39	13			26	25	31	30		N	1	N	1	NE	4			—	1							26
	27	30.39	41	30.29	42	36	19			32	31	32	31	0.35	N	1	N	1			10		10	—							27
	28	30.26	43	30.23	42	34	22			33	32	30	30		NE	1	N	1			10		10	—							28
	29	30.55	43	30.41	41	33	20			32	31	30	29	0.45	N	1	N	1			10		10	—							29
	30	30.57	42	30.49	42	33	20			33	32	32	31		SE	1	SE	1			10		10	—							30
	31	30.39	43	30.24	43	33	20			33	32	34	33		SE	1	N	1			10		10	—							31
Sums.		3057	120	3066	118	295	09			105	63	93	35	1.95		36	49														
Means.		29.88	43.9	29.89	43.5	39.5	20.3			33.4	32.0	33.0	31.1	?		1.16	1.58														
+ 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.	" microns.	
ci-cu.	" cirro-cumulus.	u.	" 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.	
h.	" 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	3-	Fresh breeze	5	Blowing a gale
1-	Light air	3-	Very fresh	6	Violent gale

Fall of Snow 2" deep  
Fall of Snow 3" deep

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.	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.	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. lu.	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  $\ddagger$  for Temp. (Col. 2), = \_\_\_\_\_

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

Mean at Station, corrected, and at 32', = \_\_\_\_\_

Correction for height, \_\_\_\_\_ feet above Mean Sea-Level, = \_\_\_\_\_

Mean, reduced to 32', and Sea-level, = \_\_\_\_\_

Highest Reading, corrected for Index error, on the 29 th, = 30.550

Lowest Do. Do., on the 19 th, = 29.250

Difference, or Monthly Range, = 1.300

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 2 th, = 56.0

Lowest in Month, corrected for Index errors, on the 22 th, = 18.0

Difference, or Monthly Range, = 38.0

"Corrected Mean" of all the Highest, (Col. 5), = 39.5

"Corrected Mean" of all the Lowest, (Col. 6), = 28.3

Difference, or Mean Daily Range, = 11.2

\*\* Calculated Mean Temperature of Month, = 33.9

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

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

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

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

Difference of above means or range ("exposed"), = \_\_\_\_\_

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 33.2

Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 31.6

†† Computed Temperature of Dew-Point, = 27.4

†† Do. Elastic Force of Vapour, = .150

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

†† Relative Humidity (Saturation = 100), = 77

RAIN fell on > Days; Amount in Inches, = 1.96

WIND.		SUMMARY.			
Direction.		N	NE	E	SE
A.M.		5	2	8	6
P.M.		9	1	2	4
Mean.		7	1	5	10

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Observations made and  
Return verified by(Signed) *Robert Warburton Glen Tana Abayne*



