

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at La Grange, Livingston, County of Shrewsbury, in Lat. _____, Long. _____, Distance from Sea 17 miles.
Height of Cistern of the Barometer above Mean Sea-level 280 feet, above Ground _____ feet. During the MONTH of January
The Hours of Observation are of Greenwich Time.

[illegible]

BAROMETER, "corrected Mean" at 9 A.M., <i>minus</i> the Correction ++)	=	29.757
for Temp. (Col. 2), = 29.793... - 0.36...}		
Corrected Mean" of Barometer at 9 P.M., <i>minus</i> the Correction ++)	=	29.769
for Temp. (Col. 4), = 29.808... - 0.39...}		
Mean at Station, corrected, and at 32",	=	29.763
		.315
Correction for height, feet above Mean Sea-level,.....	=	
Mean, reduced to 32", and Sea-level,	=	30.078
Highest Reading, corrected for Index error, on the 19 th ,.....	=	30.464
Lowest Do. Do., on the 2 th ,.....	=	28.463
Difference, or Monthly Range,	=	2.001

S.-R. THERMOMETER , (in shade, etc.), Highest in Month , (corrected for Index Errors), on the 16 th,	=	<u>54.0</u>
Lowest in Month , corrected for Index errors, on the 11 th,	=	<u>22.0</u>
Difference, or Monthly Range ,	=	<u>32.0</u>
"Corrected Mean " of all the Highest , (Col. 5),	=	<u>44.3</u>
"Corrected Mean " of all the Lowest , (Col. 6),	=	<u>31.7</u>
Difference, or Mean Daily Range ,	=	<u>12.6</u>
** Calculated Mean Temperature of Month,	=	<u>38.0</u>
 S.-R. THERMOMETER, Black Bulb in Sun, Highest , (corrected for Index Errors), on the th,		
"Corrected Mean ," (Col. 7), of Black Bulb, Max. in Sun ,	=	
Lowest at Night , Black Bulb, (corrected for Index errors), on the th, ...	=	
"Corrected Mean ," (Col. 8), of Black Bulb, Min. on grass,	=	
Difference of above Means or Range ("exposed"),	=	

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb , (Cols. 9 and 11),	=	38.3
Mean (corrected) A.M. and P.M. Reading of Wet Bulb , (Cols. 10 and 12),	=	36.3
## Computed Temperature of Dew-Point ,	=	33.6
## Do. Elastic Force of Vapour ,	=	.193
## Do. Weight of Vapour in a Cubic Foot of Air , ...	=	
## Relative Humidity , (Saturation = 100),	=	83
RAIN fell on γ Days ; Amount in Inches ,	=	.086 in

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				2	4	2	8				
P.M.	3	1			3	4	3	4				
Mean.	3	0	0	0	2	4	2	8				

Observations made and
Return verified by

(Signed) Wm. H. C. Donald

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *The General Assembly Hall, Glasgow*, County of *Argyll and Bute*, in Lat. _____, Long. _____, Distance from Sea *17* miles.
Height of Cistern of the Barometer above Mean Sea-level *280* feet, above Ground *4* feet. During the MONTH of *February* 188*2*.
The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER. No. —				WIND.				RAIN.		CLOUDS.				THERMOMETERS under Ground.				SEA.		OZONE.		GENERAL REMARKS.		Days of Month.			
		9 h. A.M.		9 h. P.M.		Protected in Shade, at foot above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.		9 h. A.M.		9 h. P.M.		Readings of the H. Cup Anemometer.		No. of hours in which it fell.		9 A.M.		P.M.		9 h. A.M.		9 h. P.M.		As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc.							
		Barometer.	Attach- ed Ther- mometer	Barometer.	Attach- ed Ther- mometer	Max.	Min.	Max. in Sun's rays	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	Direction.	Force.	Direction.	Force.	No.	Amount in inches.	Velocity (0—10), and Direction.	Amount (0—10), and Species.	Velocity (0—10), and Direction.	Amount (0—10), and Species.	No.	Amount in inches.	Velocity (0—10), and Direction.	Amount (0—10), and Species.	No.	Amount in inches.	Velocity (0—10), and Direction.	Amount (0—10), and Species.	Mention the hour at which Storms, including Thunder and Lightning, began and ended.					
		* No.		No.		No.	No.	No.	No.																												
		inches.	°	inches.	°	°	°	°	°	°	°	°																									
	1	30.164	42	30.016	41	34	35			40	39	38	36	SW		SW				0.10	mi	mi												Generally overcast and fine	1		
	2	29.911	43	30.119	40	49	29			41	39	29	29	SW		SW				—	mi	mi											Slightly overcast till 1 P.M.	2			
	3	29.999	37	29.982	35	48	25			38	36	28	28	SW		SW				—	Ca	Ca											Very fine throughout	3			
	4	29.990	40	29.945	44	51	23			39	38	42	41	S		S				0.04	Ca	Ca											Slightly overcast till 1 P.M.	4			
	5	29.956	45	29.958	44	50	35			41	40	34	33	S		SW				—	mi	Ca											Very fine	5			
	6	30.119	40	30.156	45	50	31			36	35	41	40	SW		SW				—	mi	mi											Very fine	6			
	7	30.188	33	30.156	44	42	26			28	28	35	34	SW		SW				—	mi	mi											Overcast air Cal	7			
	8	30.182	35	29.982	35	45	26			33	32	28	26	SW		SW				—	mi	mi												Overcast air Cal	8		
	9	29.830	36	29.656	45	45	34			38	32	44	43	SW		SW				—	Ca	Ca												Partly overcast till 1 P.M.	9		
	10	29.521	49	29.492	50	50	39			37	35	44	43	S		S				—	mi	mi												Partly overcast till 1 P.M.	10		
	11	29.401	47	29.294	50	49	40			45	43	45	43	SW		SW				—	mi	mi												Partly overcast till 1 P.M.	11		
	12	29.500	45	29.357	45	50	40			48	41	42	40	W		W				0.07	Ca	Ca												Partly overcast till 1 P.M.	12		
	13	28.530	51	29.137	45	52	39			49	46	38	36	SW		W				—	mi	Ca												Partly overcast till 1 P.M.	13		
	14	29.317	41	29.317	41	45	34			38	36	35	33	W		W				—	Ca	Ca												Partly overcast till 1 P.M.	14		
	15	29.480	36	29.791	32	39	23			34	32	24	23	SW		SW				—	Ca	Ca												Partly overcast till 1 P.M.	15		
	16	29.472	39	29.410	45	50	32			38	36	40	39	SW		SW				—	Ca	Ca												Partly overcast till 1 P.M.	16		
	17	29.544	43	29.554	46	50	36			40	37	45	43	SW		SW				—	Ca	Ca												Partly overcast till 1 P.M.	17		
	18	29.084	52	29.714	42	53	33			52	47	35	33	SW		SW				0.15	Ca	Ca												Partly overcast till 1 P.M.	18		
	19	30.111	43	30.256	45	50	35			39	37	40	37	W		W				—	Ca	Ca												Partly overcast till 1 P.M.	19		
	20	30.098	48	30.087	52	56	39			47	43	49	47	SW		SW				—	Ca	Ca												Partly overcast till 1 P.M.	20		
	21	30.240	51	30.237	52	59	48			48	47	47	46	SW		SW				—	Ca	Ca												Partly overcast till 1 P.M.	21		
	22	30.150	48	29.942	50	56	45			45	42	45	43	SW		SW				—	Ca	Ca												Partly overcast till 1 P.M.	22		
	23	29.850	41	29.791	41	56	40			46	41	41	39	W		SW				—	Ca	Ca												Partly overcast till 1 P.M.	23		
	24	29.700	43	29.506	45	53	29			42	40	39	38	W		SW				—	Ca	Ca												Partly overcast till 1 P.M.	24		
	25	29.137	47	28.640	52	49	35			44	43	48	47	S		SW				0.10	mi	mi												Partly overcast till 1 P.M.	25		
	26	28.495	50	28.658	45	55	36			48	46	38	37	SW		SW				0.11	mi	mi												Partly overcast till 1 P.M.	26		
	27	28.894	40	29.253	35	40	18			35	33	29	29	SW		SW				0.00	mi	Ca												Partly overcast till 1 P.M.	27		
	28	29.283	35	29.070	40	38	22			34	32	35	34	SW		SW				0.06	mi	mi												Partly overcast till 1 P.M.	28		
	29																																			Partly overcast till 1 P.M.	29
	30																																			Partly overcast till 1 P.M.	30
	31																																			Partly overcast till 1 P.M.	31
	Sums.	13 2 8		13 14 12	8	11	13			14	12	14	14							2															NOTATION USED IN GENERAL REMARKS.		
	Means.	29.76	40	29.76	40	48	32			40	38	39	37																						a. denotes aurora.		
	† Total Corrections for Instrumental Errors.	+0.02		+0.50																															m. denotes meteor.		
	‡ Corrections for Diurnal Range.																																		ci. cirrus.		
	“Corrected Means.”																																		ci.-cu. cirro-cumulus.		
	No. of	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		ci.-s. cirro-stratus.			
																																			cu. cumulus.		
																																			cu.-s. cumulo-stratus.		
																																			d. dew.		
																																			f. fog.		
																																			fr. frost.		
																																			h.-fr. hoar-frost.		
																																			h. haze.		
																																			h. d. heavy dew.		
																																			h. d. hail.		
																																			l. lightning.		
																																			l. cl. light clouds.		
																																			li. sh. light showers.		
																										</											

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at The Garrison, County of Aberdeen, in Lat. _____, Long. _____, Distance from Sea 17 miles.Height of Cistern of the Barometer above Mean Sea-level 280 feet, above Ground 4 feet.During the MONTH of March 1882.

The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER. No. —				WIND.				RAIN.		CLOUDS.				THERMOMETERS under Ground.			SEA.	OZONE.	GENERAL REMARKS.		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.		No. of hours in which it fell.	Amount in inches. No.	9 A.M.		P.M.		9 h. A.M.									
		Barometer. * No.	Attached Thermometer	Barometer. No.	Attached Thermometer	Max. No.	Min. No.	Max. in Sun's rays No.	Min. on Grass. No.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	Direction.	Force	Direction.	Force			Readings of the H. Cup Anemometer. No.	9 h. A.M.	Velocity (0—10), and Direction.	Amount (0—10), and Species.	Velocity (0—10), and Direction.	Amount (0—10), and Species.	No. 1 inches.						12 inches.	No. 22 inches.
		inches.	°	inches.	°	°	°	°	°	°	°	°																					
	1	28.741	38	28.806	38	37	31			35	33	33	32	NE		NE			1.90		Ni	Ni										1	
	2	28.788	43	28.907	41	40	31			40	34	34	38	NE		NE			0.30		Ni	Ni										2	
	3	29.710	44	29.283	39	41	30			42	40	37	31	SE		SE					Ni	Ca										3	
	4	28.967	41	28.860	44	44	24			40	38	40	37	SE		SE					Ca	Ca										4	
	5	28.838	45	28.896	49	53	38			43	41	47	43	SE		SE			0.06		Ni	Ni										5	
	6	29.070	40	29.683	35	47	26			35	32	30	28	S		W			0.09		Ca	Ca										6	
	7	29.435	38	29.184	54	58	27			35	32	54	50	S		W					Ni	Ca										7	
	8	29.261	53	29.756	49	59	39			53	48	38	37	NE		NE					Ca	Ca										8	
	9	29.448	48	29.441	51	58	35			47	46	47	44	SE		SE					Ni	Ca										9	
	10	29.414	50	29.593	50	58	34			45	42	39	36	SE		NE			0.05		Ca	Ni										10	
	11	29.856	43	29.861	47	53	33			42	38	48	45	SE		SE					Ca	Ca										11	
	12	29.904	46	29.830	55	55	35			45	42	47	44	SE		SE					Ca	Ca										12	
	13	29.837	53	29.888	52	58	42			52	49	50	46	SE		SE					Ca	Ca										13	
	14	29.828	57	29.738	52	60	42			51	47	48	45	SE		SE			0.10		Ca	Ni										14	
	15	30.076	45	29.896	49	51	32			44	39	46	43	SE		W					Ca	Ni										15	
	16	29.885	53	29.899	54	65	46			52	48	50	47	SE		W					Ca	Ni										16	
	17	30.092	50	30.000	59	61	24			48	46	47	40	SE		SE					Ca	Ca										17	
	18	29.829	46	29.606	49	52	28			45	42	48	46	SE		W					Ca	Ca										18	
	19	29.606	49	29.262	47	53	25			47	44	48	44	SE		SE					Ca	Ni										19	
	20	29.132	47	29.044	45	52	24			44	42	34	28	SE		NW					Ca	Ca										20	
	21	29.059	54	29.177	34	48	28			32	30	33	31	SE		N			0.14		Ni	Ca										21	
	22	29.176	40	29.872	39	42	25			32	30	33	31	NW		NW					Ca	Ca										22	
	23	29.514	42	29.402	46	40	26			33	32	29	28	SE		SE					Ca	Ca										23	
	24	28.803	44	28.965	44	54	33			42	40	43	43	SE		NW					Ca	Ca										24	
	25	28.962	43	28.962	43	52	32			46	44	34	35	SE		NW					Ca	Ca										25	
	26	29.002	40	29.164	42	48	26			42	38	35	33	NW		NW					Ca	Ca										26	
	27	29.299	48	29.195	48	53	33			48	43	42	40	NW		NW					Ca	Ca										27	
	28	29.148	48	29.344	50	58	35			48	46	48	44	NW		NW			0.20		Ni	Ni										28	
	29	29.224	50	29.148	49	61	35			49	47	47	46	SE		SE			0.04		Ni	Ca										29	
	30	29.162	43	29.270	40	42	35			41	40	34	33	NW		NW			0.09		Ni	Ca										30	
	31	29.244	42	29.266	41	48	33			40	38	34	28	NW		SE			0.28		Ni	Ni										31	
	Sums.	911.750	1408	911.648	1407	1618	1032			1340	1232	1266	1206						3.25														
	Means.	29.412	45.4	29.408	45.4	52.1	33.3			43.2	39.8	40.2	38.9						3.25														
	† Total Corrections for Instrumental Errors.	+050		+050																													
	† Corrections for Diurnal Range.																																
	“Corrected Means.”																																
	No. of	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		

BAROMETER, “corrected Mean” at 9 A.M., minus the Correction†† = 29.385
for Temp. (Col. 2), = 29.430 - 0.045

Corrected Mean” of Barometer at 9 P.M., minus the Correction†† = 29.411
for Temp. (Col. 4), = 29.458 - 0.047

Mean at Station, corrected, and at 32°, = 29.398

Correction for height, feet above Mean Sea-level, = 309

Mean, reduced to 32°, and Sea-level, = 29.707

Highest Reading, corrected for Index error, on the th, = 30.098

Lowest Do. Do., on the th, = 28.596

Difference, or Monthly Range, = 1.496

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the th, = 65.0

Lowest in Month, corrected for Index errors, on the th, = 26.0

Difference, or Monthly Range, = 39.0

“Corrected Mean” of all the Highest, (Col. 5), = 52.1

“Corrected Mean” of all the Lowest, (Col. 6), = 32.6

Difference, or Mean Daily Range, = 19.5

** Calculated Mean Temperature of Month, = 42.4

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

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

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

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

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

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 42.2

Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 39.4

†† Computed Temperature of Dew-Point, = 36.0

†† Do. Elastic Force of Vapour, = 2.12

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

†† Relative Humidity, (Saturation = 100), = 80

RAIN fell on // Days; Amount in Inches, = 3.25

WIND.											SUMMARY.		
Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity.		
A.M.	1	1			3	2	19	5					
P.M.	1	2			2	10	5	11					
Mean.	1	1	0	3	1	5	2	8					

Observations made and
Return verified by

(Signed) George Melville Murray Gardens

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at The Gardens Ry. Road County of St. Andrew, in Lat. _____, Long. _____, Distance from Sea 14 miles.
Height of Cistern of the Barometer above Mean Sea-level 280 feet, above Ground 4 feet. During the MONTH of April 1882.
The Hours of Observation are of Greenwich Time.

[illegible]

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction \uparrow) = 29.493
for Temp. (Col. 2), = 4.532... - .039...}

Corrected Mean " of Barometer at 9 P.M., minus the Correction \uparrow) = 29.493
for Temp. (Col. 4), = 4.536... - .043...}

Mean at Station, corrected, and at 32°,..... = 29.493
..... .311

Correction for height, feet above Mean Sea-level,..... =
..... 29.804

Mean, reduced to 32°, and Sea-level,..... =
..... 8

Highest Reading, corrected for Index error, on the 2th, April = 30.319

Lowest Do. Do., on the 23th, = 28.864

Difference, or **Monthly Range,**..... = 1.455

S.-R. THERMOMETER, (In shade, etc., Highest in Month, (corrected for Index Errors), on the <u>20</u> th,.....	=	<u>62.0</u>
Lowest in Month, corrected for Index errors, on the <u>8</u> th,	=	<u>20.0</u>
Difference, or Monthly Range,	=	<u>42.0</u>
"Corrected Mean " of all the Highest, (Col. 5),	=	<u>49.1</u>
"Corrected Mean " of all the Lowest, (Col. 6),	=	<u>33.0</u>
Difference, or Mean Daily Range,	=	<u>16.1</u>
** Calculated Mean Temperature of Month,	=	<u>41.0</u>
S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the th,.....		
"Corrected Mean, " (Col. 7), of Black Bulb, Max. in Sun,	=	
Lowest at Night, Black Bulb, (corrected for Index errors), on the th, ...	=	
"Corrected Mean, " (Col. 8), of Black Bulb, Min. on grass,	=	
Difference of above Means or Range ("exposed"),	=	

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb , (Cols. 9 and 11),	=	40.8
Mean (corrected) A.M. and P.M. Reading of Wet Bulb , (Cols. 10 and 12),	=	38.7
## Computed Temperature of Dew-Point ,	=	36.0
## Do. Elastic Force of Vapour ,	=	2.12
## Do. Weight of Vapour in a Cubic Foot of Air , ...	=	
## Relative Humidity , (Saturation = 100),	=	84
RAIN fell on <u>14</u> Days; Amount in Inches,	=	3.42 3-87

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

(Signed) George William Sharp Castle

Observations made and
Return verified by

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at The Victoria Quay County of Aberdeen, in Lat. _____, Long. _____, Distance from Sea 17 miles.
Height of Cistern of the Barometer 280 feet, above Ground 4 feet. During the MONTH of May 1882.
The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER. No. —				WIND.				RAIN.		CLOUDS.				THERMOMETERS under Ground.				SEA.	OZONE.	GENERAL REMARKS.	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.		Temperature at 10 fathoms and Dausify.	9 A.M. 9 P.M.								
		Barometer. * No.	Attach- ed Ther- mometer	Barometer. No.	Attach- ed Ther- mometer	Max. No.	Min. No.	Max. in Sun/rays	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	Direc- tion.	Force	Direc- tion.	Force	Readings of the H. Cup Anemometer. No. —	No. of hours in which it fell.	Amount in inches. No.	Velocity (0—5), and Direc- tion.	Amount (0—10), and Species.	Velocity (0—5), and Direc- tion.			Amount (0—10), and Species.	No. 3 inches.					12 inches.	No. 22 inches.
1	29.202	47	28.944	50	51	26			44	42	48	42	S.E.		S.E.															1			
2	29.244	50	29.392	51	52	40			45	42	46	42	S.W.		S.W.			0.20												2			
3	29.588	53	29.448	50	53	29			52	46	48	44	S.W.		S.E.			0.23												3			
4	29.339	52	29.441	51	56	44			53	49	45	43	N.W.		N.W.															4			
5	29.648	48	29.638	52	60	29			55	47	47	46	S.W.		S.W.															5			
6	29.531	47	29.604	46	47	35			46	43	42	41	S.E.		S.E.			0.10												6			
7	29.701	47	29.856	45	47	39			48	42	40	39	S.E.		S.W.			0.04												7			
8	29.904	46	30.006	45	40	38			44	39	42	40	S.W.		S.W.			0.06												8			
9	29.862	43	29.913	50	58	28			41	39	44	43	S.E.		S.W.			0.21												9			
10	29.960	47	29.929	55	66	32			36	51	52	47	N.W.		N.W.															10			
11	29.788	52	29.441	51	54	40			61	47	46	43	S.W.		N.W.			0.26												11			
12	29.743	50	29.591	51	59	38			52	46	48	43	N.W.		N.W.															12			
13	30.042	50	30.142	50	58	39			51	46	46	43																		13			
14	30.150	47	30.148	48	53	33			46	43	42	40																		14			
15	30.103	46	30.103	46	49	38			42	40	39	37																		15			
16	30.173	47	30.145	49	63	30			52	47	44	43																		16			
17	30.142	50	30.084	53	76	28			61	52	46	44	N.W.		S.W.															17			
18	30.102	52	30.124	57	69	32			62	53	50	48	S.W.		S.W.															18			
19	29.971	56	29.990	53	67	32			60	57	45	44	S.W.		S.W.															19			
20	29.913	50	29.883	56	65	29			53	49	46	43	S		S.W.															20			
21	29.743	50	29.838	50	56	32			51	50	46	43	S.W.		S.E.															21			
22	29.727	56	29.598	50	63	37			59	56	49	45	S.W.		S.W.															22			
23	29.661	52	29.184	54	66	34			56	51	52	49	S		S.E.															23			
24	29.052	47	28.725	50	58	31			50	48	46	41	S.W.		S.W.			0.04												24			
25	29.176	53	29.120	54	63	42			50	47	52	51	S.W.		S.E.															25			
26	29.373	58	29.396	50	62	45			50	53	53	50	N.W.		N.W.															26			
27	29.540	59	29.484	57	66	49			58	53	50	49	S.W.		S.W.															27			
28	29.837	60	29.510	57	68	49			63	54	53	50	S.W.		N.W.															28			
29	30.004	57	29.665	60	72	42			58	53	54	51	S.W.		S.W.															29			
30	30.049	57	30.071	58	66	38			57	52	50	48	N.W.		N.W.															30			
31	30.084	53	30.076	56	69	42			60	58	51	48	S.W.		S.W.															31			
Sums.		931.011	1362	921.000	1300	1740	130			1627	1492	1455	1381																				
Means.		29.713	56.5	29.710	56.5	56.5	42			52.5	48.2	47.6	44.5																				
† Total Corrections for Instrumental Errors.		29.731	57.0	29.702	57.0	57.0	57.0																										
† 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†† = 29.721
for Temp. (Col. 2), = 29.721 - 0.005
Corrected Mean" of Barometer at 9 P.M., minus the Correction†† = 29.690
for Temp. (Col. 4), = 29.690 - 0.005
Mean at Station, corrected, and at 32°, = 29.705
Correction for height, feet above Mean Sea-level, = 30.8
Mean, reduced to 32°, and Sea-level, = 30.013
Highest Reading, corrected for Index error, on the 16th, = 30.173
Lowest Do. Do., on the 24th, = 28.725
Difference, or Monthly Range, = 1.448

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 7th, = 76.0 = 76.0
Lowest in Month, corrected for Index errors, on the 11th, = 58.0 = 58.0
Difference, or Monthly Range, = 18.0
"Corrected Mean" of all the Highest, (Col. 5), = 59.7 = 59.7
"Corrected Mean" of all the Lowest, (Col. 6), = 58.1 = 58.1
Difference, or Mean Daily Range, = 1.6
** Calculated Mean Temperature of Month, = 58.9 = 58.9

S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 7th, = 76.0
"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, = 76.0
Lowest at Night, Black Bulb, (corrected for Index errors), on the 11th, = 58.0
"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, = 58.0
Difference of above Means or Range ("exposed"), = 18.0

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 49.6
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 46.3
†† Computed Temperature of Dew-Point, = 42.8
†† Do. Elastic Force of Vapour, = 276
†† Do. Weight of Vapour in a Cubic Foot of Air, = 77
†† Relative Humidity, (Saturation = 100), = 77
RAIN fell on 8 Days; Amount in Inches, = 1.14

WIND.	SUMMARY.									
	Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.
A.M.						6		15	2	5
P.M.						4		2	3	8
Mean.						5		1	3	8

Observations made and
Return verified by

(Signed)

George Andrew Murray

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at El Estero de Chiriquí County of Abasco, in Lat. _____, Long. _____, Distance from Sea 17 miles.
Height of Cistern of the Barometer above Mean Sea-level 580 feet, above Ground 4 feet. During the MONTH of June

The Hours of Observation are of Greenwich Time.

[illegible]

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction \uparrow)	=	29.473
for Temp. (Col. 2), = 9.542 - .069 }		
Corrected Mean" of Barometer at 9 P.M., minus the Correction \uparrow)	=	29.501
for Temp. (Col. 4), = 9.575 - .074 }		
Mean at Station, corrected, and at 32°,.....	=	29.487
Correction for height, feet above Mean Sea-level,.....	=	303
Mean, reduced to 32°, and Sea-level,.....	=	29.790
Highest Reading, corrected for Index error, on the 1st day, min..	=	30.084
Lowest Do. Do., on the 1st day, min..	=	29.026
Difference, or Monthly Range,.....	=	1.058

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the <u>26</u> th, <u>June</u>	=	<u>74.0</u>
Lowest in Month, corrected for Index errors, on the <u>26</u> th, <u>June</u>	=	<u>38.0</u>
Difference, or Monthly Range,	=	<u>40.0</u>
" Corrected Mean " of all the Highest, (Col. 5),	=	<u>67.8</u>
" Corrected Mean " of all the Lowest, (Col. 6),	=	<u>44.5</u>
Difference, or Mean Daily Range,	=	<u>27.3</u>
** Calculated Mean Temperature of Month,	=	<u>53.3</u>

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

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry
Bulb, (Cols. 9 and 11), = 52.8

Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols.
10 and 12), = 49.9

‡ Computed **Temperature of Dew-Point**, = 47.1

‡ Do. Elastic Force of Vapour, = 323876

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

Relative Humidity, (Saturation = 100), = 57

RAIN fell on 20 Days; Amount in Inches, = 4-14

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

Observations made and
Return verified by

(Signed) George William Henry Baskie

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Bluney Castle, County of Aberdeen, in Lat. _____, Long. _____, Distance from Sea 17 miles.Height of Cistern of the Barometer above Mean Sea-level 280 feet, above Ground 4 feet.During the MONTH of July 1889.

The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.		SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER. No. —				WIND.				RAIN.		CLOUDS.				THERMOMETERS under Ground.				SEA.	OZONE.	GENERAL REMARKS. As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc. Mention the hour at which Storms, including Thunder and Lightning, began and ended.	Days of Month.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.		9 h. A.M.		9 h. P.M.		Readings of the H. Cup Anemometer. No. —		No. of hours in which it fell.		Amount in inches.		9 A.M.						P.M.		9 h. A.M.		9 h. P.M.		Temperature of WELL at depth of — feet, No.		Temperature at 1 fathom, and Density.		9 A.M.		9 P.M.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
		Barometer.	Attach- ed Ther- mometer	Barometer.	Attach- ed Ther- mometer	Max.	Min.	Max. in Sun/rays	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	Direction.	Force	Direction.	Force	No.	Amount (0—6)	Direction.	Amount (0—10), and Species.	Direction.	Amount (0—6), and Species.	Direction.	Amount (0—10), and Species.					Direction.	Amount (0—10), and Species.	No.	Amount (0—6)	Direction.	Amount (0—10), and Species.	No.	Amount (0—6)	Direction.	Amount (0—10), and Species.	No.	Amount (0—6)	Direction.	Amount (0—10), and Species.	No.	Amount (0—6)	Direction.	Amount (0—10), and Species.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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BAROMETER, “corrected Mean” at 9 A.M., minus the Correction†† = 29.452
for Temp. (Col. 2), = 9.535 - 0.835
Corrected Mean” of Barometer at 9 P.M., minus the Correction†† = 29.452
for Temp. (Col. 4), = 9.535 - 0.835
Mean at Station, corrected, and at 32°, = 29.452
Correction for height, feet above Mean Sea-level, = 300
Mean, reduced to 32°, and Sea-level, = 29.752
Highest Reading, corrected for Index error, on the 26 th, = 30.926
Lowest Do. Do., on the 19 th, = 28.918
Difference, or Monthly Range, = 2.008

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 29 th, = 79.0
Lowest in Month, corrected for Index errors, on the 21 th, = 42.0
Difference, or Monthly Range, = 37.0
“Corrected Mean” of all the Highest, (Col. 5), = 68.0
“Corrected Mean” of all the Lowest, (Col. 6), = 50.6
Difference, or Mean Daily Range, = 17.4
** Calculated Mean Temperature of Month, = 58.3
S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 19 th, = 79.0
“Corrected Mean,” (Col. 7), of Black Bulb, Max. in Sun, = 79.0
Lowest at Night, Black Bulb, (corrected for Index errors), on the 19 th, = 42.0
“Corrected Mean,” (Col. 8), of Black Bulb, Min. on grass, = 50.6
Difference of above Means or Range (“exposed”), = 28.4

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 57.6
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 54.6
†† Computed Temperature of Dew-Point, = 51.9
†† Do. Elastic Force of Vapour, = 1.387
†† Do. Weight of Vapour in a Cubic Foot of Air, = 82
†† Relative Humidity, (Saturation = 100), = 82
RAIN fell on 21 Days; Amount in Inches, 3.87

WIND.		SUMMARY.				
Direction.		N	NE	E	SE	S
A.M.		5	—	—	—	—
P.M.		1	—	—	—	—
Mean.		2	0	0	0	0

* Each instrument tested at the Office in Edinburgh bears the stamp “S.M.S.” and a number to be entered in the Heading; or the Number and Initials of the Maker may be here given.
† Embracing corrections for both capillarity and Index Errors.
†† 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.

Observations made and
Return verified by

(Signed) George Wilson Bluney Castle

Chambers 1882

INSTRUCTIONS FOR TAKING METEOROLOGICAL OBSERVATIONS,

WITH REMARKS ON THE USE OF INSTRUMENTS.

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

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

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

The Barometer originally constructed by Mr. Atle of London, and usually called the Board of Trade Barometer, has the great convenience of requiring no adjustment of the cistern. Its scale, however, is not true, but so much shorter as to compensate the error that would otherwise arise from the fluctuations of the surface of the mercury in the cistern. This is an excellent barometer for ordinary Observers, inasmuch as it entirely eliminates the error of observation likely to arise in not a few cases in setting the instrument to the zero point of the fixed scale when the light is not good. To show the accuracy with which these Barometers are made, it may be stated, that one was compared, during a whole year, with the Society's Standard Barometer, particular care being given to make the comparison when atmospheric pressure was rising or falling very rapidly, with the result that none of the readings differed from those of the Standard more than 0.005 inch.

A modification of Fortin's Barometer is used at a number of the Society's Stations, by which the inconvenience of the zero point with the surface of the mercury is limited by a little adjustment, when the stem passes freely through the lid and east of the cistern. When the index-line on this little instrument is brought by the adjusting

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

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

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

The errors most frequently made in reading the Barometer are errors of 1.000 inch, 0.500 inch, and 0.050 inch; that is to say, instead of 29.365 inches, either of the following is sometimes set down—viz., as 30.365 inches, 28.365 inches, 29.865 inches, or 29.815 inches. Experience having shown that even the very best Observers make these mistakes, particular attention is directed to the matter. When a Barometer having adjustable surfaces has to be removed from its fastenings, the ivory peg must first be screwed so as to form a tight plug to the cistern, thus preventing the escape of the mercury. Then screw up the mercury not quite to the top of the tube, but to within a quarter of an inch of it, and take down the instrument; it should then be carried with the cistern uppermost. Before suspending the Barometer for use, it must be ascertained whether the space above the mercury in the tube is a complete vacuum; this is the case if, on inclining the instrument, a sharp tap is produced when the mercury strikes the top of the tube. If a dull tap is heard, there is air in the tube, which must be got rid of.

As Barometers are liable to be damaged by the introduction of air into their tubes, on removal from place to place, or in being roughly handled, it may be useful to Observers to know how the air may be expelled. First close up the cistern by screwing the ivory peg tight, so as to prevent the escape of mercury; then screw up the mercury to about half an inch from the top of the tube; and having slowly inverted the instrument, place the top of it on a yielding substance, such as the foot, and gently tap on the cistern with the palm of the hand, so as to induce the air to ascend through the column to the cistern, where it may escape. Since there is the weight of two inches of mercury pressing on any air that may be in the tube, it is usually a sufficient pressure to get it wholly expelled. After repeated trials, however, it is generally accomplished, and the clear metallic sound of the mercury, when gently struck against the top of the glass tube, will show when the whole of the air has been expelled. On hanging up the Barometer, care must be taken to screw down the mercury in the tube before refastening the float of the cistern, for, if this be not attended to, the mercury will flow out, and the instrument be seriously damaged.

The Council of the Society recommend that the Self-Registering Thermometers, and the Dry and Wet Bulb Hygrometers, be kept in Stevenson's Louver-boarded Box for the purpose of protecting them from the weather, as shown in the past by repeated and annoying breakages of Thermometers of similar construction; and as regards Maximum Thermometers, either Negretti and Zambra's, or Phillips's, whether they will act at the highest temperatures they may be required to register. By the laws of the Society, Members and Observers have a right to have their instruments compared by the Secretary, and to advise with him regarding the purchase of instruments.

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Many causes conspire to produce anomalies in Rain Returns, and partly from the defective nature of the instruments used, and partly from the "elective" nature of the observations, the Rain-Gauge should not be placed on a slope or terrace, but on a level piece of ground, in as open a situation as the Observer can secure for it. As it is often difficult to obtain a position as free and unobstructed by surrounding objects as is desirable, 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 fixed so that it will remain level in all weathers, and be at a height of one foot above ground, over grass. In such gauges as Fleming's, which are furnished with a measuring rod attached to a float, the rod ought to be fixed down, and the float rise to its height only at the time the instrument is read, it being found that 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 is to be made on the first of the month, and the amount entered for the previous month.

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

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The approximate number of Hours in which objects in the sun's rays cast shadows, should be entered in the proper column. As the germination and growth of crops and plants generally, depend greatly on the temperature of the soil, it is recommended that the Temperature of the Sea be carefully taken by a properly constructed apparatus, from boats, or if this be impracticable, from the ends of piers and rocks round the coast, where it is not influenced by that of river water, and as little influenced as possible by currents sweeping along the coast, and thus acquiring the temperature of the land, either greatly heated by the sun or cooled by nocturnal radiation. At or near the time of high

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BOOK POST.

Mr ALEXANDER BUCHAN,

Secretary of the Meteorological Society of Scotland,

EDINBURGH.

Whin, Rhododendron Ponticum,

Red Flowering Currant, Mountain Ash or Rowan,

Mezecon, Lilac, Laburnum,

Holly, Hawthorn, Hazel,

Broom, Black Currant, Apple,

Bourtree or Elder, Cherry, Pear,

Strawberry, Peach, Gooseberry,

Plum, Swallow, Starling,

Sand-Martin, Plover, Lapwing,

House-Swallow, Curlew, Cuckoo,

First Arrival, First Departure,

First in Fruit, First in Blossom,

First in Blossom, First in Blossom,

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Cherry Castle, County of Sherdren, in Lat. _____, Long. _____, Distance from Sea 14 miles.
 Height of Cistern of the Barometer above Mean Sea-level 270 feet, above Ground 4 feet.
 During the MONTH of August 1882
 The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER. No. —				WIND.				RAIN.		CLOUDS.				THERMOMETERS under Ground.			SEA.	OZONE.	GENERAL REMARKS. As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc. Mention the hour at which Storms, including Thunder and Lightning, began and ended.	Days of Month.																																																																																																																																																																																																																																																																																																																																																																																																																																																															
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.		9 h. A.M.		9 h. P.M.		Readings of the H. Cup Anemometer. No. —	No. of hours in which it fell.	Amount in inches.	9 A.M.		P.M.		SUNSHINE. Hours.	9 h. A.M.					Temperature of WELL at depth of 10 fathoms. No. —	Temperature of air, at height of four feet, and surface. No. —	9 A.M.	9 P.M.																																																																																																																																																																																																																																																																																																																																																																																																																																																											
		Barometer. No. —	Attach- ed Ther- mometer	Barometer. No. —	Attach- ed Ther- mometer	Max. No. —	Min. No. —	Max. in Sun rays No. —	Min. on Grass. No. —	Dry bulb. No. —	Wet bulb. No. —	Dry bulb. No. —	Wet bulb. No. —	Direction. No. —	Force. No. —	Direction. No. —	Force. 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. — 22 inches.																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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BAROMETER, "corrected Mean" at 9 A.M., minus the Correction†† = 29.414
 for Temp. (Col. 2), = 29.445 - 0.031 = 29.414
 Corrected Mean" of Barometer at 9 P.M., minus the Correction†† = 29.440
 for Temp. (Col. 4), = 29.520 - 0.080 = 29.440
 Mean at Station, corrected, and at 32°, = 29.427
 Correction for height, feet above Mean Sea-level, = 299
 Mean, reduced to 32°, and Sea-level, = 29.726
 Highest Reading, corrected for Index error, on the 28th, = 29.929
 Lowest Do. Do. on the 23th, = 28.744
 Difference, or Monthly Range, = 1.185

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 10th, = 84.0
 Lowest in Month, corrected for Index errors, on the 27th, = 43.0
 Difference, or Monthly Range, = 41.0
 "Corrected Mean" of all the Highest, (Col. 5), = 67.0
 "Corrected Mean" of all the Lowest, (Col. 6), = 52.0
 Difference, or Mean Daily Range, = 15.0
 ** Calculated Mean Temperature of Month, = 59.5
 S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 10th, = 84.0
 "Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, = 67.0
 Lowest at Night, Black Bulb, (corrected for Index errors), on the 27th, = 43.0
 "Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, = 52.0
 Difference of above Means or Range ("exposed"), = 15.0

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 57.2
 Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 54.2
 †† Computed Temperature of Dew-Point, = 51.4
 †† Do. Elastic Force of Vapour, = 38.0
 †† Do. Weight of Vapour in a Cubic Foot of Air, = 87
 †† Relative Humidity, (Saturation = 100), = 87
 RAIN fell on 16 Days; Amount in Inches, = 2.72

WIND.												SUMMARY.		
Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.			
A.M.	4	8	1	4	9	2	8							
P.M.	3	5	2	1	10	1	13							
Mean.	4	2	1	2	10	2	10							

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

Observations made and
 Return verified by

(Signed) George Oldham Murray

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Wherry Castle, County of Shetland, in Lat. _____, Long. _____, Distance from Sea 14 miles.
Height of Cistern of the Barometer above Mean Sea-level 217 feet, above Ground 1 feet. During the MONTH of October 1882.
The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER. No. —				WIND.				RAIN.				CLOUDS.				THERMOMETERS under Ground.				SEA.		OZONE.		GENERAL REMARKS.				Days of Month.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.		9 h. A.M.		9 h. P.M.		Readings of the H. Cup Anemometer.		No. of hours in which it fell.		9 A.M.		9 P.M.		9 h. A.M.		Temperature of WELL at depth of feet, at —		Temperature of surface air, and Dew-Point.		9 A.M.		9 P.M.		As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
		Barometer.	Attach- ed Ther- mometer	Barometer.	Attach- ed Ther- mometer	Max. No.	Min. No.	Max. in Sun's rays	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	Direction.	Force.	Direction.	Force.	No.	Amount (0—10).	Direction.	Species.	Velocity (0—10).	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.		No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	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No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.	Species.	No.	Amount (0—10).	Direction.

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction†† for Temp. (Col. 2), = 29.537
Corrected Mean" of Barometer at 9 P.M., minus the Correction†† for Temp. (Col. 4), = 29.502
Mean at Station, corrected, and at 32°, = 29.520
Correction for height, feet above Mean Sea-level, = 309
Mean, reduced to 32°, and Sea-level, = 29.829
Highest Reading, corrected for Index error, on the 5th, a.m. = 30.392
Lowest Do. Do., on the 8th, p.m. = 28.710
Difference, or Monthly Range, = 1.689

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 21st, = 65.0
Lowest in Month, corrected for Index errors, on the 7th, = 16.0
Difference, or Monthly Range, = 49.0
"Corrected Mean" of all the Highest, (Col. 5), = 53.1
"Corrected Mean" of all the Lowest, (Col. 6), = 34.1
Difference, or Mean Daily Range, = 19.0
** Calculated Mean Temperature of Month, = 43.6
S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 11th, = 65.0
"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, = 65.0
Lowest at Night, Black Bulb, (corrected for Index errors), on the 11th, = 16.0
"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, = 16.0
Difference of above Means or Range ("exposed"), = 49.0

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 45.6
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 44.2
Computed Temperature of Dew-Point, = 42.5
Do. Elastic Force of Vapour, = 2.73
Do. Weight of Vapour in a Cubic Foot of Air, = 9.0
Relative Humidity, (Saturation = 100), = 90
RAIN fell on Days; Amount in Inches, 12.8 = 12.8

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

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Green Gable, County of Dorset, in Lat. _____, Long. _____, Distance from Sea 14 miles.
Height of Cistern of the Barometer above Mean Sea-level 280 feet, above Ground 4 feet. During the MONTH of November 1882.
The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER. No. —				WIND.				RAIN.		CLOUDS.				THERMOMETERS under Ground.				SEA.	OZONE.	GENERAL REMARKS. As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc. Mention the hour at which Storms, including Thunder and Lightning, began and ended.	Days of Month.						
		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. * No.	Attach- ed Ther- mometer	Barometer. No.	Attach- ed Ther- mometer	Max. No.	Min. No.	Max. in Sun's rays No.	Min. on Grass. No.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	Direction.	Force.	Direction.	Force.	Readings of the H. Cup Anemometer. No. —	No. of hours in which it fell.	No. —	Amount in inches.	Velocity (0—10), and Direction.	Amount (0—10), and Species.	Velocity (0—10), and Direction.	Amount (0—10), and Species.	No. —	3 inches.		12 inches.			No. —	22 inches.	Temperatures of WELL at depth of feet. No. —	Temperature at 1 fathom, and Density.	9 A.M.	9 P.M.
		Inches.	°	Inches.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°		°	°	°	°	°	
	1	29.114	30	28.942	51	51	28			19	18	30	19	Sw	Sw			0.11																	1		
	2	29.112	13	29.064	30	30	30			40	40	12	40	Sw	Sw			0.54																	2		
	3	29.120	40	29.450	48	49	29			35	33	12	42	Sw	Sw			0.18																	3		
	4	28.613	48	28.940	118	119	32			40	39	17	43	Sw	Sw			0.56																	4		
	5	29.094	50	29.111	144	50	35			46	45	33	31	Sw	h			0.31																	5		
	6	29.462	42	29.420	40	50	27			43	42	33	32	h	h			0.52																	6		
	7	29.346	30	29.814	46	44	17			27	27	44	42	Sw	Sw			0.31																	7		
	8	28.738	37	28.563	43	46	24			35	34	29	38	Sw	Sw			1.83																	8		
	9	28.566	42	28.816	42	42	31			39	38	38	36	h	h			0.15																	9		
	10	29.020	40	29.020	40	43	32			40	36	34	35	Sw	Sw			0.19																	10		
	11	29.308	34	29.612	43	44	28			32	32	35	33	Sw	h			0.53																	11		
	12	29.448	34	29.841	32	43	27			35	35	29	28	h	h																				12		
	13	29.558	33	29.991	32	39	24			30	30	36	36	h	h			0.20																	13		
	14	29.988	33	29.867	40	40	22			30	29	34	35	h	Sw			0.36																	14		
	15	29.620	40	29.374	41	40	30			40	36	38	32	Sw	h			0.36																	15		
	16	29.370	40	29.671	38	40	30			41	38	32	31	h	h																				16		
	17	29.400	30	29.583	35	33	21			25	35	36	32	Sw	h			0.41																	17		
	18	29.472	39	28.986	34	40	28			35	32	28	28	Sw	h			0.52																	18		
	19	28.773	39	28.841	32	40	24			35	35	25	25	h	h																				19		
	20	28.896	30	29.228	37	35	20			25	25	35	34	Sw	h																				20		
	21	29.120	40	29.225	38	38	31			35	35	33	35	h	h			0.10																	21		
	22	28.230	39	28.922	37	35	32			35	33	41	40	Sw	h			0.46																	22		
	23	28.940	43	28.741	40	43	35			44	42	38	37	h	Sw																				23		
	24	28.741	40	28.528	37	43	28			45	41	32	30	Sw	Sw																				24		
	25	28.574	38	28.330	33	39	28			35	32	31	31	Sw	Sw			0.04																	25		
	26	28.760	38	29.100	39	39	28			35	32	36	35	Sw	h			0.16																	26		
	27	29.228	37	29.278	40	40	30			34	30	34	36	h	h			0.16																	27		
	28	29.508	37	29.636	34	39	24			34	32	30	29	h	h			0.19																	28		
	29	29.478	36	29.465	42	39	30			33	31	35	36	h	h			0.17																	29		
	30	29.870	40	29.896	30	39	28			35	33	26	26	h	h																				30		
	31																																				31
	Sums.	15310	9	17129	10	12	12			11	12	12	12					5.37																			
	Means.	29.228	38.6	29.278	38.6	39.2	28.2			36.4	31.7	34.7	34.2																								
	+ Total Corrections for Instrumental Errors.	2050		2050																																	
	+ 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†† = 29.252
for Temp. (Col. 2), = 9.279 - 0.27 }
Corrected Mean" of Barometer at 9 P.M., minus the Correction†† = 29.280
for Temp. (Col. 4), = 9.309 - 0.29 }
Mean at Station, corrected, and at 32°, = 29.266
Correction for height, feet above Mean Sea-level, = 313
Mean, reduced to 32°, and Sea-level, = 29.579
Highest Reading, corrected for Index error, on the 3rd th, = 29.991
Lowest Do. Do., on the 23rd th, = 28.558
Difference, or Monthly Range, = 1.433

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 1st th, = 51.0
Lowest in Month, corrected for Index errors, on the 7th th, = 14.0
Difference, or Monthly Range, = 37.0
"Corrected Mean" of all the Highest, (Col. 5), = 42.2
"Corrected Mean" of all the Lowest, (Col. 6), = 27.8
Difference, or Mean Daily Range, = 14.4
** Calculated Mean Temperature of Month, = 35.0
S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 1st th, = _____
"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, = _____
Lowest at Night, Black Bulb, (corrected for Index errors), on the 1st th, = _____
"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, = _____
Difference of above Means or Range ("exposed"), = _____

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 35.3
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 34.4
Computed Temperature of Dew-Point, = 33.0
Do. Elastic Force of Vapour, = 18.8
Do. Weight of Vapour in a Cubic Foot of Air, = _____
Relative Humidity, (Saturation = 100), = 91
RAIN fell on 21 Days; Amount in Inches, = 5.37

WIND.		SUMMARY.		
Direction.	N NE E SE S SW W NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.
A.M.	10 1 2 1 17 3			
P.M.	9 1 4 1 11 3			
Mean.	9 1 0 4 0 14 0 3			

(Signed) George William Henry Baskin

Observations made and
Return verified by

TAKING METEOROLOGICAL

The Council of the Society recommend that the Self-Registering Thermometers, and the Dry and Wet Bulb Hygrometers, be kept in Stevenson's Louvre-boarded Box for Thermometers, painted white inside and outside, and secured to four stout posts, also painted white, firmly fixed in the ground. The posts must be of such a length that when the Thermometers are hung in position the Bulbs of the Minimum Thermometer, and of the Dry and Wet Bulb Thermometers will be exactly at the same height of seven years above the ground, the Maximum Thermometer being hung immediately above the Minimum Thermometer. The Thermometer to be placed over a plot of grass, and in a free open space to which the sun's rays have free access during as much of the day as surrounding conditions oblige the Observer to secure. The thermometers are suspended on cross laths in the centre of the Box, and face the door, which should open to the north.

The Council regard the question of UNIFORMITY OF HEIGHT ABOVE GROUND, and METHOD IN PROTECTING THE THERMOMETERS, as vital in every system of Meteorological Observation, since without it Obser-

variations made at different Stations are incomparable, 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 Rutherford's Minimum Thermometer are recommended. It is recommended that these Thermometers be graduated on the glass stem. The Minimum Thermometer is liable to two derangements—viz., the

column of spirit breaking, and a sort of the spirit falling by the temperature and lodging at the top of the tube. This demargent is of occasional concurrence with Protected Thermometers, but is 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 set right by any one, when the column of spirit changes to separate. Let the thermometer be taken down and the top of the column of spirit drawn up to the top of the tube, and then, by gently swaying slowly the tube, the object being the production of centrifugal force, to send down the detached portion of spirit till it unites with the column. A few throws, or swinging strokes, will generally be sufficient for the

purpose; after which the Thermocouple should be placed in a slanting position, to allow the rest of the spirit still adhering to the sides of the tube to drain down to the column. But another method must be adopted, if the portion of spirit in the top of the tube be small. Heat should be applied slowly and cautiously to the top end of the tube where the detached portion of spirit lies, which, being turned into vapor by the heat, will condense on the surface of the unbroken column of spirit. Care must be taken that the heat is not applied too quickly; for, if this be done, the tube will break and the instrument be destroyed. The best way to apply the requisite amount of heat, is by bringing the end of the tube slowly down towards a minute flame from a gas-burner; or, if gas be not at hand, a piece of heated metal will serve instead.

Black-Box Thermometers. During night, have black coatings which may easily be made, or mended, by the application of a mixture of lampblack and printer's ink. They are placed in shallow blackened boxes, whose sides protect the bulbs from the wind. The Maximum should be freely exposed to the sun, and the Minimum should rest on wooden supports 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 bulb of the Maximum. The Maximum Thermometer by day, and the Minimum Thermometer by distillation. Black-bulbs enclosed in glass hockets, may also be used, being indeed preferable to the

The Hydrometer in use at the Society's Stations consists of two *Dry and Wet Bulb* Thermometers usually, but not necessarily, mounted on one frame. As apparently slight deviations from the normal observations, it must, however, be added, that the whole subject of the observation of Solar and Terrestrial Radiation is not yet in a sufficiently advanced state to warrant the exclusive recommendation of any one of these methods.

attached; the frame must be such as will bring the tubes forward by an inch from any board on which it may be suspended; the water-cup must be covered, and altogether placed to the side, and a little below the level of the wet bulb, but in no case under the bulbs: the muslin must be of medium fineness, and fastened at the neck of the bulb by the cotton, which also supplies it with water. It must be seen to by the Observer that the muslin is always clean and moist, and the water pure. In frosty weather, observation a matter of

In reading the Thermometer great care must be taken to bring the eye exactly opposite the tip of the index or column of mercury. The reading ought to be taken at a distance of at least a degree and in animals, this distance should be 39°, 40°, or 40½°, respectively. In the Thermometer, according as it indicates a little under an exact degree, or a little over 40° or 40½°, respectively, So also much delay, and must be made with great care. The bulb must be moistened by immersion from 15 to 30 minutes before the hour of observation. From the film be thus formed evaporation will be observed as from the moist cloth in ordinary circumstances.

The Hygrothermograph is a small, portable instrument, which is used for the purpose of measuring the temperature and the humidity of the air. It is a small, portable instrument, which is used for the purpose of measuring the temperature and the humidity of the air. It is a small, portable instrument, which is used for the purpose of measuring the temperature and the humidity of the air.

when the Soft-Registering Thermometer is used for attendance purposes. These are more liable to accidents, in winter at least, the strongest may occur at any hour, and it is necessary to refer their occurrence to their proper meteorological sign. In the Soft-Registering Thermometer, the indication registered on the 31st are those of a series of phenomena commencing at 9 P.M. on the 24th, and extending till 9 P.M. on the 31st. No instrument ought to be used for Meteorological purposes till it has been carefully tested by comparison with a Standard Thermometer. When such Thermometers are not graduated on the stem, but merely on an 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 Soft-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 Venier of Barometers in reference to their scales, and the perfect freedom of the Barometer from air; the correct number

1880-1881

Mr. AL

BOOK POST.

ALEXANDER H.
Secretary of

BUCHAN,
of the *Meteorology*

Scotland,
EDINBURGH

OBSERVATIONS IN CONNECTION WITH THE PERIODICAL RETURN OF THE SEASONS.

Have the goodness also to state any information you may be able to collect relative to the Crops of Grain, Hay, Potatoes, Turnips, Fruits, etc., whether plentiful, or in perfection; whether any have suffered from blight, disease, etc. Whether epidemic disease prevails among cattle; and the Agricultural condition of the district generally.

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Glenny Castle, County of Aberdeen, in Lat. _____, Long. _____, Distance from Sea 14 miles.
Height of Cistern of the Barometer above Mean Sea-level 277 feet, above Ground 4 feet. During the MONTH of December 1887.
The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER. No. —				WIND.				RAIN.		CLOUDS.		THERMOMETERS under Ground.			SEA.	OZONE.	GENERAL REMARKS. As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc. Mention the hour at which Storms, including Thunder and Lightning, began and ended.	Days of Month.				
		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. * No.	Attach- ed Ther- mometer	Barometer. No.	Attach- ed Ther- mometer	Max. No.	Min. No.	Max. in Sun's rays No.	Min. on Grass. No.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	Direction.	Force.	Direction.	Force.	Readings of the H. Cup Anemometer. No. —	No. of hours in which it fell.	Amount in inches.	Velocity (0-10), and Direction.	Amount (0-10), and Species.	Velocity (0-10), and Direction.	Amount (0-10), and Species.					No. 3 inches.	12 inches.	No. 22 inches.	
		inches.	°	inches.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°					°	°	°	°
	1	29.696	32	29.686	34	33	29			28	28	31	30	Sw	Sw					0.00	Sw	Sw							Very cold & stormy wind very strong	1		
	2	29.880	36	29.873	39	45	39			33	32	36	35	Sw	Sw					0.03	Sw	Sw							High day, fine at night but cold	2		
	3	28.876	42	28.707	43	47	37			40	39	39	38	Sw	Sw					0.12	Sw	Sw							Very cold with slight showers & wind	3		
	4	28.707	36	29.000	36	34	16			31	31	32	31	Sw	Sw					0.30	Sw	Sw							Very cold & rough, fresh breeze & snow	4		
	5	29.238	33	29.346	30	30	16			28	24	28	24	Sw	Sw					0.11	Sw	Sw							High day, snow throughout	5		
	6	29.378	28	29.373	22	26	12			26	26	23	23	Sw	Sw					0.30	Sw	Sw							Cold day, snow falling all day	6		
	7	29.291	32	29.376	26	24	18			29	29	23	23	Sw	Sw					0.30	Sw	Sw							Very cold & stormy throughout	7		
	8	29.468	18	29.338	23	24	17			21	21	26	26	Sw	Sw					0.40	Sw	Sw							High & breezy & stormy throughout	8		
	9	29.433	36	29.430	36	34	23			33	33	34	33	Sw	Sw					0.46	Sw	Sw							High & cold with rain & snow	9		
	10	29.130	36	29.338	37	36	31			34	33	34	33	Sw	Sw					0.17	Sw	Sw							Cold day with heavy showers & snow	10		
	11	29.441	32	29.339	29	26	16			27	27	26	26	Sw	Sw					0.40	Sw	Sw							Very cold & cold with snow all day	11		
	12	29.364	14	29.360	16	44	02			10	10	04	04	Sw	Sw					0.04	Sw	Sw							High day, throughout. Low & frost	12		
	13	29.366	18	29.370	20	13	02			14	13	12	12	Sw	Sw					0.04	Sw	Sw							Very fine day, but very cold	13		
	14	29.157	07	29.303	3	10	40			03	03	02	02	Sw	Sw					0.11	Sw	Sw							Very cold & frosty, cold & wet at night	14		
	15	29.551	01	29.619	19	20	08			40	30	20	20	Sw	Sw					0.11	Sw	Sw							Overcast, cold but day & night	15		
	16	29.619	40	29.620	40	40	18			39	38	39	38	Sw	Sw					—	Sw	Sw							Very cold & rough, great frost	16		
	17	29.470	40	29.478	37	41	36			40	40	34	33	Sw	Sw					0.40	Sw	Sw							Very cold & cold with heavy frost	17		
	18	29.464	42	29.564	42	42	34			42	41	41	40	Sw	Sw					0.32	Sw	Sw							Overcast, cold & cold with heavy rain	18		
	19	29.713	43	29.817	41	42	36			41	41	39	38	Sw	Sw					0.00	Sw	Sw							Overcast & cold all day with rain	19		
	20	29.764	40	29.409	45	45	41			42	41	43	42	Sw	Sw					0.16	Sw	Sw							Very fine day, throughout	20		
	21	29.116	42	29.118	43	45	38			39	38	40	39	Sw	Sw					0.04	Sw	Sw							High day, but very cold & rough	21		
	22	29.170	40	28.848	37	41	33			37	36	36	34	Sw	Sw					0.10	Sw	Sw							Very cold rain throughout & heavy	22		
	23	29.138	37	29.333	35	36	30			32	32	32	31	Sw	Sw					0.09	Sw	Sw							Very cold & snow all day at times	23		
	24	29.336	34	29.396	30	35	20			31	30	17	17	Sw	Sw					0.00	Sw	Sw							Cold & rough with showers of snow	24		
	25	29.183	36	29.096	30	26	28			33	32	29	27	Sw	Sw					0.00	Sw	Sw							Cold day but fine in general	25		
	26	29.086	34	29.234	24	32	17			32	31	20	20	Sw	Sw					0.21	Sw	Sw							Very cold & cold & snow & frost	26		
	27	29.036	34	28.778	37	38	17			34	33	34	33	Sw	Sw					0.00	Sw	Sw							Very fine day, cold at night & rain	27		
	28	28.913	43	29.073	39	46	33			44	42	35	34	Sw	Sw					0.18	Sw	Sw							Cold & wet throughout the day	28		
	29	28.873	39	29.033	39	37	32			36	36	36	35	Sw	Sw					0.00	Sw	Sw							High & cold & rain all day	29		
	30	29.378	37	29.470	40	37	28			34	32	31	30	Sw	Sw					0.14	Sw	Sw							Very fine & mild throughout	30		
	31	29.471	40	29.283	36	40	27			38	37	30	30	Sw	Sw					0.04	Sw	Sw							Cold & cold & wet & day	31		
Sums.		31612	11	2654	1003	11	211			13	13	13	13							5 5-										NOTATION USED IN GENERAL REMARKS.		
Means.		29.319	29	29.312	29	34	23			32	32	29	28							0.27												
Total Corrections for Instrumental Errors.		+0.50		+0.50																												
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 ++ = 29.357
for Temp. (Col. 2), = 29.357 - 0.12 = 29.237
Corrected Mean" of Barometer at 9 P.M., minus the Correction ++ = 29.352
for Temp. (Col. 4), = 29.352 - 0.10 = 29.252
Mean at Station, corrected, and at 32°, = 29.354
Correction for height, feet above Mean Sea-level, = 318
Mean, reduced to 32°, and Sea-level, = 29.672
Highest Reading, corrected for Index error, on the 19th, = 29.817
Lowest Do. Do., on the 21st, = 28.804
Difference, or Monthly Range, = 1.013

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 3th, = 47.0
Lowest in Month, corrected for Index errors, on the 11th, = 66.6
Difference, or Monthly Range, = 44.330
"Corrected Mean" of all the Highest, (Col. 5), = 33.4
"Corrected Mean" of all the Lowest, (Col. 6), = 28.6
Difference, or Mean Daily Range, = 10.8
** Calculated Mean Temperature of Month, = 28.0
S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 11th, = 57.2
"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, = 57.2
Lowest at Night, Black Bulb, (corrected for Index errors), on the 11th, = 57.2
"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, = 57.2
Difference of above Means or Range ("exposed"), = 57.2

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 30.7
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 29.3
Computed Temperature of Dew-Point, = 26.9
Do. Elastic Force of Vapour, = 1.46
Do. Weight of Vapour in a Cubic Foot of Air, = 87
Relative Humidity, (Saturation = 100), = 87
RAIN fell on Days; Amount in Inches, = 6.27

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

(Signed) Geo. Julius Henry Castle

Observations made and
Return verified by

TAKE THE NEW METEOROLOGICAL OBSERVER WITH REMARKS ON THE USE OF INSTRUMENTS.

The Council of the Society recommend that the Self-Registering Thermometers, and the Dry and Wet Bulb Hygrometers, be kept in Stevenson's Louver-boarded Box for Protection from the Sun, and that the Self-Registering Thermometers, painted white inside and outside, and the Hygrometers, painted white, should be placed in a separate box, covered with a sheet of white paper, and secured to four stout posts, also painted white, firmly fixed in the ground. The posts must be of such a length that when the Hygrometers are hung in position the Bulbs of the Minimum Thermometers 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 in which there is no windward wall or other obstruction, so that as much of the air as surrounding conditions enable the Observers to secure. The Thermometers are suspended on cross laths in the centre of the Box, and the door, which should open to the north. The Council regard the question of UNIFORMITY OF HEIGHT ABOVE GROUND, AND METHOD IN PROTECTING THE THERMOMETERS, as vital in the construction of a Meteorological Observatory, since without it Observations made at different Stations are incompatible, thus rendering it impossible to compare the Climates of places with each other as regards their most important features.

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

Observations made at different Stations are incomparable, 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 Rutherford's Minimum Thermometer are recommended. It is recommended that these Minimum Thermometers be graduated on the glass stem. The Minimum Thermometer is liable to two derangements—viz, the column of spirit breaking; and part of the spirit distilling by high temperature and lodging at the top of the tube. This derangement is of occasional occurrence with Protected Thermometers, but of frequent occurrence with exposed Thermometers. Hence a systematic examination of Minimum Thermometers ought to be a regular part of the work carried on by each Observer.

A few minutes, or five, will be necessary for the Thermomixer to be placed in a slanting position, to allow the rest of the spirit still adhering to the sides of the tube to drain down to the bottom. But another method must be adopted, if the portion of spirit in the top end of the tube be small. Heat should be applied slowly and uniformly to the top end of the tube where the detached portion of spirit is, which, being turned into vapour by the heat, will condense on the sides of the broken column of spirit. Care must be taken that the heat is not applied too quickly; for, if this be done, the tube will break and the mixture be destroyed. The best way to apply the requisite amount of heat is by bringing the end of the tube slowly down towards a minute flame from a gas-burner; or, if gas be not at hand, a piece of heated metal will serve instead.

The bulbs of the Thermomixers for registering the greatest heat from the sun's rays, and the less from radiation, are **black-bulb**.

Black-Bath Thermometer. During night, have a black coating, which may easily be made, or mended, by the application of a mixture of lampblack and printer's ink. They are placed in shallow blackened boxes, whose sides protect the bulbs from the wind. The Maximum should be freely exposed to the sun, and the Minimum should rest on wooden supports 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 glass. The Maximum Thermometer, and the Minimum Thermometer, should be covered by distillation. Black-balls enclosed in glass jackets* may also be used, being mended prebale to the

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

The Hydrometer in use at the Society's Stations consists of two kinds. The Hydrometers usually, but not always, used are the *Dry and Wet Bulb* Hydrometers, and the *Thermometer and Hygrometer*. The approved form of this apparatus seriously vitiates the Hygrometrical Observations. Observers are specially requested to attend to the following conditions:—The bulbs must hang down by at least an inch free from the scales and frame to which they are

attained; the flame must, in such a way, bring the tubes forward to the point of contact, on which, as may be suspected, the water-cap must be covered, and altogether placed to the side, and a little below the level of the wet bulb, but in no case under the bulb; the heat of the fire must be of medium fineness, and fanned at the neck of the bulb by the observer, which also supplies it with vapor. It must be seen to by the pure. In frosty weather, always a clean and moist, and much thicker, had must be made with great care. The bulb must be incased by immersion from 15 to 30 minutes before the hour of observation. From the film of ice thus formed, evaporation will proceed as from the moist cloth in ordinary circumstances.

In reading the Thermometer great care must be taken to bring the eye exactly opposite the tip of the index to the column of mercury. The reading ought to be taken to tenths of a degree, and noted in decimals. Thus the Thermometer will be read— $39^{\circ} 5$, $40^{\circ} 0$, or $40^{\circ} 1$; or again, $40^{\circ} 4$, $40^{\circ} 5$, $40^{\circ} 6$, according as the indication a little under, an exact coincidence with, or a little over 40° , respectively. So also $40^{\circ} 1$ and $40^{\circ} 0$ may or less must be registered $40^{\circ} 2$, or $40^{\circ} 3$, or $40^{\circ} 7$, or $40^{\circ} 8$ respectively. In reading Rutherford's Minimum Thermometer, the indication of that end of the index which is next the surface of the spirit is alone noted. On opening the Thermometer Box, the Dry and Wet Bulb Thermometers are to be first, and rapidly, read, inasmuch as they are readily affected by heat from the person of the Observer.

The Hygrometer is read at 9 a.m. and 9 p.m. The Self-Registering Thermometers are read at 9 a.m. only, as indicating the greatest and least degrees of temperature in the 24 hours preceding.

24 hours preceding. It is now more difficult to interfere with the Self-Registering Thermometers are readily used, in which at least, the extremes may occur as any hour; and it is therefore better their occurrence to their proper place, logical in time. The Society's schedules, the indications registered on the 24 hr. those of a series of phenomena commencing at P.M. on the 24, and extending till 9 P.M. on the 31.

No instrument ought to be used for Meteorological purposes till it has been carefully tested by comparison with a Standard Thermometer. When such Thermometers are used, they are not graduated on the stem, but merely on an attached scale, whereby repairs, they are very liable to be moved from their position on the Scale, and might never afterwards 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 service on the tube, ought to be tested once a year, in snow or melting ice.

In selecting instruments, the following points require attention:—The positions of the venter of Barometers in reference to their scales, and the vertical freedom of the Barometer from air; the correct number

turning of the scale of every instrument; the rejection of Thermometers, the frame-works of which are not likely to stand exposure to the weather as shown in the past by repeated and annoying breakages of the Thermometers of similar construction; and as regards Maximum Thermometers, either Negretti and Zamboni's, or Phillips's, whether they will act the highest temperatures they may be required to register. In the laws of the Society, Members and Observers have the 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 other points.

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

The system of simultaneous observation, pursued at different Stations, is likely to give highly valuable and important results, particularly in connection with the system of thickly-planted Stations over a limited district round Edinburgh called Storm Stations, in the course of being established by the Society for the systematic investigation of the relation of the force of the wind to barometric pressure, rain-fall, etc., and other meteorological phenomena.

The Council would recommend the Homiophetical 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

2. As regards Velocity and Amount of Wind

Pressure.—Observation may be ascertained. For indicating the Force of the Wind at any particular hour of observation, the Pressure of the Air is observed, and the Force of the Wind is indicated by the Anemometer recently brought under the notice of the Society by Mr. T. Stevenson, the Honorary Secretary, and Mr. R. Ballingall, the Society's Observer at Falklands, are recommended as likely to secure uniformity in making observations on the Force of the Wind.

Many causes conspire to produce anomalies in Rain Returns, arising partly from the difficulty of obtaining a perfectly unobscurable situation for observation, and partly from the defective nature of the instruments used. On the Rain-Gauge should not be placed on a slope or terrace, but on a level piece of ground, so as to be exposed to the full force of the wind, secure from obstruction by surrounding objects as is desirable, as the wind would be taken to place it at some distance from shrubs, trees, buildings, or other obstructions, at least as many feet from their base as they are in height. The more important directions, towards which it is most desirable to have a free exposure, are in the order of their importance, S, N.E., S.W., S, and W. The rain of the Gauge must be perfectly level, and fixed so that it will remain level in all weathers, and be at a height of one foot above

remain over glass. Level glasses as fluting, which are furnished with a measuring rod attached to a float and ought to be fixed down, and the float rise to its height only at the time the instrument is read, it being found that a small projecting above the rim of the glass seriously interferes with the proper measurement of the Rain gauge. When a measuring glass is read, 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 terms of the previous day. If the Gauge is read once a month, the reading is to be made on the first of the month, and the amount entered for the previous month. Show-falls may, for convenience, be registered in columns.

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

Convenient abbreviations for the nomenclature of Clouds will be found on the other side. The amount of Clouds ought to be estimated from the greater or less obscuration of the sky overhead ($\frac{1}{2}$, within 20° or 30° of the zenith). The state of Clouds that appear near the horizon are viewed indirectly; and thus, being unable to gauge their height, are viewed as they appear, thus, into account be noted among the Remarks. The amount of Cloud is rated from a scale of 0 to 10; thus, when the sky overhead is free from Clouds it is numbered 0, when half covered by Clouds, 5, wholly covered, 10, and so on.

Observations of Clouds are made at 9 A.M. and at sunset, as illustrating the condition and currents of the upper and lower regions of the atmosphere. The entries in the schedule are to be made in

of the atmosphere. The 10-km/s in the scandate are to be made in the following manner:—1. first, in the column Velocity and 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 Cloud column, an entry of $\frac{1}{4}$ s.e. will indicate that the higher regions are covered to the amount of 4-fourths with stratus Clouds; and that the sky is further obscured to the extent of 2-eighths by lower Clouds of the cumulo stratus kind.

Remarks on peculiar Clouds, accompanied with drawings, will assist materially in the development of a more exact nomenclature

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

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

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

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

water, in cases where the observation may be made. When convenient, extra, and greater depths, notwithstanding the Temperature of the Air, and the direction of the Wind, may be taken on the 15th, and 25th of each month. It is also very desirable that observations on the daily Maxima and Minima by Thermometers continuously immersed, be instituted at points along the coast, by the method proposed by Mr. Stevenson, and already commenced at Freetown and Liverpool. The Temperature of the water at the bottom of Hills ought,

Time of completion of observations	Wind direction and force, both the depth of the water being noted.
Temperature of air	Mention what <i>Test-Papers</i> were used, Schœnbein's or Morfitt's. The Paper is affixed by a pin to a board in the forenoon.
Temperature of surface of water	Remember <i>Doz</i> and the indications registered at 9 A.M.
Temperature of air at height of 1000 feet	It is feared that these indications be registered in connection with the force and direction of the wind at the time of observation, in the following manner—thus <i>gsw</i> , as an Ozon entry in the schottell will indicate that the Ozon paper is tinted as 8 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.
Direction of surface current	Too much importance cannot be attached to the electric condition of the atmosphere in connection with terrestrial magnetism, barometrical, thermometrical, and meteorological phenomena generally. A proper Electrometer should be used.
Amount of Atmospheric Electricity	The Remarks column is completely too narrow. Some of the most valuable Observations that can be taken are those for which no rules can be given nor hours
Remarks	

assigned. The *notes of confusion* ought, therefore, to be given every twenty-fourth of, and a list of such acts in general use are given at the foot of the column. These special and extraordinary Observations, great prominence ought to be given in this column to Epidemical Diseases, differences ought to be given in this column between the Lower and Upper Strata of Clouds, the Column of the S.S.S.Y. etc. Remarks ought to be made on the recurrence of Meteors, Auroral Boreas, remarkable depressions, elevations and fluctuations of the Barometre, remarkable storms, remarkable falls of Snow, Hail or Rain, the Hoar of Storms of Wind coming, attacking their maximum, and endings, as well as its notes on Storms, States, etc.

the United States. When forty miles in the vicinity of a Station, the flight of Clouds and the Snow-line in winter should be recorded. The use of abbreviations, the state of the weather at 9 A.M. and P.M. should be registered either in two columns, otherwise, more compactly, in one column, and the column of Remarks, completed, or ruled off for the purpose, from the column of Remarks.

Observations in connection with the Periodic Return of the Seasons, possess not only great scientific value, but are also of considerable importance in connection with Agriculture, Horticulture, and Natural History. The Council would direct the special attention of Observers to the registration of such phenomena, so that the published Summaries may fairly represent the whole of Scotland.

Observations ought to be confined to individual trees and shrubs; to particular species of birds, and, in the case of crops, to specified sorts reared from year to year on a selected piece of ground or farm. The Annual Table, published yearly in the Society's Journal, will indicate the species of plants and animals to which special attention is more particularly directed.

is more particularly directed. 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, on being presented for comparison, does not give him satisfaction.

A. B.
(By Order)

EDINBURGH, December 1880.

[illegible]

of	...	Barley,	...
	...	Bore or Bigg,	...
	...	Oats,	...
	...	Wheat,	...
	...	Beans,	...
	...	Pease,	...
	...	Potatoes,	...
	...	Turnips,	...
	...	Rye Grass,	...

[illegible][illegible]

To

Mr ALEXANDER B

Secretary of

BOOK POST.

28
1
MAY 1880
17

BUCHAN,
of the Meteorological Service

Society of Scotland,

EDINBURGH.

authoritative,
heraldic,

Depa	First Arrival	MIGRATORY BIRDS. Cuckoo, Curlew, House-swallow, Lapwings, Plover, Sand-Martin, Starling, Swan, Rail or Corn Crane,	
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[illegible][illegible]

Barberry,	Have the goodne	Epizootic disease prev
Bourne or Elder,		
Broom,		
Hazel,		
Hawthorn,		
Holly,		
Laburnum,		
Lilac,		
Mezerion,		
Mountain Ash or Ho		
Red Flowering Curr		
Rhododendron Pontic		
Whin,		

OBSERVATIONS IN CONNECTION WITH THE PERIODICAL RETURN OF THE SEASONS.

[illegible]

Have the goodness also to state any information you may be able to collect relative to the crops of certain, if any, farmers, fruiters, etc., whether in perfection, or in perfection, and the agricultural condition of the district generally.

EDINBURGH.

Secretary of the Meteorological Society of Scotland.

Mr ALEXANDER BUCHAN,

BOOK POST.

To

TIONS,

OBSEF

TAKING METEOROLOG

INSTRUCTIONS

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