

# SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Gordon's College, Abide, County of Aberdeen, in Lat. 57° 9', Long. 2° 6', Distance from Sea 1 miles.

Height of Cistern of the Barometer above Mean Sea-Level 66 feet, above Ground 22 feet.

During the MONTH of January 1893

The Hours of Observation are of Greenwich Time.

[illegible]

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction  $\frac{1}{11}$  } = 29.841  
 , for Temp. (Col. 2), = 29.877 ..... .036 }

"Corrected Mean" of Barometer at 9 P.M., *minus* the Correction  $\left\{ \begin{array}{l} \text{††} \\ \text{for Temp. (Col. 4),} \end{array} \right\} = 29.895$   
 $\quad \quad \quad = 29.931 \dots \dots .036 \dots \dots$

Mean at Station, corrected, and at 32° ..... = 29.868

Correction for height, 66 feet above Mean Sea-level,.....

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

Highest Reading, corrected for Index error, on the 11 th,..... 20.388

Lowest Do. Do., on the 26th,..... = 29.196  
1.192

Difference, or **Monthly Range**, ..... = 1.772

\* 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 capilarity and Index Errors  
 ‡ The Diurnal Range for Scotland is as yet unknown.

While the Diurnal Range is unknown, the Arithmetical Mean of Cols. 5 and 6 will be entered as the "Calculated Mean Temperature." Any observations not taken under the Conditions specified in the Directions on the other side, or noted at the Top of each column, must be marked as such by the observer, in each Schedule. See over.

S.-P. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 23<sup>rd</sup> day, ..... = 52.8

Lowest in Month, corrected for Index errors, on the 6 th, ..... = 10.0

Difference, or Monthly Range, ..... = 42.8

"Corrected Mean" of all the Highest, (Col. 5), ..... = 40.4

"Corrected Mean" of all the Lowest, (Col. 6),..... = 32.5-

Difference, or **Mean Daily Range**, ..... = 7.9

\*\* Calculated Mean Temperature of Month, ..... = 76.4

S-B THERMOMETER. Black Bulb in Sun. Highest. (corrected for .....

Index Errors), on the th..... =

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), ..... = 27.6

Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), 36.3

‡‡ Computed **Temperature of Dew-Point**, ..... = 34.5

‡‡ Do. Elastic Force of Vapour, .....	=	1.200
‡‡ Do. Weight of Vapour in a Cubic Foot of Air .....	=	0.22

## Relative Humidity (Saturation = 100), ..... = 89

RAIN fell on 26 Days; Amount in Inches, .....

WIND.		SUMMARY.									
Direction	N	NE	E	SE	S	SW	W	NW	Calm or	Mean	Mean

Direction	SE	E	SE	S	SW	W	NW	Variable.	Force.	Local in miles
A.M.	1	2	3	1	2	4	5	6	0.6	

	1	0	5	1	5	7	5	7	0	0.7
P.M	2	0	0	4	3	8	6	8	0	1.0

Mean,	2	0	2	3	3	7	6	8	0	0.95 =	0.9
-------	---	---	---	---	---	---	---	---	---	--------	-----



Observations made and  
Return verified by { James Dale, Teacher in  
Robert Gordon's College, Aberdeen

(Signed)  
Greatest daily change  
= 20.0 on the 5<sup>th</sup>

W.F.S.



# OBSERVATIONS

correct numbering of the scale of every instrument; the rejection of Thermometers the frameworks of which are not likely to stand exposure to the weather, as shown in the past by repeated and annoying breakages of Thermometers of similar construction; and a supply of maximum Thermometers, and of the greatest and smallest, on Phillips' system, which they will add to the list of instruments to be kept in readiness for the use of the Society. Members and Officers are requested to sign the list of their instruments compared by the Secretaries, and to advise with him regarding the purchase of instruments. Very great care should be bestowed on the Observations of the *Wind*. Wind, the accuracy of which, both as regards Direction and Force, is so essential towards the right discussion of many of the more important problems of the science. A Wind-Vane ought to be elevated at least 12 feet above surrounding objects. When it oscillates incessantly, the mean direction should be taken. In all cases, and when especially when the Vane is stationary, in the latter, but the Vane is feeble, reference may be made to the direction of smoke, etc., on 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

A system of simultaneous observations, pursued at different Stations, is likely to give highly valuable and important results, particularly in connection with the Edinburgh called Storm 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 GRADIENTS, and other points connected with storms.

The Council would recommend the Hemispherical Co. Avenue.

meter, —a self-registering instrument which shows the amount of Wind that passes it per day; from which Velocity and Force of the Wind at the time of observation may be ascertained. For indicating the Force of the Wind at any particular hour of observation the Pressure of the Air is measured by the use of the Barometer. Anemometers recently brought under the notice of the Society by Mr. T. Stevenson, the Honorary Secretary, and Mr. R. Baily, the Secretary at Ennaburgh, are recommended as likely to secure the Society's Observer at Ennaburgh, the same results.

uniformity in making observations on the Force of the Wind. Many causes conspire to produce anomalies in Rain Returns arising partly from the difficulty of obtaining a perfectly unobstructed situation for observation, and partly from the defective nature of the instruments used. The Rain Gauges 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 is desirable. The observer should place the instrument 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 expose are S.W., S.E., S., and W. The height of the gauge must be perfectly level 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 storm 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, after the Gauge is read once a month, the reading to be made on the first of the month, and the amount entered for the previous month. Snow-falls may, for convenience, be registered in the rain columns, under the following conditions:—When a Snow storm occurs, it should be noted in the Remarks, and the letter S annexed to the depth of water received. The depth of the snow must be noted in addition, and no credit given for the melted portion. When a light snow-fall occurs, the depth of the Rain Gauge. For wind, wind 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 a deduction or inference.

no drift is observed, and registered in addition, and as a check upon the indications of the Rain Gauge. For wind, rain, and snow, as indexed in every column, the Observer cannot be too careful to register observations only; and nothing that purports of the nature of deduction or inference.

Convenient abbreviations for the nomenclature of Clouds will be found on the other side. The amount of Cloud ought to be estimated from the greater or less amount of Clouds.

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

Observations of the Clouds are made at 9 A.M. and at sunset, as illustrating the condition and currents of the upper and lower regions of the atmosphere. The entries in the schedule are to be made in the following manner:—Thus, in the column Velocity and Direction, 6, S. W. will indicate that the upper strata of Clouds travel with a  
2, W. extreme velocity from S.W., and those in the lower regions from W., with one-third the speed of the former. Again, in the second  
4, S.E. column, 4, S.E. will indicate that the lower strata of clouds travel with a

Cloud column, an entry of  $2_{-}$   $\text{cm-st.}$  will indicate that the higher regions are covered to the amount of 4-tenths with stratus Clouds and that the sky is further observed to the extent of 2-tenths by lower Clouds of the cumulo stratus kind.

Remarks preceding, accompanied with drawings, will be essential to the description of any exact nonmeteorological observations, 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 the proper

Sunshine

As the germination and growth of crops and plants generally depend greatly on the temperature of the soil—it is important to know the temperature of the soil—its amount and constancy,—the Council recommend that Thermometers be used in the following manner in the undergrounds.

Observations in this interesting department be made at 9 A.M., by Thermometers permanently fixed in the soil, the bulbs being sunk to depths of 3, 12, and 22 inches, and the stems above ground protected from the sun's rays, and fitted with sloping tin collars, to prevent rain-water being conveyed to the bulbs by the stems or wooden frames.

A knowledge of the relative importance of the sea for not only its own but in its relations to that of our island, a most important branch of Meteorology. The General Director of the Department of the Interior, Mr. J. A. M. de Meijer, has been good enough to forward me a report of the results of a voyage undertaken by the *Albatros* in 1891, and to request that I should carefully take by a properly constructed apparatus, from boats, if this be impracticable from the use of ships and rocks, the temperature of the air, the surface of the sea, and the clouds, where it is not determined by that of the air, and that I should influence it as possible by current sweeping along the coast, a third of the distance from the coast, and that I should ascertain the amount of nocturnal radiation. And at nearly a time of high or cooled by nocturnal radiation.

acquiring the temperature of the land, either greatly heated by the sun or cooled by nocturnal radiation. At or near the time of high

BOOK POST.

NBURGH.

[illegible][illegible][illegible]

	Fruit Ripe, generally.
Cuckoo	
Cutlew	
Houset-	
Lapwing	
Plover,	
Sand-piper	
Starling	
Swan,	
Rail or	

[illegible][illegible]

	First in	Apple	
	Blossom.	Black	
		Germ,	
		Goose-	
		Peach,	
		Pear,	
		Rum,	
		Straw	

[illegible]

SHRUBS, ETC.

.....	cherry,
.....	nurtree or Elder,
.....	oom,
.....	nel,
.....	horn,
.....	illy,
.....	briam,
.....	lag,
.....	erecom,
.....	ountain Ash or Row-
.....	d Flowering Currant
.....	odendron Pontic
.....	hin,

Have the goodness  
to send me some  
Fruit, etc.,  
for my  
disease prev

Ba
Bc
Br
Ha
Ha
Ho
La
Li
M
M
Re
Rh
W

SHRUBS, ETC.		First in Blossom.	FRUITS.	First in Blossom.	First Ripe Generally.	MIGRATORY BIRDS.		First Arrival.	Departure.
Barberry.	.	.	Apple.	.	Chickadee.				
Bourtree or Elder.	.	.	Black Currant.	.	Catbird.				
Broom.	.	.	Cherry.	.	House-Swallow.				
Hazel.	.	.	Grape.	.	Lapwing.				
Hawthorn.	.	.	Gooseberry.	.	Plover.				
Holly.	.	.	Peach.	.	Sand-Martin.				
Laburnum.	.	.	Pear.	.	Starling.				
Lilac.	.	.	Pine.	.	Swan.				
Myrtle.	.	.	Strawberry.	.	Rail or Corn Crane.				
Mountain Ash or Rowan.	.	.							
Red Flowering Currant.	.	.							
Rhododendron Ponticum.	.	.							
Whin.	.	.							

OBSERVATIONS IN CONNECTION WITH THE PERIODICAL RETURN OF THE SEASONS.

**Hygrometer.** The approved form of this apparatus seriously requires re-examination. Observations are specially required in connection with the Hygrometer. The bulb must hang down to attend to the following conditions.—The bulbs must hang down by at least an inch free from the scales and frame to which they are attached; the frame must be such as will bring the tubes forward to an inch from any board on which it may be suspended; the water-pipe must be covered, and altogether placed to the side, and a little below the level of the wet bulb, but in no case under the bulb; the muslin must be of medium fineness, and fastened at the neck of the bulb by the cotton, which also supplies it with water; the muslin is seen by the Observer that the muslin is always clean and moist, and the water pure. In frosty weather, salt cake. The bulb must be much delicate, and must be from 15 to 30 minutes before the hour of observation. From the film of ice thus formed evaporation will be molested by. From the film of ice thus formed evaporation will proceed as from the moist cloth in ordinary circumstances.

In reading the Thermometer great care must be taken to bring the eye exactly opposite the top of the index or column of mercury. The reading ought to be taken to tenths of a degree, and noted in decimals. Thus the Thermometer will be read— $39^{\circ}.3$ ,  $40^{\circ}.0$ , or  $40^{\circ}.1$ ; or again,  $40^{\circ}.4$ ,  $40^{\circ}.6$ , according as it indicates a little under, an exact coincidence with, or a little over  $40^{\circ}$ , or  $40^{\circ}.5$ , respectively. So also  $40^{\circ}.1$ , or  $40^{\circ}.2$ , more or less, must be registered  $40^{\circ}.2$ , or  $40^{\circ}.3$ , and  $40^{\circ}.7$ , 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 heated and rapidly, read, inasmuch as they are readily affected by heat from the person of the Observer.

The Hygrometer is read at 9 A.M. and 9 P.M. The Self-Registering Thermometers are read at 9 P.M. only, as, in winter, the greatest and least degrees of temperature are reached in the 24 hours preceding. If the thermometer be so indifferently when the Self-Registering Thermometers are read, and its writer at least, the scales, or even the index, may be so far from in winter to alter, the extremes may vary at any hour; and it is necessary to note the extremes, and their proper meteorological position. In the Self-Register's, the indications registered on the 24 and extending till 9 P.M. on the 3d.

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

In selecting instruments, the following points require attention.—The divisions of the vernier of Barometers in reference to their scales, and the perfect freedom of the Barometer-scale from



## SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *Gordon's College, Aberdeen*, County of *Aberdeen*, in Lat. *57° 9' N*, Long. *2° 6' W*, Distance from Sea *1* miles.Height of Cistern of the Barometer above Mean Sea-Level *66* feet, above Ground *23* feet.During the MONTH of *February* 1893.

The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				Rain.	WIND.				CLOUDS.				SUNSHINE.	THERMOMETERS under Ground.			SEA.	OZONE.	GENERAL REMARKS.  As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc.  <i>Mention the hour at which Storms, including Thunder and Lightning, began and ended.</i>	Days of Month.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.			No. of hours in which it fell.	Amount in inches.	9 h. A.M.		9 h. P.M.		Readings of the H. Cup Anemometer. No.	9 h. A.M.		9 h. P.M.	Velocity (0-10), and Direction.	Amount (0-10), and Species.					Velocity (0-10), and Direction.	Amount (0-10), and Species.	No.	9 inches.	No. 12 inches.	No. 22 inches.	Temperature of WELL at depth of feet, 20.	Temperature of surface, and depth.	0-10.	9 A.M.	9 P.M.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		Barometer.	Attached Thermometer.	Barometer.	Attached Thermometer.	Max.	Min.	Max. in Sun's rays.	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.				Direction.	Force.	Direction.	Force.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
		* No.		No.		No.	No.	No.	No.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction  $\ddagger$  = *29.432*  
for Temp. (Col. 2), = *29.473* - *0.041* = *29.432*  
"Corrected Mean" of Barometer at 9 P.M., minus the Correction  $\ddagger$  = *29.454*  
for Temp. (Col. 4), = *29.493* - *0.039* = *29.454*  
Mean at Station, corrected, and at 32°, = *29.443*  
Correction for height, *66* feet above Mean Sea-Level, = *0.074*  
Mean, reduced to 32°, and Sea-level, = *29.517*  
Highest Reading, corrected for Index error, on the th, = *30.204*  
Lowest Do. Do., on the th, = *28.732*  
Difference, or Monthly Range, = *1.472*

S.R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the th, = *24.3*  
Lowest in Month, corrected for Index errors, on the th, = *25.1*  
Difference, or Monthly Range, = *29.2*  
"Corrected Mean" of all the Highest, (Col. 5), = *42.1*  
"Corrected Mean" of all the Lowest, (Col. 6), = *33.3*  
Difference, or Mean Daily Range, = *8.8*  
\*\* Calculated Mean Temperature of Month, = *37.7*  
S.R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the th, =  
"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, =  
Lowest at Night, Black Bulb (corrected for Index errors), on the th, =  
"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, =  
Difference of above means or range ("exposed"), =

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = *37.6*

Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = *35.9*  
Computed Temperature of Dew-Point, = *33.6*  
Do. Elastic Force of Vapour, = *1.93*  
Do. Weight of Vapour in a Cubic Foot of Air, = *2.22*  
Relative Humidity (Saturation = 100), = *86*  
RAIN fell on *19* Days; Amount in Inches, = *2.46*

WIND.									SUMMARY.			
Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.	
A.M.	2	1	2	1	5	8	3	6		1.0		
P.M.	3		2	2	8	4	3	6		1.1		
Mean.	2	1	2	1	7	6	3	6	0	1.05	1.10	

Observations made and Return verified by *James Dale, Teacher in Robert Gordon's College, Aberdeen*

(Signed) *Greatest Daily Range = 17.8 on the 19th*

*W.D.S.*







# SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Gordon's College, Abdu, County of Aberdeen, in Lat. 57° 9' N, Long. 2° 6' W, Distance from Sea 1 miles.

Height of Cistern of the Barometer above Mean Sea-Level 66 feet, above Ground 2 1/2 feet.

During the MONTH of March 1893.

The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				Rain.		WIND.				CLOUDS.				THERMOMETERS under Ground.			SEA.	OZONE.	GENERAL REMARKS.  As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc.  Mention the hour at which Storms, including Thunder and Lightning, began and ended.	Days of Month.		
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.		No. of hours in which it fell.	Amount in inches.	9 h. A.M.		9 h. P.M.		9 A.M.		P.M.		No. 8 inches.	No. 12 inches.	No. 22 inches.						
		Barometer. * No.	Attached Ther- mometer.	Barometer. No.	Attached 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.	Velocity (0-10), and Species.	No.	Velocity (0-10), and Species.								No.	Velocity (0-10), and Species.
		inches.	°	inches.	°	°	°	°	°	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.																			
	1	29.470	42.0	29.240	40.0	39.0	30.1			34.4	32.2	36.1	35.2			S.E.	1	S.E.	1	10	St.	10	St.							1		
	2	29.644	42.0	30.070	41.0	38.7	35.6			37.1	34.7	36.0	35.7			N.W.	1	N.W.		10	St.	1	Cl.	6							2	
	3	30.146	42.0	29.810	44.0	41.2	28.1			37.3	36.2	35.4	34.6			S.	1	S.	1 1/2	3	Cl.	10	St.								3	
	4	29.708	50.0	29.748	47.0	51.2	40.2			36.3	33.0	40.8	40.2			W.	1	W.	1	1	Cl.										4	
	5	29.930	48.0	30.068	47.0	53.7	43.1			48.3	42.7	45.1	41.3			N.W.	1 1/2	N.W.	1	4	Cl.	5	St.								5	
	6	30.040	47.5	30.060	48.0	54.2	41.0			49.5	47.2	46.4	44.0			S.	1/2	S.		10	St.	2	St.	4							6	
	7	29.918	52.5	30.020	53.0	59.8	43.1			43.2	42.0	45.1	41.0			S.W.	1/2	N.W.	2	6	Cl.	5	St.	7							7	
	8	30.144	49.0	29.998	50.0	53.6	43.0			52.8	49.1	47.0	40.3			N.W.	1 1/2	N.W.	1/2	1	St.	10	St.	6							8	
	9	29.748	51.0	29.726	50.0	53.8	40.6			45.0	40.5	48.0	42.1			W.	1/2	N.W.	2	9	St.	1	St.	6							9	
	10	29.902	47.0	30.120	45.0	45.2	36.1			49.2	44.7	40.8	34.0			N.	2	N.	1 1/2	10	Cl.										10	
	11	29.748	48.5	29.690	49.0	49.9	42.3			40.1	35.7	39.0	35.4			S.W.	1 1/2	S.W.	1/2	10	Cl.											11
	12	29.580	47.0	29.356	48.0	48.2	43.2			45.2	42.1	45.4	43.0			S.W.	1	W.	2	10	Cl.											12
	13	29.488	47.0	29.580	47.5	50.0	37.7			44.8	43.1	45.4	44.0			S.W.	1/2	S.W.	1	1	St.	10	Cl.									13
	14	29.344	48.0	29.248	50.0	51.2	37.8			41.8	36.9	41.7	37.8			S.W.	1	S.W.	1 1/2	10	Cl.											14
	15	29.158	51.0	29.248	46.0	50.0	38.0			41.3	39.0	47.2	44.1			W.	2	N.W.	1 1/2	2	Cl.											15
	16	29.184	46.0	29.310	41.5	43.4	30.9			48.0	41.1	38.3	33.2			N.W.	2	N.W.	1	1	Cl.	1	St.									16
	17	29.580	42.0	29.856	40.0	38.3	29.1			36.1	31.0	30.9	28.1			N.W.	1	N.W.	1	1	St.	2	Cl.									17
	18	30.056	45.0	30.280	43.0	37.8	25.6			33.8	30.0	30.0	29.0			N.	1	N.	1	2	Cl.	1	Cl.									18
	19	30.234	44.5	30.202	46.2	56.0	30.0			33.2	31.8	31.0	30.8			N.W.	1	W.	1/2	5	Cl.	6	Cl.									19
	20	30.240	47.0	30.220	46.0	59.0	34.8			40.5	37.2	44.1	41.0			W.	1/2	W.	1/2	4	Cl.											20
	21	30.208	48.0	30.200	49.0	61.4	36.1			45.2	42.0	42.0	41.1			W.	1/2	S.W.	1/2	1	St.	1	St.									21
	22	30.164	47.0	30.158	51.5	62.5	36.0			46.0	41.6	45.1	41.0			S.		S.E.	1/2	2	St.	2	St.									22
	23	30.186	48.0	30.180	47.0	59.1	34.0			41.0	38.1	47.1	42.2			S.	1/2	N.E.				1	St.									23
	24	30.286	48.0	30.352	53.0	61.0	34.6			41.3	38.0	40.1	39.0			S.	1/2	S.	1/2	3	Cl.	1	St.									24
	25	30.364	54.0	30.346	52.0	64.1	33.8			40.8	38.0	45.6	41.0			S.	1/2	W.	1	1	St.	1	St.									25
	26	30.314	49.0	30.310	47.0	56.8	41.6			55.2	49.0	48.1	44.0			N.W.	1	N.E.	1	2	Cl.	10	St.									26
	27	30.318	50.0	30.308	45.0	43.2	40.0			51.2	47.1	42.9	41.3			W.	1	S.E.	1	10	St.	10	Cl.									27
	28	30.300	48.0	30.158	47.0	47.1	34.0			41.8	40.1	40.8	38.8			S.E.	1/2	S.	1	1	St.	2	Cl.									28
	29	30.064	46.5	29.870	50.0	49.8	30.2			40.1	38.0	37.9	37.0			S.	1/2	S.	1/2	10	St.	6	Cl.									29
	30	29.788	51.0	29.668	51.5	58.3	41.1			38.0	37.1	46.1	41.2			S.	1/2	S.W.	1/2	5	Cl.	10	St.									30
	31	29.546	50.0	29.672	51.0	57.0	41.0			49.2	44.3	49.1	44.2			S.W.	1	S.W.	1	10	Cl.	10	Cl.									31
Sums.		12 14 15 2		11 14 10	12 2	16 10 11 3				13 9	4 6	15 10	11 5			0.69				15 5	12 1	18 9										
Means.		29.850 147 65		29.972 146 62	159 45 113 41					133 67	132 29	131 23	122 51							28	27 5											
+ Total Corrections for Instrumental Errors.		29.898 47.6		29.902 47.3	51.4 36.6					43.1 32.8	42.3	39.2				0.9				0.9												
+ Corrections for Diurnal Range.		+006 -7		+006 -7												0.6																
"Corrected Means."		29.904 48.9		29.908 48.6																												
No. of Column.		1		3		4		5		6		7		8		9		10		11		12		13		14		15		16		

NOTATION USED IN GENERAL REMARKS.

a.	denotes aurora.	m.	denotes meteor.
ci.	cirrus.	ms.	meteors.
ci.-cu.	cirro-cumulus.	n.	nimbus.
ci.-s.	cirro-stratus.	r.	rain.
cu.	cumulus.	li. r.	heavy rain.
cu.-s.	cumulo-stratus.	c. h. r.	continued heavy rain.
d.	dew.	s.	stratus.
f.	fog.	sc.	scud.
fr.	frost.	s.	sleet.
h.-fr.	hoar-frost.	s.	snow.
h.	haze.	so. ha.	solar halo.
h. d.	heavy dew.	sq.	squall.
l.	hall.	sq.s.	squalls.
li.	lightning.	t.	thunder.
li. cl.	light clouds.	t. s.	thunder-storm.
li. sh.	light showers.	w.	wind.
lu. co.	lunar coron.	g.	gale of wind.
lu. ha.	lunar halo.		

TABLE FOR ESTIMATING FORCE OF WIND.

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

## NOTATION USED IN GENERAL REMARKS.

a.	aurora.	m.	meteors.
ci.	cirrus.	ms.	micrometeors.
ci.-cu.	cirro-cumulus.	n.	nimbus.
cl.-s.	cirro-stratus.	r.	rain.
cu.	cumulus.	h. r.	heavy rain.
cu.-s.	cumulo-stratus.	c. h. r.	continued heavy rain.
d.	dew.	s.	stratus.
f.	fog.	sc.	scud.
fr.	frost.	s.	sleet.
h.-fr.	hoar-frost.	s.	snow.
h.	haze.	so. ha.	solar halo.
h. d.	heavy dew.	sq.	squall.
hl.	hail.	sq.	squalls.
l.	lightning.	t.	thunder.
li. cl.	light clouds.	t. s.	thunder-storm.
li. sh.	light showers.	w.	wind.
lu. co.	lunar corona.	g.	gale of wind.
lu. ha.	lunar halo.		

## TABLE FOR ESTIMATING FORCE OF WIND.

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

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction  $\ddagger$  = 29.854  
 for Temp. (Col. 2), = 29.904 0.050  
 "Corrected Mean" of Barometer at 9 P.M., minus the Correction  $\ddagger$  = 29.859  
 for Temp. (Col. 4), = 29.908 0.049  
 Mean at Station, corrected, and at 32°, = 29.856  
 Correction for height, 66 feet above Mean Sea-level, = 0.074  
 Mean, reduced to 32°, and Sea-level, = 29.930  
 Highest Reading, corrected for Index error, on the 25th, = 30.370  
 Lowest Do. Do., on the 15th, = 29.164  
 Difference, or Monthly Range, = 1.206

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 25th, = 64.1  
 Lowest in Month, corrected for Index errors, on the 18th, = 25.6  
 Difference, or Monthly Range, = 38.5  
 "Corrected Mean" of all the Highest, (Col. 5), = 51.4  
 "Corrected Mean" of all the Lowest, (Col. 6), = 36.6  
 Difference, or Mean Daily Range, = 14.8  
 \*\* Calculated Mean Temperature of Month, = 44.0  
 S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the th, =  
 "Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, =  
 Lowest at Night, Black Bulb (corrected for Index errors), on the th, =  
 "Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, =  
 Difference of above means or range ("exposed"), =

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 42.7  
 Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 39.5  
 # Computed Temperature of Dew-Point, = 35.6  
 # Do. Elastic Force of Vapour, = .209  
 # Do. Weight of Vapour in a Cubic Foot of Air, = .243  
 # Relative Humidity (Saturation = 100), = 77  
 RAIN fell on // Days; Amount in Inches, = 0.69

WIND.	SUMMARY.									
	Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.
A.M.		2	0	1	2	8	6	5	7	0
P.M.		2	2	0	3	5	6	4	8	0
Mean.		2	1	1	2	7	6	5	7	0

Observations made and Return verified by James Dale, Teacher in  
Robert Gordon's College, Abdu

(Signed)

Greatest Daily Range  
 = 28.3 on the 25th

DR



Aberdeen  
March 1893.

Other instruments of the same kind as they are more liable to error than aneroid barometers. The frame-work of every instrument must be so constructed as to ensure its exposure to the weather, as also the necessity of being exposed according to the directions of the Meteorological Commission; and as regards the construction of thermometers of English make, such as those of Mr. Rankin, Messrs. Thomson, and Messrs. James Clerk Maxwell, and Phillips's, it is difficult to say which is the best. As regards the use of thermometers, they ought to be placed at the highest convenient place, may be referred to by the name of the Society, and may be used in connection with the system of thickly-planted Stations over a limited district round Edinburgh called STORM STATIONS, in accordance with the plan proposed by the Society for the systematic investigation of the relation of the force of the wind to BAROMETRIC VARIATIONS, and other points connected with storms.

The Council would recommend the Hemispherical Cup Anemometer, a self-registering instrument which shows the amount of Wind that passes it per day; from which also the mean Velocity of the Wind at the time of observation may be ascertained. For indicating the Force of the Wind at any particular hour of observation, the Pressure Barometer is preferable to the Aneroid Barometer. The Society's Observer at Falklands, has recommended as well 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 unobscured situation for observation, and partly from the defective nature of the instruments used. The Rain Gauge should not be placed on a slope or terrace, but on a level piece of ground, in as open a situation as the Observer can procure for it. As it is often difficult to obtain a perfect exposure, as free and unobstructed by surrounding objects as is desirable, bases should be taken to place it at some distance from shrubs, trees, buildings, or other obstructions; at least as many feet from their base as they are in height. The more important directions towards which it is most desirable to have a prospect are S.W., N.E., and W. The other of the gauges must be partially level, and be at a height of one foot above the ground, over grass. It is suggested that the gauges be furnished with a measuring glass, which will rise to its height only at the time the instrument is used; it may be found that a stop projecting above the rim of the glass will seriously interfere 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 as the previous day. If the Gauge is read once a month, the Readings to be made on the first of the month, and the amount entered for the previous month. Snow-falls may, for convenience, be registered in the rain columns, under the following conditions:—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 on, the indications of the Rain Gauge. For wind, rain, and snow, as indicated in every column, the Observer cannot be too careful to register observations only; and nothing that partakes of the nature of deduction or inference.

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

Observations of the Clouds are made at 9 A.M. and at sunset, illustrating the condition and currents of the upper and lower regions of the atmosphere. The entries in the schedule are to be made in the following manner:—Thus, in the column Velocity and Direction, 6, S. W. will indicate that the upper strata of Clouds travel with extreme velocity from S.W., and those in the lower regions from W., with one-third the speed of the former. Again, in the second Column column, an entry of 2, east- will indicate that the higher regions are covered to the amount of 2-tenths with striatus Clouds; and that the sky is further obscured to the extent of 2-tenths by lower Clouds of the same kind.

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

The approximate number of flocs in which objects in the sky present rays cast shadows, should be entered in the proper sunshine column.

As the germination and growth of crops and plants generally depend greatly on the Temperature of the soil,—this amount and constancy—the Council recommend that Thermometers be placed in the garden, and in the fore-recesses of the house, to ascertain the temperature of the soil at 9 A.M.; by Thermometers permanently fixed in the soil, their bulbs being sunk to depths of 3, 12, and 22 inches, and the stems above ground protected from the sun's rays, and fitted with sloping tin collars, to prevent min-water being conveyed to the bulbs by the stems or wooden frames.

A knowledge of the Temperature of the Sea is not only in itself, but in its relations to that of our island, a most important branch of Meteorology. The Council therefore recommend that the Temperature of the Sea be carefully taken by a properly constructed apparatus, from boats, or, if this be impracticable, from the ends of pier-head 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

SHRUBS, ETC.		FRUITS.		MIGRATORY BIRDS.		FIRST ARRIVAL.		DEPARTURE.	
First in Blossom.		Apples.		First in Fruit Ripening generally.		Cuckoo.		First in Arrival.	
Barberry.									
Bourtree or Elder.		Black Currant.				Catlet.			
Broom.		Cherry.				House-Swallow.			
Hazel.		Gamp.				Lapwing.			
Hawthorn.		Gooseberry.				Plover.			
Holly.		Peach.				Sand-Martin.			
Laburnum.		Pear.				Starling.			
Lilac.		Plum.				Swan.			
Mezereon.		Strawberry.				Rail or Corn Crane.			
Mountain Ash or Rowan.									
Red Flowering Currant.									
Rhododendron Ponticum.									
Winn.									

Have the goodness also to state any information you may be able to collect relative to the Crops of Grain, Hay, Potatoes, Turnips, &c., whether plentiful, or in perfection; whether any have suffered from blight, or from any other disease; and the Agricultural condition of the district generally.

Aberdeen  
March 1893.


SHRUBS, ETC.		FRUITS.		MIGRATORY BIRDS.		FIRST ARRIVAL.		DEPARTURE.	
First in Blossom.		Apples.		First in Fruit Ripening generally.		Cuckoo.		First in Arrival.	
Barberry.									
Bourtree or Elder.		Black Currant.				Cuckoo.			
Broom.		Cherry.				Curtlew.			
Hazel.		Gamp.				Lapwing.			
Hawthorn.		Gooseberry.				Plover.			
Holly.		Peach.				Sand-Martin.			
Laburnum.		Pear.				Starling.			
Lilac.		Plum.				Swan.			
Mezereon.		Strawberry.				Rail or Corn Crane.			
Mountain Ash or Rowan.									
Red Flowering Currant.									
Rhododendron Ponticum.									
Whin.									

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., and the Agricultural condition of the district generally.

Excessive disease prevails among cattle; and the Agricultural condition of the district generally.

To the SECRETARY

3





## SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *Robert Gordon's College*, County of *Aberdeen*, in Lat. *57° 9' N* Long. *2° 6' W*, Distance from Sea *1* mile.Height of Cistern of the Barometer above Mean Sea-Level *66* feet, above Ground *22* feet.During the MONTH of *April* 189*3*.

The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				Rain.	WIND.				CLOUDS.				THERMOMETERS under Ground.			SEA.	OZONE.	GENERAL REMARKS.  As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc.  Mention the hour at which Storms, including Thunder and Lightning, began and ended.	Days of Month.		
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.			9 h. A.M.		9 h. P.M.		9 A.M.		P.M.		9 h. A.M.								
		Barometer.	Attached Ther- mometer	Barometer.	Attached Ther- mometer	Max.	Min.	Max. in Sun's rays	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.		Direction.	Force.	Direction.	Force.	Velocity (0-10), and Direction.	Amount (0-10), and Species.	Velocity (0-10), and Direction.	Amount (0-10), and Species.	No. 3 inches.	No. 12 inches.	No. 22 inches.						
		* No.	inches.	No.	°	No.	°	No.	°	No.	°	No.	°		No.	°	No.	°	No.	°	No.	°	No.	°	No.					°	
		inches.	°	inches.	°	°	°	°	°	°	°	°	°		°	°	°	°	°	°	°	°	°	°	°					°	
	1	29.852	50.0	29.960	48.0	52.1	42.0			49.8	42.4	42.2	38.0	—	W	1	W	1		8	ci-st	8	ci-cu	6						1	
	2	30.058	51.0	30.034	51.5	57.0	35.1			50.7	43.1	49.2	42.6	.02	S.W.	1/2	W	1/2	1	3	ci-cu	10	ci-st	4						2	
	3	30.108	50.0	30.202	52.6	61.2	45.8			56.6	48.5	46.1	43.1	—	W	1	W	—	2	10	ci-st	10	st	4						3	
	4	30.258	54.0	30.206	51.0	54.2	36.0			53.2	46.2	41.8	40.9	—	S	1/2	S	1/2	3	10	ci-st	10	st	4						4	
	5	30.190	52.0	30.198	50.0	53.4	38.6			50.2	46.1	44.2	42.1	—	S	1	S.E.	1	4	2	st	—	—	9						5	
	6	30.220	51.0	30.307	45.0	52.2	38.6			47.2	44.4	41.0	40.6	.01	S	1/2	S.E.	1/2	5	2	ci-st	3	st	10						6	
	7	30.428	45.0	30.522	47.5	47.6	39.8			41.6	40.0	45.1	43.2	—	N	1	N	1	6	2	ci-st	10	st	6						7	
	8	30.600	52.0	30.580	50.0	52.8	40.6			49.2	43.4	40.2	39.9	—	N.E.	1/2	N.E.	—	7	10	st	10	st	—						8	
	9	30.420	50.0	30.290	50.0	50.1	30.0			47.5	43.2	46.2	40.1	—	S.W.	1	W	1	9	1	ci	—	—	12						9	
	10	30.372	50.0	30.378	47.0	48.1	40.6			46.2	43.0	41.2	39.6	.02	N	1	N	1 1/2	10	st	10	st	—							10	
	11	30.442	45.0	30.390	47.0	46.8	37.0			41.0	39.1	38.0	36.1	—	N.W.	1/2	S.E.	1/2	10	st	2	st	3							11	
	12	30.332	49.0	30.318	46.5	53.1	31.8			45.2	40.2	39.6	37.2	.02	W.	1	N.W.	1	2	st	3	cu	8							12	
	13	30.350	47.5	30.260	47.0	48.0	36.1			41.1	37.8	38.9	36.0	—	N	1/2	N	1	10	ci-st	1	st	6							13	
	14	30.140	47.5	30.008	51.0	59.0	32.4			45.1	41.3	46.2	43.4	—	W	1	W	1	3	ci	4	ci-cu	8							14	
	15	29.848	52.0	30.040	50.0	59.2	40.0			53.7	46.8	40.2	38.0	.06	W	1 1/2	N	1	10	ci-st	10	ci-st	4							15	
	16	30.186	52.0	30.232	47.0	47.2	36.5			48.2	39.6	37.2	34.1	—	N	1	E	1/2	10	st	10	ci-st	—							16	
	17	30.280	46.0	30.080	45.0	41.0	35.6			38.2	34.5	41.6	38.3	.12	N.E.	1	W	—	10	ci-st	10	ci-st	—							17	
	18	29.910	45.0	29.556	52.0	50.2	40.6			44.8	40.0	50.2	49.2	.18	S.W.	1	S.W.	1/2	10	st	10	ci-st	2							18	
	19	29.890	53.0	29.950	53.5	62.5	48.0			52.2	50.1	52.8	49.1	—	S.W.	1	S.W.	1/2	10	ci-st	—	—	6							19	
	20	29.990	52.0	30.180	51.0	62.1	45.4			56.0	51.4	46.2	45.0	.08	S.W.	—	N	1	3	st	10	st	6							20	
	21	30.288	52.0	30.232	47.0	52.8	42.0			49.8	46.0	42.0	40.2	—	W.	1	S.W.	1/2	4	ci	1	st	7							21	
	22	30.210	50.0	30.244	49.0	53.6	41.1			49.7	45.3	43.2	40.2	—	S	1 1/2	N	1	1	st	—	—	13							22	
	23	30.282	51.0	30.162	50.0	53.2	40.0			50.1	44.6	45.2	43.0	—	S.E.	1/2	S	—	2	ci	—	—	13							23	
	24	30.120	52.5	30.094	50.0	62.4	38.1			52.3	49.6	48.6	44.2	—	S	1/2	S.E.	1/2	1	st	2	st	12							24	
	25	30.140	52.0	30.128	53.0	57.0	41.6			49.0	47.2	50.0	48.1	—	N.W.	1	N	—	9	ci-cu	—	—	7							25	
	26	30.078	52.0	30.004	53.0	56.9	45.5			51.1	49.2	47.1	46.0	.03	N	1/2	S	1/2	10	st	2	st	6							26	
	27	29.996	52.0	29.876	50.5	56.9	44.2			52.4	48.8	46.8	45.7	.09	S	1/2	S	1/2	6	ci-cu	10	cu	9							27	
	28	29.932	53.0	29.844	50.5	53.1	43.2			51.2	46.0	43.2	40.1	.03	N.W.	1	S	1	5	cu	6	ci-cu	6							28	
	29	29.578	52.0	29.652	57.0	52.0	40.0			50.1	45.2	41.7	40.0	.12	S	1	N	1	9	ci-st	8	cu	4							29	
	30	29.678	51.0	29.804	50.5	54.2	38.0			49.8	45.2	40.2	38.1	.07	N.W.	1	N.W.	1/2	7	cu	1	st	7							30	
	31																														31
Sums.		1315.4	325	1114.4	43	127	126			1310	1182	1271	1145	4	4	250	195		181	161	189										
Means.		30.138	51.1	30.134	49.6	53.6	39.4			48.6	44.3	43.7	41.4			0.83	0.65		6.0	5.4	6.3										
+ Total Corrections for Instrumental Errors.		+0.06	-7	+0.06	-7											0.6	0.6														
+ Corrections for Diurnal Range.																															
"Corrected Means."																															
No. of Column.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

NOTATION USED IN GENERAL REMARKS.					
a.	denotes aurora.	m.	denotes meteor.		
ci.	" cirrus.	ms.	" nimbus.		
ci-cu.	" cirro-cumulus.	n.	" nimbus.		
ci-s.	" cirro-stratus.	r.	" rain.		
cu.	" cumulus.	h. r.	" heavy rain.		
cu-s.	" cumulo-stratus.	c. h. r.	" continued heavy rain.		
d.	" dew.	s.	" stratus.		
f.	" fog.	sc.	" squall.		
fr.	" frost.	s.	" sleet.		
h.-fr.	" hoar-frost.	s.	" snow.		
h.	" haze.	so. ha.	" solar halo.		
h. d.	" heavy dew.	sq.	" squall.		
hl.	" hail.	sgs.	" squalls.		
l.	" lightning.	t.	" thunder.		
li. cl.	" light clouds.	t. s.	" thunder-storm.		
li. sh.	" light showers.	w.	" wind.		
lu. co.	" lunar corona.	g.	" gale of wind.		
lu. ha.	" lunar halo.				

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

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction  $\frac{1}{100}$  = *30.085*  
for Temp. (Col. 2), = *30.144*.....*059*  
"Corrected Mean" of Barometer at 9 P.M., minus the Correction  $\frac{1}{100}$  = *30.085*  
for Temp. (Col. 4), = *30.140*.....*55*  
Mean at Station, corrected, and at 32°, ..... = *30.085*  
Correction for height, feet above Mean Sea-level, ..... = *73*  
Mean, reduced to 32°, and Sea-level, ..... = *30.158*  
Highest Reading, corrected for Index error, on the 8<sup>th</sup>, ..... = *30.600*  
Lowest Do. Do., on the 29<sup>th</sup>, ..... = *29.578*  
Difference, or Monthly Range, ..... = *1.052*

S.R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 19<sup>th</sup>, ..... = *62.5*  
Lowest in Month, corrected for Index errors, on the 9<sup>th</sup>, ..... = *30.0*  
Difference, or Monthly Range, ..... = *32.5*  
"Corrected Mean" of all the Highest, (Col. 5), ..... = *53.6*  
"Corrected Mean" of all the Lowest, (Col. 6), ..... = *39.4*  
Difference, or Mean Daily Range, ..... = *14.2*  
\*\* Calculated Mean Temperature of Month, ..... = *46.5*  
S.R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 19<sup>th</sup>, ..... =  
"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, ..... =  
Lowest at Night, Black Bulb (corrected for Index errors), on the 19<sup>th</sup>, ..... =  
"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, ..... =  
Difference of above means or range ("exposed"), ..... =

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), ..... = *46.2*  
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), ..... = *42.8*  
Computed Temperature of Dew-Point, ..... = *39.0*  
Do. Elastic Force of Vapour, ..... = *2.38*  
Do. Weight of Vapour in a Cubic Foot of Air, ..... = *2.74*  
Relative Humidity (Saturation = 100), ..... = *77*  
RAIN fell on 13 Days; Amount in Inches, ..... = *0.79*

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

*0.55*Observations made and  
Return verified by*James Dale, Teacher in*  
*Robert Gordon's College, Aberdeen*

(Signed)







# SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Gordon's College, Abdu, County of Aberdeen, in Lat. 57° 9' N, Long. 2° 6' W, Distance from Sea 1 miles.

Height of Cistern of the Barometer above Mean Sea-Level 66 feet, above Ground 2 1/2 feet.

During the MONTH of May 1893.

The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				Rain.	WIND.				CLOUDS.				SUNSHINE. Hours.	THERMOMETERS under Ground.			SEA.	OZONE.  0-10.	GENERAL REMARKS.  As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc.  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.	Attached Thermometer.	Barometer. No.	Attached Thermometer.	Max. No.	Min. No.	Max. in Sun rays.	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.		Direction.	Force.	Direction.	Force.	Velocity (0-10), and Direction.	Amount (0-10), and Species.	Velocity (0-10), and Direction.	Amount (0-10), and Species.		No. 1 inches.	No. 2 inches.	No. 3 inches.							
		* No.				No.	No.	No.	No.	No.	No.	No.	No.		No.	No.	No.	No.	No.	No.	No.	No.		No.	No.	No.						No.	
		inches.	°	inches.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	
	1	29.836	51.5	29.860	47.5	52.0	34.7			47.8	43.4	41.0	39.2	.09	S	1	N.W.	1	8	cu	9	cu	2									1	
	2	29.886	49.0	29.910	48.0	47.3	34.0			45.8	41.8	43.1	42.0	.06	N.E.	1	N.W.	1	6	ci-cu	10	st	4									2	
	3	30.052	50.5	30.210	49.0	45.0	44.6			44.4	40.0	45.0	42.2	.12	S	1/2	S	—	10	st	10	st	—									3	
	4	30.196	50.0	30.324	48.0	53.2	44.1			46.8	45.3	45.0	44.2	.01	S	1/2	S	1	10	st	10	st	1									4	
	5	30.388	51.0	30.404	48.0	47.2	43.4			45.9	44.0	44.1	43.0	—	S	1/2	S	1/2	10	st	10	st	1									5	
	6	30.390	49.0	30.420	48.0	48.1	42.4			46.7	44.8	44.8	43.2	—	S	1	S	1	10	cu	10	st	2									6	
	7	30.508	50.0	30.570	50.5	53.2	42.6			47.2	42.1	45.7	44.0	—	S.E.	1	S.E.	1 1/2	1	st	10	st	8									7	
	8	30.596	52.0	30.546	51.5	57.0	44.0			50.8	47.8	45.5	43.2	—	S.E.	1	S.E.	1/2	2	ci-cu	—	—	13									8	
	9	30.508	52.0	30.464	53.0	64.0	44.6			51.1	49.0	47.8	44.8	—	S	—	S	—	2	st	—	—	14									9	
	10	30.410	60.0	30.810	56.0	62.1	42.2			60.0	52.1	54.0	46.2	.03	S	—	S	1	1	ci	10	st	10									10	
	11	30.190	58.0	30.080	60.0	69.3	50.0			57.1	54.2	58.7	53.8	.22	S	1	S	1	10	st	10	st	4									11	
	12	29.910	56.0	30.002	55.0	60.6	49.1			52.0	52.2	50.2	47.6	.20	N.W.	1/2	W	1	10	Nau	10	st	—									12	
	13	30.096	56.0	30.020	56.0	58.8	48.0			55.8	51.7	49.6	46.8	—	S	1 1/2	S	1	6	cu	10	cu	10									13	
	14	29.990	57.0	30.030	57.0	67.4	48.6			61.2	57.3	49.2	46.3	—	S	1	S	—	9	ci-st	2	ci	12									14	
	15	30.080	54.0	30.014	51.0	49.4	42.3			49.0	46.4	47.1	45.0	—	N.E.	1	S	1/2	10	st	10	st	—									15	
	16	29.920	51.0	29.780	50.0	49.8	45.4			46.8	44.7	45.8	44.0	—	S	1	S.E.	1	10	st	10	cu-st	—									16	
	17	29.708	51.0	29.630	50.0	48.1	44.6			48.1	45.5	47.8	46.2	—	S	1/2	S.E.	1	10	st	10	st	—									17	
	18	29.528	53.0	29.484	53.0	51.0	47.0			49.0	45.3	49.8	47.2	.19	N.E.	1/2	N.E.	1	10	st	10	st	—									18	
	19	29.546	54.0	29.526	53.0	62.3	47.1			52.0	50.2	49.8	47.2	—	S	1	N.E.	1	2	cu	10	cu-st	9									19	
	20	29.512	54.0	29.560	52.0	53.2	48.2			49.7	49.0	49.0	47.4	.05	S.E.	1	S	1/2	10	st	10	st	3									20	
	21	29.626	53.0	29.720	56.0	53.1	47.0			50.1	47.2	49.2	47.0	—	S.E.	1	S.E.	1	8	cu-st	5	ci-st	8									21	
	22	29.780	53.0	29.780	53.0	60.0	45.2			54.1	50.2	50.2	48.6	—	S.E.	1	S.E.	1	5	cu	5	cu	10									22	
	23	29.620	56.0	29.570	57.0	64.1	48.4			52.4	49.2	54.1	49.0	.10	S	1/2	S	1 1/2	10	cu-st	—	—	10									23	
	24	29.604	59.0	29.560	58.0	71.2	48.8			58.0	53.2	54.1	50.2	.06	N.W.	1	N.W.	1 1/2	9	cu	10	st	10									24	
	25	29.804	56.0	30.034	54.0	61.0	49.2			52.4	49.0	49.9	46.0	—	N.W.	1	N.W.	1/2	7	cu-st	8	cu-st	4									25	
	26	30.184	55.0	30.172	56.0	59.8	49.8			53.1	47.9	51.9	49.0	.07	N.W.	1	N.W.	1	10	st	10	cu-st	2									26	
	27	30.202	56.5	30.220	56.0	64.1	49.5			55.2	52.2	51.0	48.3	—	N	1/2	S	1	10	cu-st	10	st	8									27	
	28	30.120	53.5	30.080	56.0	63.8	50.6			54.8	51.3	53.7	53.4	.03	N.W.	1	N.W.	1 1/2	8	cu	10	cu-st	8									28	
	29	30.152	53.5	30.166	54.0	56.0	45.8			47.8	44.3	45.8	42.4	—	N	1	N	1	10	st	10	st	—									29	
	30	30.116	52.0	30.070	53.0	52.2	41.0			46.0	42.2	45.2	44.0	.06	N	1 1/2	N	1	8	cu	10	st	6									30	
	31	30.024	53.4	29.960	54.0	54.6	40.7			49.8	45.0	49.8	48.4	.10	N	1	N	1	10	cu-st	10	st	2									31	
	Sums.	1415.10	179	1235.14	157	2123	1617			1612	149	1812	157	13.3		260		275		242		259		161									
	Means.	30.014	53.8	30.026	53.1	56.8	45.2			51.1	47.8	48.7	46.1		0.84		0.89		7.8		8.4												
	+ Total Corrections for Instrumental Errors.	+0.06	-.7	+0.06	-.7										0.6		0.6																
	+ Corrections for Diurnal Range.																																
	"Corrected Means."																																
	No. of Column.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		

NOTATION USED IN GENERAL REMARKS.			
a.	denotes aurora.	m.	enotes meteor.
ci.	cirrus.	ms.	meteors.
ci-cu.	cirrus-cumulus.	n.	nimbus.
ci-s.	cirrus-stratus.	r.	rain.
cu.	cumulus.	h. r.	heavy rain.
cu-s.	cumulo-stratus.	c. h. r.	continued heavy rain.
d.	dev.	s.	stratus.
f.	fog.	sc.	send.
fr.	frost.	s.	sleet.
h. fr.	hoar-frost.	s.	snow.
h.	haze.	so. ha.	solar halo.
h. d.	heavy dew.	sq.	squall.
h.	hail.	sq.	squalls.
l.	lightning.	t.	thunder.
h. cl.	light clouds.	t. s.	thunder-storm.
h. sh.	light showers.	w.	wind.
lu. co.	lunar corona.	g.	gale of wind.
lu. ha.	lunar halo.		

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

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction  $\frac{1}{10}$  for Temp. (Col. 2), = 30.020 66  
 "Corrected Mean" of Barometer at 9 P.M., minus the Correction  $\frac{1}{10}$  for Temp. (Col. 4), = 30.032 64  
 Mean at Station, corrected, and at 32°, = 29.961  
 Correction for height, feet above Mean Sea-level, = 72  
 Mean, reduced to 32°, and Sea-level, = 30.033  
 Highest Reading, corrected for Index error, on the 8 th, = 30.602  
 Lowest Do. Do., on the 18 th, = 29.490  
 Difference, or Monthly Range, = 1.112

S-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 24 th, = 71.2  
 Lowest in Month, corrected for Index errors, on the 2 th, = 34.0  
 Difference, or Monthly Range, = 37.2  
 "Corrected Mean" of all the Highest, (Col. 5), = 56.8  
 "Corrected Mean" of all the Lowest, (Col. 6), = 45.2  
 Difference, or Mean Daily Range, = 11.6  
 \*\* Calculated Mean Temperature of Month, = 51.0  
 S-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the th, =  
 "Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, =  
 Lowest at Night, Black Bulb (corrected for Index errors), on the th, =  
 "Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, =  
 Difference of above means or range ("exposed"), =

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 49.9  
 Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 47.0  
 \*\* Computed Temperature of Dew-Point, = 43.9  
 \*\* Do. Elastic Force of Vapour, = 287  
 \*\* Do. Weight of Vapour in a Cubic Foot of Air, =  
 \*\* Relative Humidity (Saturation = 100), = 80  
 RAIN fell on 15 Days; Amount in Inches, = 1.33

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	3		5	14			5		0.84	
P.M.	3	2		6	13		1	6		0.89	
Mean.	4	3	0	5	13	0	1	5	0	0.86	

Observations made and Return verified by James Dale, Teacher in Robert Gordon's College, Abdu

(Signed)







# SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Robert Gordon's College, County of Aberdeen, in Lat. 57° 9' N, Long. 2° 6' W, Distance from Sea 1 miles.

Height of Cistern of the Barometer above Mean Sea-Level 66 feet, above Ground 24 feet.

During the MONTH of June 1893.

The Hours of Observation are of Greenwich Time.

[illegible]

BAROMETER, "corrected Mean" at 9 A.M., <i>minus</i> the Correction $\frac{+}{-}$ =	29.891
for Temp. (Col. 2), = 29.472	81
Corrected Mean " of Barometer at 9 P.M., <i>minus</i> the Correction $\frac{+}{-}$ =	29.890
for Temp. (Col. 4), = 29.471	81
Mean at Station, corrected, and at 32, =	29.891
Correction for height, feet above Mean Sea-level, =	72
Mean, reduced to 32°, and Sea-level, =	29.963
Highest Reading, corrected for Index error, on the 7 th, =	30.416
Lowest Do. Do., on the 23 th, =	29.318
Difference, or Monthly Range, =	1.108

<b>S.-R. THERMOMETER</b> , (in shade, etc.), <b>Highest in Month</b> , (corrected for Index Errors), on the 16 <sup>th</sup> , .....	=	<u>84.5</u>
<b>Lowest in Month</b> , corrected for Index errors, on the 6 <sup>th</sup> , .....	=	<u>45.5</u>
Difference, or <b>Monthly Range</b> , .....	=	<u>38.2</u>
"Corrected <b>Mean</b> " of all the <b>Highest</b> , (Col. 5), .....	=	<u>63.5</u>
"Corrected <b>Mean</b> " of all the <b>Lowest</b> , (Col. 6), .....	=	<u>49.6</u>
Difference, or <b>Mean Daily Range</b> , .....	=	<u>14.2</u>
** Calculated <b>Mean Temperature</b> of Month, .....	=	<u>56.7</u>
 <b>S.-R. THERMOMETER</b> , Black Bulb in Sun, <b>Highest</b> , (corrected for Index Errors), on the 16 <sup>th</sup> , .....		
"Corrected <b>Mean</b> ," (Col. 7), of Black Bulb, <b>Max. in Sun</b> , .....	=	.....
<b>Lowest at Night</b> , Black Bulb (corrected for Index errors), on the 16 <sup>th</sup> , .....	=	.....
"Corrected <b>Mean</b> ," (Col. 8), of Black Bulb, <b>Min.</b> on grass, .....	=	.....
Difference of above means or range ("exposed"), .....	=	.....

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), .....	=	53.3
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), .....	=	52.0
## Computed Temperature of Dew-Point, .....	=	48.8
## Do. Elastic Force of Vapour, .....	=	346
## Do. Weight of Vapour in a Cubic Foot of Air, .....	=	
## Relative Humidity (Saturation = 100), .....	=	79
RAIN fell on 12 Days; Amount in Inches, .....	=	3.54

WIND.		SUMMARY.									
Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity miles per day.
A.M.	2	3	2	3	10	1	3	6		083	
P.M.	1	3	1	6	12	2	2	3		078	
Mean.	2	3	2	4	11	2	2	4	0	080	

0.6A

Observations made and  
Return verified by

(Signed)

James C Philip.

C. D. Rice

\* On 24<sup>th</sup> June & Subsequently - observations made at 8 A.M. & 6 P.M. respectively

{ C. D. R.







## SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Kings College, old Abdy County of Aberdeen, in Lat. 57° 9' N, Long. 2° 6' W, Distance from Sea  $\frac{3}{4}$  miles.Height of Cistern of the Barometer above Mean Sea-Level 60 feet, above Ground 35 feet.During the MONTH of July 1893.

The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				Rain.	WIND.				CLOUDS.				THERMOMETERS under Ground.			SEA.	OZONE.	GENERAL REMARKS.  As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc.  Mention the hour at which Storms, including Thunder and Lightning, began and ended.		Days of Month.	
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.			9 h. A.M.		9 h. P.M.		9 A.M.		P.M.		9 h. A.M.								
		Barometer.	Attached Thermometer.	Barometer.	Attached Thermometer.	Max.	Min.	Max. in Sun's rays.	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.		No. of hours in which it fell.	Direction.	Force.	Direction.	Force.	Velocity (0-6) and Direction.	Amount (0-10) and Species.	Velocity (0-6) and Direction.	Amount (0-10) and Species.	No. 3 inches.	No. 12 inches.						No. 22 inches.
		No.	inches.	No.	inches.	No.	No.	No.	No.	No.	No.	No.	No.		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.						No.
	1	30.192	67.0	30.152	67	61.8	51.9			53.6	52.8	54.4	52.1	—	S.E.	1	S.E.	1	10	Nim	10	St	—						1		
	2	30.127	66.0	30.136	67	56.9	52.9			55.1	54.1	59.0	56.8	—	S	1/2	S.E.	1/2	8	St	10	Nim	1.7						2		
	3	30.203	66.0	30.241	66	61.3	53.4			57.5	56.9	53.7	53.0	—	N.W.	—	N.E.	1	9	St	10	St	1.3						3		
	4	30.201	66	30.241	66	64.0	52.9			53.4	52.9	53.5	51.3	—	N.E.	1/2	N.E.	1/2	10	St	10	St	0.1						4		
	5	30.121	65	30.120	66	57.6	52.6			53.4	50.8	55.4	52.6	—	S	1/2	S.E.	1/2	10	St	10	St	0.3						5		
	6	30.122	65.0	30.120	66	58.1	51.5			51.7	50.8	53.2	51.0	—	S.E.	1/2	S.E.	1	10	St	10	St	0.3						6		
	7	29.977	65.0	29.902	67.0	56.0	52.0			55.4	53.4	58.5	53.2	—	S	1	S	1 1/2	9	St	10	St	8.7						7		
	8	29.823	66.0	29.823	68.0	61.8	53.3			59.8	58.0	61.9	58.4	—	S.E.	1/2	S.E.	1/2	7	St	8	St	2.0						8		
	9	29.622	67.0	29.656	67.0	63.2	53.4			58.3	56.4	58.6	56.4	—	S	1/2	S.E.	1	10	St	3	St	7.4						9		
	10	29.820	67.0	29.845	69.0	63.4	53.7			58.9	56.3	58.4	56.9	—	S	1/2	N.E.	1	14	Cir	10	St	7.4						10		
	11	29.813	68.0	29.805	69.0	62.8	53.1			58.4	57.3	57.6	56.4	0.58	N.E.	1 1/2	N.E.	1	10	St	10	Nim	—						11		
	12	29.774	66.0	29.756	66.0	61.4	53.9			54.3	53.7	54.2	51.8	0.02	N.E.	1	N	1 1/2	10	St	10	St	—						12		
	13	29.724	65.0	29.757	65.0	56.4	50.6			52.8	47.9	52.0	44.4	—	N.W.	1 1/2	N.W.	1/2	9	St	10	St	0.8						13		
	14	29.829	64.0	29.741	65.0	56.2	50.0			52.9	47.7	53.9	48.8	0.06	N.W.	1/2	N.W.	1/2	9	St	10	St	1.0						14		
	15	29.946	64.0	29.701	64.0	57.4	49.2			51.6	49.1	55.6	53.2	0.06	N.W.	1/2	S.W.	1/2	10	Nim	6	St	0.1						15		
	16	29.822	64.0	29.744	66.0	61.2	49.9			61.2	56.1	57.9	54.4	0.11	S.W.	1/2	S	1/2	8	St	5	St	4.6						16		
	17	29.613	65.0	29.722	64.0	62.2	49.4			57.9	51.8	57.4	52.4	0.49	N.W.	1/2	N.W.	1	8	St	4	St	3.5						17		
	18	29.894	65.0	29.72	64.0	61.4	49.4			59.2	54.2	55.4	53.2	0.09	N.W.	1	S.E.	1 1/2	5	St	10	Nim	8.4						18		
	19	29.368	60.0	29.287	67.0	62.4	52.2			59.4	56.4	54.4	57.1	—	S.W.	1	S	2	7	St	4	St	3.9						19		
	20	29.177	68.0	29.288	67.0	55.0	55.6			61.4	55.2	61.9	52.2	—	S.W.	1 1/2	S.W.	2 1/2	5	St	4	St	11.8						20		
	21	29.538	67.0	29.599	68.0	69.0	49.4			58.4	50.7	66.0	54.0	—	S.W.	1	W.	1	5	St	6	St	13.1						21		
	22	29.696	68.0	29.627	68.0	67.6	49.9			60.4	52.4	60.4	51.4	0.01	N.W.	1 1/2	N.W.	1 1/2	7	St	4	St	7.6						22		
	23	29.997	68.0	29.878	69.0	62.2	47.2			59.4	51.4	56.4	52.6	0.36	W	1/2	S.E.	1	3	St	10	St	11.7						23		
	24	29.646	68.0	29.526	68.0	63.4	53.0			60.7	59.3	60.7	57.4	0.07	S.W.	1	S.W.	1	6	St	6	St	3.8						24		
	25	29.506	68.0	29.576	68.0	71.4	52.1			58.4	53.4	56.0	54.4	0.42	N.W.	1	N.W.	1/2	9	Nim	5	St	1.9						25		
	26	29.721	66.0	29.979	66.0	61.7	52.0			54.4	53.4	52.6	50.2	0.02	N.W.	2	N.W.	2	7	St	5	St	2.4						26		
	27	30.176	65.0	30.240	64.0	57.1	46.9			53.0	49.0	54.1	50.0	—	N.W.	1	S.E.	1	7	St	5	St	2.7						27		
	28	30.166	65.0	30.055	66.0	57.7	47.4			57.7	53.9	63.4	53.1	0.03	S.W.	1	S.W.	1	7	St	6	St	4.0						28		
	29	29.946	65.0	29.826	66.0	68.1	53.0			56.4	53.0	59.4	56.2	0.25	S.W.	1	S.W.	1	10	Nim	6	St	2.3						29		
	30	29.711	65.0	29.839	65.0	63.0	47.0			54.4	51.0	55.4	51.4	0.03	N.W.	1 1/2	N.W.	1 1/2	7	Nim	7	St	3.2						30		
	31	29.814	64.0	29.882	63.0	59.7	49.2			54.4	52.7	52.4	48.4	0.01	N.W.	1	S	1	7	St	7	St	4.4						31		
Sums.		1814.3	18	1813.5	19	1412	1514			1615	1414	1513	1210	38		9		7													
		2630.5	1840	2618.9	1980	610	433			2040	1020	2188	981	3.01		270		325													
Means.		29.849	65.9	29.845	66.4	62.0	51.4			56.6	53.3	57.1	53.2		0.87	105		7.8													
+ Total Corrections for Instrumental Errors.		+006	-7	+006	-7																										
+ Corrections for Diurnal Range.																															
"Corrected Means."																															
No. of Column.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

NOTATION USED IN GENERAL REMARKS.

a.	denotes aurora.	m.	denotes meteor.
ci.	cirrus.	ms.	meteors.
ci-cu.	cirro-cumulus.	n.	nimbus.
ci-s.	cirro-stratus.	r.	rain.
cu.	cumulus.	h.r.	heavy rain.
cu-s.	cumulo-stratus.	c. h. r.	continued heavy rain.
d.	dew.	s.	stratus.
f.	fog.	sc.	squall.
fr.	frost.	s.	sleet.
h. fr.	hoar frost.	s.	snow.
h.	haze.	so. ha.	solar halo.
h. d.	heavy dew.	sq.	squall.
hail.	hail.	sq.	squalls.
l.	lightning.	t.	thunder.
li. cl.	light clouds.	t. s.	thunder-storm.
li. sh.	light showers.	w.	wind.
lu. co.	lunar corona.	w.	wind.
lu. ha.	lunar halo.	g.	gale of wind.

TABLE FOR ESTIMATING FORCE OF WIND.

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

## NOTATION USED IN GENERAL REMARKS.

a.	denotes aurora.	m.	encompass meteor.
ci.	cirrus.	ms.	meteors.
ci-cu.	cirro-cumulus.	n.	nimbus.
ci-s.	cirro-stratus.	r.	rain.
cu.	cumulus.	h. r.	heavy rain.
cu-s.	cumulo-stratus.	c. h. r.	continued heavy rain.
d.	dew.	s.	stratus.
f.	fog.	sc.	scud.
fr.	frost.	s.	sleet.
h. fr.	hoar-frost.	s.	snow.
h.	haze.	so. ha.	solar halo.
h. d.	heavy dew.	sq.	squall.
hl.	hail.	sq.	squalls.
l.	lightning.	t.	thunder.
l. cl.	light clouds.	t. s.	thunder-storm.
h. sh.	light showers.	w.	wind.
lu. co.	lunar corona.	s.	gale of wind.
lu. ha.	lunar halo.		

## TABLE FOR ESTIMATING FORCE OF WIND.

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

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction  $\frac{1}{100}$  for Temp. (Col. 2), = 29.758  
"Corrected Mean" of Barometer at 9 P.M., minus the Correction  $\frac{1}{100}$  for Temp. (Col. 4), = 29.753  
Mean at Station, corrected, and at 32', = 29.756  
Correction for height, feet above Mean Sea-level, =  
Mean, reduced to 32', and Sea-level, =  
Highest Reading, corrected for Index error, on the 27th, = 30.252  
Lowest Do. Do., on the 26th, = 29.197  
Difference, or Monthly Range, = 1.055

S.R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 25th, = 71.4  
Lowest in Month, corrected for Index errors, on the 27th, = 46.7  
Difference, or Monthly Range, = 24.5  
"Corrected Mean" of all the Highest, (Col. 5), = 62.0  
"Corrected Mean" of all the Lowest, (Col. 6), = 51.4  
Difference, or Mean Daily Range, = 10.6  
\*\* Calculated Mean Temperature of Month, = 56.7

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

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 56.8  
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 53.2  
Computed Temperature of Dew-Point, = 49.9  
Do. Elastic Force of Vapour, = 3.39  
Do. Weight of Vapour in a Cubic Foot of Air, =  
Relative Humidity (Saturation = 100), = 77  
RAIN fell on 18 Days; Amount in Inches, = 3.01

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

0.92

Observations made and  
Return verified by Mr Boswell  
Observatory, Kings College

(Signed)







# SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Gordon's College, Aberdeen, County of Aberdeen, in Lat. 57° 9' N, Long. 2° 6' W, Distance from Sea 1 miles.

Height of Cistern of the Barometer above Mean Sea-Level 66 feet, above Ground 2½ feet.

During the MONTH of August 1893.

The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				Rain.		WIND.				CLOUDS.				THERMOMETERS under Ground.			SEA.	OZONE.	GENERAL REMARKS.  As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc.  <i>Mention the hour at which Storms, including Thunder and Lightning, began and ended.</i>	Days of Month.	
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.		9 h. A.M.		9 h. P.M.		9 h. A.M.		9 h. P.M.		9 h. A.M.									
		Barometer.	Attached Thermometer.	Barometer.	Attached Thermometer.	Max.	Min.	Max. in Sun's rays.	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	Direction.	Force.	Direction.	Force.	Velocity (0-10), and Species.	Amount (0-10), and Species.	Velocity (0-10), and Species.	Amount (0-10), and Species.	No. 1.	No. 2.	No. 3.							
		* No.	inches.	°	inches.	°	No.	No.	No.	No.	°	°	°	°	No. of hours in which it fell.	Amount in inches.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.					°
	1	29.877	63.0	29.830	63.0	57.4	45.0			52.3	48.7	54.6	49.4	—	N.W.	1	S	1	7	cu-st	7	cu-st	3							1	
WFO	2	29.741	64.0	29.689	64.0	59.2	48.8			58.4	54.4	56.4	52.4	.03	N.W.	1	S.E.	1	10	cu	9	cu-st	3½							2	
	3	29.468	64.0	29.392	65.0	61.7	51.2			55.7	54.4	55.7	55.6	.01	S	1½	S.W.	1½	10	Nim	2	st	4							3	
	4	29.469	65.0	29.444	65.0	67.4	50.4			60.0	55.0	58.4	54.1	.08	S.W.	1	W	½	25	cu-st	6	cu-st	4½							4	
	5	29.749	64	29.942	65	65.4	51.0			51.9	49.4	54.4	48.9	—	N.W.	2	N.W.	1½	7	cu-st	4	st	5½							5	
	6	30.070	65	29.986	65	58.0	41.0			56.4	50.4	53.4	49.1	.07	S.E.	½	S.E.	1½	4	cu	10	st	11							6	
	7	29.834	64	29.883	66	57.3	53.0			56.2	54.4	61.7	58.2	—	S	1	S	1	10	st	4	st	3							7	
	8	30.053	66	30.040	65	67.7	53.8			63.1	57.9	62.4	60.3	.01	S.W.	½	S	1½	9	st	10	st	½							8	
	9	30.151	66	30.136	67	66.4	56.9			63.6	61.2	61.4	59.0	—	N.W.	½	S.E.	1	7	st	2	st	4							9	
	10	30.108	66	30.050	67	68.7	53.9			61.4	59.2	59.4	57.3	.02	S.E.	1½	S.E.	1½	3	cu-st	7	st	8							10	
	11	30.032	66	29.979	66	64.6	58.8			60.7	59.0	57.6	57.1	.02	S.E.	1½	S	1	10	st	10	st	—							11	
	12	30.003	67	30.099	69	67.6	53.6			67.0	62.3	63.2	59.0	—	N.W.	½	E.	½	7	cu-st	4	st	4½							12	
	13	30.150	68	30.142	70	72.4	52.9			64.2	59.3	61.4	59.0	—	E.	½	S.E.	1	2	cu-cu	3	st	12							13	
	14	30.185	69	30.173	70	69.4	53.9			64.4	61.0	63.6	60.4	.07	S.E.	½	S	½	3	cu-cu	4	st	11							14	
	15	30.109	70	30.078	70	70.7	57.0			70.6	65.0	60.4	59.4	.79	S.W.	½	N.E.	½	5	cu-cu	6	Nim	4½							15	
	16	29.983	70	29.965	71	78.0	57.1			67.0	64.7	64.4	61.7	.11	W	½	S.E.	½	4	cu-cu	10	st	5½							16	
	17	29.966	69	29.879	69	75.0	58.6			59.4	57.2	63.6	60.6	—	S.E.	½	S.W.	½	7	st	7	st	1							17	
	18	29.672	69	29.596	73	67.9	59.4			52.0	60.4	71.4	63.2	—	S	½	S.W.	2	5	cu-st	4	st	8							18	
	19	29.670	70	29.648	72	73.4	56.0			65.0	60.4	64.0	58.1	.07	S.W.	1	S	1½	3	cu-cu	3	cu-cu	9							19	
	20	29.492	64	29.482	66	68.0	59.2			60.4	58.0	60.2	57.0	.31	S.S.	1	S	1	8	cu	10	st	7							20	
	21	29.140	62	29.160	63	65.2	54.8			60.2	57.3	58.1	54.0	.03	S.W.	1½	S.W.	3	10	Nim	4	cu	4							21	
	22	29.420	63	29.610	62	66.9	55.0			61.0	55.8	56.0	53.8	—	S.W.	2	S.W.	1	4	cu	4	cu-st	7½							22	
	23	29.720	61	29.716	60	63.2	48.7			59.2	53.4	55.0	53.1	.16	S	1	S	½	1	cu	—	—	9½							23	
	24	29.722	57	29.954	59	62.1	47.0			57.0	50.0	53.0	50.2	.16	S	½	S	½	10	Nim	3	cu	4½							24	
	25	30.054	61	30.166	59	62.3	48.7			58.9	53.0	52.5	49.8	.04	S.W.	1	N.W.	1	3	cu	—	—	9							25	
	26	29.154	60	29.120	60.0	60.6	50.0			57.0	52.7	53.1	52.3	.14	N.W.	1	N.W.	—	9	cu-st	10	Nim	3							26	
	27	30.104	61.0	30.270	60.0	59.2	48.0			56.2	50.3	48.6	45.8	—	N.W.	1½	N.W.	—	9	cu	1	cu	5							27	
	28	30.274	57.0	30.288	59.0	62.2	40.8			55.2	57.0	54.2	51.0	—	N.W.	1	N.W.	1	9	cu-st	10	st	5							28	
	29	30.246	62.0	30.284	61.0	66.8	56.5			59.2	55.4	59.1	53.0	—	N.W.	1	N.W.	1	9	cu-cu	10	cu-st	6							29	
	30	30.046	62.0	29.972	61.0	62.3	51.0			59.2	55.0	51.0	50.2	.23	N.W.	1	N.W.	½	10	cu-st	10	Nim	—							30	
	31	29.960	57.0	29.954	57.0	58.8	49.0			52.1	44.8	50.0	47.2	.07	N	1	N	½	10	cu-st	5	cu-st	—							31	
Sums.		27574	132	28055	149	1752	682			2989	1900	2766	1547	236		300		300		206		179		163.0							
Means.		29.893	64.3	29.905	64.8	65.7	52.2			59.6	56.1	58.0	55.0			97		97		66		58									
+ Total Corrections for Instrumental Errors.		+0.06	-7.40	0.06	-7																										
+ Corrections for Diurnal Range.																															
"Corrected Means."																															
No. of Column.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
NOTATION USED IN GENERAL REMARKS.																															
a. denotes aurora. m. denotes meteor.																															
ci. cirrus. ms. meteors.																															
ci-cu. cirro-cumulus. n. nimbus.																															
cu. cirro-stratus. r. rain.																															
cu-s. cumulus. h. r. heavy rain.																															
d. cumulo-stratus. c. h. r. continued heavy rain.																															
f. fog. s. stratus.																															
fr. frost. sc. scud.																															
h-fr. hoar-frost. s. sleet.																															
h. haze. so. ha. solar halo.																															
h. d. heavy dew. sq. squall.																															
hl. hail. t. thunder.																															
li. cl. light clouds. t. s. thunder-storm.																															
li. sh. light showers. w. wind.																															
lu. co. lunar coron. g. gale of wind.																															
lu. ha. lunar halo.																															
TABLE FOR ESTIMATING FORCE OF WIND.																															
Estimated Force, 0-6. Common Designation. Estimated Force, 0-6. Common Designation. Estimated Force, 0-6. Common Designation.																															
0 Calm 1.5 Light breeze 4 Blowing hard																															
0.5 Very light air 3 Very fresh 5 Blowing against																															
1 Light air 2 Very fresh 6 Violent gale																															

## NOTATION USED IN GENERAL REMARKS.

a.	denotes aurora.	m.	enotes meteor.
ci.	cirrus.	ms.	meteors.
ci-cu.	cirro-cumulus.	n.	nimbus.
cl-s.	cirro-stratus.	r.	rain.
cu.	cumulus.	h. r.	heavy rain.
cu-s.	cumulo-stratus.	c. h. r.	continued heavy rain.
d.	dew.	s.	stratus.
f.	fog.	sc.	scud.
fr.	frost.	s.	sleet.
h.-fr.	hoar-frost.	s.	snow.
h.	haze.	so. ha.	solar halo.
h. d.	heavy dew.	sq.	squall.
hl.	hail.	sq.	squalls.
l.	lightning.	t. s.	thunder.
li. cl.	light clouds.	t. s.	thunder-storm.
li. sh.	light showers.	w.	wind.
lu. co.	lunar corona.	g.	gale of wind.
lu. ha.	lunar halo.		

## TABLE FOR ESTIMATING FORCE OF WIND.

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

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction  $\frac{1}{100}$  for Temp. (Col. 2), = 29.806  
 "Corrected Mean" of Barometer at 9 P.M., minus the Correction  $\frac{1}{100}$  for Temp. (Col. 4), = 29.816  
 Mean at Station, corrected, and at 32', = 29.801  
 Correction for height, feet above Mean Sea-level, = 7½  
 Mean, reduced to 32', and Sea-level, = 29.883  
 Highest Reading, corrected for Index error, on the 28 th, = 30.294  
 Lowest Do. Do., on the 21 th, = 29.146  
 Difference, or Monthly Range, = 1.148

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 16 th, = 78.0  
 Lowest in Month, corrected for Index errors, on the 1 th, = 45.0  
 Difference, or Monthly Range, = 33.0  
 "Corrected Mean" of all the Highest, (Col. 5), = 65.7  
 "Corrected Mean" of all the Lowest, (Col. 6), = 52.2  
 Difference, or Mean Daily Range, = 13.5  
 \*\* Calculated Mean Temperature of Month, = 59.0  
 S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 16 th, = 78.0  
 "Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, = 78.0  
 Lowest at Night, Black Bulb (corrected for Index errors), on the 1 th, = 45.0  
 "Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, = 45.0  
 Difference of above means or range ("exposed"), = 33.0

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 58.8  
 Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 55.6  
 Computed Temperature of Dew-Point, = 52.7  
 Do. Elastic Force of Vapour, = 4.00  
 Do. Weight of Vapour in a Cubic Foot of Air, = 81  
 Relative Humidity (Saturation = 100), = 81  
 RAIN fell on 19 Days; Amount in Inches, = 2.36

WIND.		SUMMARY.					
Direction.	N	NE	E	SE	S	SW	W
A.M.	1		1	5	6	7	10
P.M.	1	1	1	6	9	5	17
Mean.	1	1	1	5	8	6	18

Observations made and  
Return verified by

James Dale, Teacher  
Robert Gordon's College

(Signed)







## SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Gordon's College, Aberdeen, County of Aberdeen, in Lat. 57° 9' N., Long. 2° 6' W., Distance from Sea 1 miles.Height of Cistern of the Barometer above Mean Sea-Level 66 feet, above Ground 24 feet.During the MONTH of September 1893.

The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				Rain.	WIND.				CLOUDS.				SUNSHINE. Hours.	THERMOMETERS under Ground.			SEA.	OZONE. 0—10.	GENERAL REMARKS.  As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc.  Mention the hour at which Storms, including Thunder and Lightning, began and ended.		Days of Month.						
		9 h. A.M.		9 h. P.M.		Protected in Shade 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.			9 h. A.M.		9 h. P.M.		9 A.M.		P.M.			9 h. A.M.													
		Barometer.	Attached Thermometer.	Barometer.	Attached Thermometer.	Max.	Min.	Max. in Sunrays.	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.		No. of hours in which it fell.	Amount in inches.	Direction.	Force.	Direction.	Force.	Velocity (0—9) and Direction.	Amount (0—10, and Species.		Velocity (0—9) and Direction.	Amount (0—10, and Species.	No. 3 inches.						No. 12 inches.	No. 22 inches.	Temperature of Well at depth of feet. No.	Temperature at 1 fathom, and Density.	9 A.M.	9 P.M.
		* No.		No.		No.	No.	No.	No.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.		No.	No.	Direction.	Force.	Direction.	Force.	9 h. A.M.	9 h. A.M.		9 h. A.M.	9 h. A.M.	No.						No.	No.			9 A.M.	9 P.M.
		inches.	°	inches.	°	°	°	°	°	°	°	°																									
	1	29.842	57.0	29.904	61.0	62.3	48.6			54.8	53.6	59.4	57.3	.20	S.W.	1	W	1/2			10	Nim	10	St	1							1					
	2	30.086	63.0	30.194	62.0	64.8	56.0			61.1	57.8	57.4	54.3	—	N.W.	1 1/2	N.W.	1/2			8	cu-st	9	cu-st	7							2					
	3	30.254	64.0	30.238	60.0	63.2	46.4			61.0	54.2	60.8	55.2	—	N.W.	1/2	S.W.	1/2			7	cu-st	5	ci-st	6							3					
	4	30.154	59.0	29.932	60.0	67.9	47.0			56.9	54.0	57.2	55.0	—	S.E.	—	S.W.	1/2			3	St	—	—	11							4					
	5	29.872	63.0	29.704	64.0	72.4	49.6			61.3	57.2	60.1	57.0	—	S.W.	1	S.E.	1			3	ci	5	ci-cu	10							5					
	6	29.690	61.0	29.536	62.0	67.6	51.6			59.1	54.0	56.8	52.6	.06	W	1/2	W	—			4	ci-cu	10	St	6							6					
	7	29.464	61.0	29.444	62.0	61.1	52.0			56.2	54.0	54.8	53.2	.39	S	1/2	S	—			10	cu-st	10	St	3							7					
	8	29.462	60.0	29.684	56.0	59.1	47.0			55.8	52.9	48.0	45.2	.06	W	1/2	N	2			5	St	—	—	2							8					
	9	29.810	57.0	29.824	52.0	53.1	42.5			48.8	44.7	44.2	42.1	.13	N.W.	1	N	1			4	cu	2	cu	4							9					
	10	30.088	53.0	30.110	52.0	54.2	42.1			50.1	47.0	44.2	42.0	.01	N.W.	1 1/2	N.W.	1/2			10	Nim	10	cu-st	4							10					
	11	30.232	55.0	30.272	56.0	58.4	39.4			47.2	44.2	50.3	47.1	—	W.	1/2	S.	1/2			1	ci	1	ci	8							11					
	12	30.194	56.0	30.050	59.0	63.0	38.1			49.0	45.3	53.2	50.1	.20	S.W.	1/2	S.W.	—			3	ci	4	ci-cu	7							12					
	13	29.668	58.0	29.832	59.0	62.0	51.6			57.2	54.0	55.1	53.2	.12	S.W.	1 1/2	W	1			10	cu-st	1	ci	4							13					
	14	30.062	59.0	29.934	62.0	63.3	48.4			56.2	52.1	60.5	55.2	.01	N.W.	1/2	W.	1 1/2			10	St	9	ci-cu	3							14					
	15	29.830	65.0	29.760	62.0	71.2	56.6			63.1	59.0	57.2	50.2	—	S.W.	1/2	W	1			6	ci-cu	2	ci	8							15					
	16	29.748	62.0	29.724	60.0	63.4	50.0			59.3	51.1	55.1	54.3	.07	W	1 1/2	W	1/2			5	ci-cu	1	St	6							16					
	17	29.578	59.0	29.374	58.0	59.9	47.1			54.1	50.0	52.2	52.3	.03	S.W.	1	S.W.	1			7	ci-st	4	ci-cu	4							17					
	18	29.374	58.0	29.132	60.0	65.0	49.6			52.3	53.0	53.3	53.2	.02	S	1	S	1/2			10	St	10	St	4							18					
	19	29.076	60.0	29.082	57.0	61.0	48.0			56.4	52.2	48.1	43.0	—	W.	1 1/2	N.W.	1 1/2			4	ci-cu	—	—	5							19					
	20	29.164	53.0	29.330	52.0	54.2	44.6			49.2	45.6	46.7	44.0	.41	W	1 1/2	W	1			2	ci	5	ci-cu	6							20					
	21	29.380	52.0	29.436	53.0	49.6	44.0			49.2	47.0	45.4	44.2	.95	W.	1	W	1 1/2			10	Nim	10	Nim	1							21					
	22	29.454	52.0	29.358	52.0	48.0	37.8			47.2	45.0	40.1	38.0	.07	N.W.	1 1/2	W	1 1/2			10	cu-st	10	St	—							22					
	23	29.340	51.0	29.648	50.0	47.8	35.2			43.8	42.0	44.9	43.0	.24	W	2	W	1 1/2			10	Nim	10	St	1/2							23					
	24	29.794	50.0	29.726	50.0	48.1	39.0			46.2	42.1	45.0	43.2	.17	N.W.	2	W.	1			10	cu-st	5	cu	1							24					
	25	29.896	50.0	29.944	49.0	47.2	33.0			44.1	42.0	37.2	36.0	.06	N.W.	1	N.W.	1/2			6	cu	5	cu	2							25					
	26	29.894	48.0	29.792	50.0	49.1	38.7			39.1	37.0	44.6	42.0	.01	N.W.	1	N.W.	1			6	ci-st	5	cu-st	2							26					
	27	29.640	52.0	29.504	51.0	51.2	37.6			49.8	45.7	46.2	44.1	.22	S	1	S	1/2			10	St	—	—	—							27					
	28	29.390	52.0	29.102	53.0	55.2	49.0			50.3	44.1	51.1	49.0	.11	S	1	S	1			6	cu	7	ci-cu	—							28					
	29	28.832	52.0	28.846	54.0	54.8	47.2			52.1	49.0	50.8	47.0	.02	S	1	S	1 1/2			7	cu	6	cu	4							29					
	30	29.966	52.0	29.102	53.0	56.2	46.0			53.1	49.3	50.1	46.0	.01	S	1 1/2	S	1/2			8	cu	2	cu-st	6							30					
	31																																31				
Sums.		15180	12	15140	9	158	188			860	95	1310	134	7		310	255				195	158	125														
Means.		29.672568		29.659		56.5	58.5			52.9	49.6	51.1	48.6			103	085				65	53															
+ Total Corrections for Instru- mental Errors.		+006	-7	+006	-7											06	06																				
+ Corre- ctions for Diurnal Range.																																					
"Cor- rected Means."																																					
No. of Column.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30						

NOTATION USED IN GENERAL REMARKS.					
a.	denotes aurora.			m.	enotes meteor.
ci.	"	cirrus.	ms.	"	meteors.
ci-cu.	"	cirro-cumulus.	n.	"	nimbus.
ci-s.	"	cirro-stratus.	r.	"	rain.
cu.	"	cumulus.	h. r.	"	heavy rain.
cu-s.	"	cumulo-stratus.	c. h. r.	"	confined heavy rain.
dew.	"	dew.	s.	"	stratus.
f.	"	fog.	sc.	"	scaud.
fr.	"	frost.	s.	"	sleet.
h.-fr.	"	hoar-frost.	s.	"	snow.
h.	"	haze.	so. hn.	"	solar halo.
h. d.	"	heavy dew.	sq.	"	squall.
hl.	"	hail.	sq.s.	"	squalls.
l.	"	lightning.	t.	"	thunder.
li. cl.	"	light clouds.	t. s.	"	thunder-storm.
li. sh.	"	light showers.	w.	"	wind.
lu. co.	"	lunar corona.	g.	"	gale of wind.
lu. hn.	"	lunar halo.			

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

## NOTATION USED IN GENERAL REMARKS.

a.	denotes aurora.	m.	denotes meteor.
cl.	cirrus.	ms.	meteors.
cl.-cu.	cirro-cumulus.	n.	nimbus.
cl.-s.	cirro-stratus.	r.	rain.
cu.	cumulus.	h. r.	heavy rain.
cu.-s.	cumulo-stratus.	c. h. r.	confirmed heavy rain.
d.	dew.	s.	status.
f.	fog.	sc.	scud.
fr.	frost.	s.	sleet.
h.-fr.	hoar-frost.	s.	snow.
h.	haze.	so. ha.	solar halo.
h. d.	heavy dew.	sq.	squall.
hl.	hail.	sq.	squalls.
l.	lightning.	t.	thunder.
li. cl.	light clouds.	t. s.	thunder-storm.
li. sh.	light showers.	w.	wind.
lu. co.	lunar corona.	g.	gale of wind.
lu. ha.	lunar halo.		

## TABLE FOR ESTIMATING FORCE OF WIND.

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

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction  $\ddagger$  = 29.605  
for Temp. (Col. 2), = 29.620 73  
"Corrected Mean" of Barometer at 9 P.M., minus the Correction  $\ddagger$  = 29.593  
for Temp. (Col. 4), = 29.665 72  
Mean at Station, corrected, and at 32 = 29.599  
Correction for height, feet above Mean Sea-Level, = 72  
Mean, reduced to 32', and Sea-level, = 29.671  
Highest Reading, corrected for Index error, on the 11 th, = 30.278  
Lowest Do. Do., on the 29 th, = 28.838  
Difference, or Monthly Range, = 1.440

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 5 th, = 72.4  
Lowest in Month, corrected for Index errors, on the 28 th, = 33.0  
Difference, or Monthly Range, = 39.4  
"Corrected Mean" of all the Highest, (Col. 5), = 58.5  
"Corrected Mean" of all the Lowest, (Col. 6), = 45.5  
Difference, or Mean Daily Range, = 13.0  
\*\* Calculated Mean Temperature of Month, = 52.0  
S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the th, =  
"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, =  
Lowest at Night, Black Bulb (corrected for Index errors), on the th, =  
"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, =  
Difference of above means or range ("exposed"), =

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 52.0  
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 49.0  
†† Computed Temperature of Dew-Point, = 45.9  
†† Do. Elastic Force of Vapour, = 310  
†† Do. Weight of Vapour in a Cubic Foot of Air, = 3.50  
†† Relative Humidity (Saturation = 100), = 80  
RAIN fell on 23 Days; Amount in Inches, = 3.57

WIND.		SUMMARY.			
Direction.		N	NE	E	SE
A.M.					16689
P.M.	2				174115
Mean.	100	1	65	107	0

0.88

Observations made and  
Return verified byJames Dale Teacher in  
Robert Gordon's College

(Signed)



## OBSERVATIONS,

correct numbering of the state of every instrument; the rejection of Thermometers the frameworks of which are not likely to stand exposure to the weather, as shown in the past by repeated and annoying breakages of Thermometers of similar construction; and as regards Maximum Thermometers, either Negretti and Zamboni, or Phillips's. Whether they will act at the highest temperatures they may be reserved for a future discussion. By the laws of the Society, members and Observers have a right to have their instruments compared by the Secretaries, and to advise with him regarding the purchase of instruments. Very great care should be bestowed on the Observations of the Wind, and, therefore, it is essential, towards the right direction and force, is so essential towards the right discussion of many of the more important problems of the season.

A Wind-Vane ought to be employed and fixed 12 feet above surrounding objects. With it, it facilitates immediately, but not in a direct manner, the determination of the direction of the wind.

**Direction.** Especially with the Vane is stationary, and when the direction is feeble, particularly when the direction of a smoke, etc., will reveal the direction of the wind. Observations are very unimproved

to be made on the changes in the direction of the wind, and during storms, extra observations at every hour of Greenwich time. Such a system of simultaneous observation, pursued at different Stations, is likely to give highly valuable and important results, particularly in connection with the system of thickly-planted Stations over a limited district round Edinburgh called *Storm Stations*, in the course of being established by the Society for the systematic investigation of the relation of the force of the wind to *BAROMETRIC GRADIENTS*, and other points connected with storms. The Council would recommend the Hemispherical Cup Anemometer, a self-registering instrument which shows the amount of Wind that passes it per day; from which, by also the mean Velocity of the Wind at the time of the observation may be ascertained. For indicating the Velocity and Pressure.

[illegible]

with a measuring-rope attached to a float, we rode out to the next station, and the float rose to its height only at the time the instrument was lowered. The float was not lowered at the time the instrument was raised, it being found that a stem projecting above the rim of the float seriously interferes with the proper measurement of the float. When a measuring-class is used, care should be taken to hold the float quite perpendicular. The Rain Gauge ought to be read daily at 9 A.M., and the reading entered in the Remarks for 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 registered for the previous month. Snow-falls may, for convenience, be entered in the Rain column. Snow-falls should be followed by the word "Snow." In the case of snow-falls, the following conditions should be observed: (1) The word "Snow" should be written in the Remarks column, and the letter "S" placed in the Remarks column of the following day, and the letter "S" followed by a dash in the Remarks column of the day after that.

The depth of the snow must be measured in some open place where no drift is observed, and registered in addition to, and as a check upon, the indications of the Rain Gauge. For wind, rain, and snow, as indicated in every column, the Observer cannot be too careful to register observations only; and nothing that partakes of the nature of deduction or inference.

Convenient abbreviations for the nomenclature of Clouds will be found on the other side. The amount of Cloud ought

Clouds.

to be estimated from the greater or less obscuration of the sky overhead (i.e. within  $20^{\circ}$  or  $30^{\circ}$  of the zenith). The strata of Clouds that appear near the horizon are viewed obliquely; and thus, being 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; when half-covered, Cloud is free from Clouds it is entered 0; thus, when sky over-Clouds is, wholly covered, 10, and so on.

Observations of the Clouds are made at 9 A.M. and at sunset, as illustrating the condition and currents of the upper and lower regions of the atmosphere. The entries in the schedule are to be made in the following manner:—Thus in the column *Velocity and Direction*, 6, S. W. will indicate that the upper strata of Clouds travel with 2 W. extreme velocity from S.W., and those in the lower regions from W., with one-third the speed of the former. Again, in the second 4, st.

Clond column, an entry of 2, cast:-  
regions are covered to the amount of 4-tenths with stratus clouds; but that they are scattered to the extent of 2-tenths by cumulus clouds. The clouds are thin and light.

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

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

As the germination and growth of crops and plants generally depend greatly on the temperature of the soil,—this  
**Underground**  
amount and constancy,—the Council recommend that  
**Thermometers.** Observations in this interesting department be made  
at 9 A.M., by Thermometers permanently fixed in the soil, these  
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  
slats, 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 im-  
portant branch of Meteorology. The Council there-  
fore recommend 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  
consequence 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

[illegible]

To the SECRETARY

1



## SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Gordon's College, Aberdeen, County of Aberdeen, in Lat. 57° 9' N, Long. 2° 6' W, Distance from Sea 1 miles.Height of Cistern of the Barometer above Mean Sea-Level 66 feet, above Ground 2 1/2 feet.During the MONTH of October 1893.

The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				Rain.		WIND.				CLOUDS.				THERMOMETERS under Ground.			SEA.	OZONE.	GENERAL REMARKS.  As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc.  Mention the hour at which Storms, including Thunder and Lightning, began and ended.		Days of Month.		
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.		9 h. A.M.		9 h. P.M.		9 A.M.		P.M.		9 h. A.M.											
		Barometer.	Attached Ther- mometer.	Barometer.	Attached Ther- mometer.	Max.	Min.	Max. in Sun's rays.	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	9 h. A.M.	9 h. P.M.	9 h. A.M.	9 h. P.M.	Velocity (0-6) and Direction.	Amount (0-10) and Species.	Velocity (0-6) and Direction.	Amount (0-10) and Species.	No. 3 inches.	No. 12 inches.	No. 22 inches.									
		* No.		No.		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Direction.	Force.	Direction.	Force.	No.	Species.	No.	Species.	Hours.									
		inches.	°	inches.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	
	1	29.346	56.0	29.476	54.0	59.0	43.2			55.9	50.0	47.1	45.2	—	S.W.	1	S.W.	—		3	ci	2	ci	8								1	
	2	29.432	53.0	29.252	54.0	59.1	42.0			47.8	45.9	50.8	46.8	—	S.W.	1/2	S.W.	1		2	ci	4	ci	4								2	
	3	29.148	51.0	29.048	52.0	51.8	36.0			43.5	42.8	42.7	41.6	.04	S.W.	—	S.W.	—		10	st	—	—	3								3	
	4	28.984	50.0	28.980	49.0	52.6	39.2			40.1	39.0	44.4	42.6	.03	S.W.	1/2	S.W.	1		10	st	5	ci-st	4								4	
	5	28.978	51.0	29.092	50.0	53.0	44.2			45.0	41.2	47.6	45.4	.01	S.	1/2	S.W.	1		10	ci-st	2	st	3								5	
	6	29.190	51.0	29.424	52.0	55.2	44.5			46.2	44.3	45.8	44.2	.01	W.	1/2	W.	1/2		2	st	5	st	6								6	
	7	29.574	53.0	29.646	52.0	53.1	39.5			53.0	48.6	41.6	40.8	.17	S.E.	1/2	S.E.	—		6	ci-st	1	st	6								7	
	8	29.570	53.0	29.670	52.0	57.2	40.2			50.6	49.4	45.6	44.1	.35	E.	1	E.	1/2		10	Nim	1	st	—								8	
	9	29.832	52.0	29.720	54.0	53.8	42.2			45.2	43.0	50.1	49.2	.07	E	1	E.	1/2		1	st	—	—	5								9	
	10	29.508	53.0	29.580	50.0	49.2	41.1			48.2	46.3	46.1	42.2	—	N.W.	1	N.W.	1 1/2		10	st	—	—	4								10	
	11	29.472	52.0	29.556	50.0	54.0	41.1			45.3	42.0	44.8	41.7	—	S.W.	1 1/2	W.	1		—	—	1	st	6								11	
	12	29.670	51.0	29.876	49.0	49.0	42.0			46.2	42.0	44.3	42.0	—	W.	2	N.W.	1 1/2		5	ci-st	4	ci	5								12	
	13	29.904	51.0	29.760	50.0	50.1	45.0			45.3	42.0	45.0	44.2	.78	N	1 1/2	N.W.	1/2		2	ci	10	st	4								13	
	14	29.536	54.0	29.620	54.0	54.2	47.4			52.3	51.2	50.6	49.8	.27	S	1	S	—		10	ci-st	10	st	—								14	
	15	29.580	53.0	29.504	56.0	60.0	47.8			53.8	52.3	53.3	53.0	.02	S	1/2	S	—		10	ci-st	10	st	1								15	
	16	29.536	56.0	29.724	57.0	62.2	48.2			56.2	54.7	55.1	50.0	.05	S	1/2	N.W.	1 1/2		10	Nim	2	st	5								16	
	17	29.880	55.0	30.020	52.0	54.6	42.2			48.3	47.2	47.2	45.1	—	N.W.	1	N.W.	1		10	st	2	st	4								17	
	18	30.028	51.0	30.040	53.0	54.1	43.3			48.1	46.2	49.8	47.9	—	N.W.	1	N.W.	—		10	ci-st	4	st	3								18	
	19	30.158	53.0	30.244	56.0	57.1	48.2			52.2	49.2	52.2	49.1	—	N.W.	1/2	N.W.	1/2		10	ci-st	9	ci-st	4								19	
	20	30.058	54.0	29.958	54.5	58.8	47.7			50.1	47.0	56.7	54.0	.37	S	1	S	1 1/2		10	ci-st	8	ci-st	—								20	
	21	29.808	60.0	29.958	55.0	60.0	40.4			58.8	55.9	45.8	42.7	.15	S.W.	1/2	N.W.	1		10	ci-st	1	st	—								21	
	22	29.174	57.0	30.046	52.0	57.1	41.8			56.4	53.8	49.8	46.2	.01	S.W.	1	W.	1		3	ci	8	ci-st	4								22	
	23	30.302	53.0	30.152	52.5	55.3	45.7			47.8	44.1	48.6	45.2	—	N.W.	1	N.W.	1		5	ci-st	10	ci-st	4								23	
	24	30.004	53.0	29.612	59.0	59.2	50.7			51.3	49.1	54.7	52.3	.06	S.W.	1/2	N.W.	2 1/2		5	ci-st	10	ci-st	3								24	
	25	29.478	57.0	29.324	45.0	54.1	35.6			52.1	48.4	41.1	38.4	.18	W	1	W	1/2		10	ci-st	4	ci	3								25	
	26	29.340	50.0	29.446	49.0	44.2	37.4			39.1	36.2	39.8	37.0	.09	W	1	N.W.	2		2	ci	3	ci-st	2								26	
	27	29.640	50.0	29.554	50.1	47.2	44.5			41.8	38.5	47.2	46.7	.03	N.W.	1	W.	1		2	ci-st	10	ci-st	1								27	
	28	29.310	57.0	29.376	51.0	59.2	36.2			54.2	50.3	44.1	42.3	—	S.W.	1	W.	1		5	ci	1	st	4								28	
	29	29.336	48.0	29.608	47.0	44.1	34.3			42.3	38.1	38.2	35.1	.01	W.	2	N.W.	2 1/2		2	ci-st	2	ci-st	4								29	
	30	29.784	47.0	29.162	42.0	40.3	31.0			36.1	34.0	35.8	33.7	.09	N.W.	1	N.W.	1 1/2		1	st	2	ci	3								30	
	31	30.080	42.0	29.730	38.1	38.1	31.6			33.0	31.2	36.2	34.3	.04	N.W.	1	N.W.	2		1	ci	4	st	3								31	
	Sums.	156 12	10	1813 10	121	156	134			1410	158	1614	1614	187	135	106																	
	Means.	29.690	52.7	29.64	51.3	53.3	41.7			47.8	45.3	46.6	44.2		90	95				60	4.4												
	+ Total Corrections for Instrumental Errors.	+0.06	-7	+0.06	-7																												
	+ Corrections for Diurnal Range.																																
	"Corrected Means."																																
	No. of Column.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		

NOTATION USED IN GENERAL REMARKS.					
a.	denotes aurora.	m.	denotes meteor.		
ci.	cirrus.	ms.	meteors.		
ci-cu.	cirro-cumulus.	n.	nimbus.		
ci-s.	cirro-stratus.	r.	rain.		
cu.	cumulus.	h. r.	heavy rain.		
cu-s.	cumulo-stratus.	c. h. r.	continued heavy rain.		
d.	dew.	s.	stratus.		
f.	fog.	sc.	scud.		
fr.	frost.	s.	sleet.		
h.-fr.	hoar-frost.	s.	snow.		
h.	haze.	so. ha.	solar halo.		
h. d.	heavy dew.	sq.	squall.		
hl.	hail.	sq.	squalls.		
l.	lightning.	t.	thunder.		
li. cl.	light clouds.	t. s.	thunder-storm.		
li. sh.	light showers.	w.	wind.		
lu. co.	lunar corona.	g.	gale of wind.		
lu. ha.	lunar halo.				

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

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction  $\ddagger$  = 29.574  
for Temp. (Col. 2), = 29.636.....62.....  
"Corrected Mean" of Barometer at 9 P.M., minus the Correction  $\ddagger$  = 29.590  
for Temp. (Col. 4), = 29.648.....58.....  
Mean at Station, corrected, and at 32°, = 29.582  
Correction for height, feet above Mean Sea-level, = 73  
Mean, reduced to 32°, and Sea-level, = 29.655  
Highest Reading, corrected for Index error, on the 23 th, = 30.302  
Lowest Do. Do., on the 5 th, = 28.978  
Difference, or Monthly Range, = 1.324

S.R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 6 th, = 62.2  
Lowest in Month, corrected for Index errors, on the 30 th, = 31.0  
Difference, or Monthly Range, = 31.2  
"Corrected Mean" of all the Highest, (Col. 5), = 53.3  
"Corrected Mean" of all the Lowest, (Col. 6), = 41.7  
Difference, or Mean Daily Range, = 11.6  
\*\* Calculated Mean Temperature of Month, = 47.5  
S.R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the th, =  
"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, =  
Lowest at Night, Black Bulb (corrected for Index errors), on the th, =  
"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, =  
Difference of above means or range ("exposed"), =

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 47.2  
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 44.8  
†† Computed Temperature of Dew-Point, = 42.2  
†† Do. Elastic Force of Vapour, = 269  
†† Do. Weight of Vapour in a Cubic Foot of Air, =  
†† Relative Humidity (Saturation = 100), = 84  
RAIN fell on 21 Days; Amount in Inches, = 2.83

WIND.		SUMMARY.									
Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day.
A.M.	1		2	1	5	9	8			0.90	
P.M.			2	1	3	5	6	14		0.95	
Mean.	1	0	2	1	4	7	5	11	0	0.92	

0.85

Observations made and  
Return verified byJames Dale, Teacher in  
Robert Gordon's College

(Signed)







## SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Gordon's College, Aberdeen, County of Aberdeen, in Lat. 57° 9' N., Long. 2° 6' W., Distance from Sea 1 miles.Height of Cistern of the Barometer above Mean Sea-Level 66 feet, above Ground 24 feet.During the MONTH of November 1893.

The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				Rain.		WIND.				CLOUDS.				THERMOMETERS under Ground.			SEA.	OZONE.	GENERAL REMARKS.  As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc.  Mention the hour at which Storms, including Thunder and Lightning, began and ended.	Days of Month.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.		No. of hours in which it fell.	Amount in inches.	9 h. A.M.		9 h. P.M.		Readings of the H. Cup Anemometer No.	9 A.M.		P.M.		9 h. A.M.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
		Barometer. * No.	Attached Ther- mometer	Barometer. No.	Attached 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.		Velocity (0-10) and Direction.	Amount (0-10) and Species.	Velocity (0-10) and Direction.	Amount (0-10) and Species.	Hours.	No. 3 inches.					No. 12 inches.	No. 22 inches.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Inches.	°	Inches.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction  $\frac{1}{1000}$  for Temp. (Col. 2), = 29.867  
"Corrected Mean" of Barometer at 9 P.M., minus the Correction  $\frac{1}{1000}$  for Temp. (Col. 4), = 29.862  
Mean at Station, corrected, and at 32°, = 29.865  
Correction for height, feet above Mean Sea-level, = 74  
Mean, reduced to 32°, and Sea-level, = 29.939  
Highest Reading, corrected for Index error, on the 11th, = 30.512  
Lowest Do. Do. on the 17th, = 28.734  
Difference, or Monthly Range, = 1.778

S-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 28th, = 55.7  
Lowest in Month, corrected for Index errors, on the 26th, = 28.2  
Difference, or Monthly Range, = 27.5  
"Corrected Mean" of all the Highest, (Col. 5), = 44.5  
"Corrected Mean" of all the Lowest, (Col. 6), = 35.5  
Difference, or Mean Daily Range, = 9.0  
\*\* Calculated Mean Temperature of Month, = 40.0  
S-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 11th, = 55.7  
"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, = 55.7  
Lowest at Night, Black Bulb (corrected for Index errors), on the 17th, = 28.2  
"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, = 28.2  
Difference of above means or range ("exposed"), = 27.5

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 40.1  
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 38.1  
Computed Temperature of Dew-Point, = 35.5  
Do. Elastic Force of Vapour, = 2.08  
Do. Weight of Vapour in a Cubic Foot of Air, = 8.2  
Relative Humidity (Saturation = 100), = 82  
RAIN fell on 22 Days; Amount in Inches, = 4.16

WIND.	SUMMARY.									
	Direction.	N	NE	E	SE	S	SW	W	NW	Mean Velocity in miles per day.
A.M.	9				2	2	3	4	10	1.12
P.M.	5	1	1	2	3		6	12		1.07
Mean.	7	1	0	2	2	2	5	11	0	1.10

Observations made and  
Return verified byJames Dale, Teacher in  
Robert Gordon's College

(Signed)







# SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Gordon's College, Aberdeen, County of Aberdeen, in Lat. 57° 9' N., Long. 2° 6' W., Distance from Sea 1 miles.

Height of Cistern of the Barometer above Mean Sea-Level 66 feet, above Ground 2 1/2 feet.

During the MONTH of December 1893.

The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Day of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				Rain.		WIND.				CLOUDS.				THERMOMETERS under Ground.			SEA.	OZONE.	GENERAL REMARKS.  As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc.  Mention the hour at which Storms, including Thunder and Lightning, began and ended.	Days of Month.		
		9 h. A.M.		9 h. P.M.		Protected in Shade, & feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.		No. of hours in which it fell.	Amount in inches.	9 h. A.M.		9 h. P.M.		Readings of the H. Cup Anemometer. No.	9 A.M.		P.M.		SUNSHINE. Hours.	9 h. A.M.						
		Barometer. * No.	Attached Ther- mometer.	Barometer. No.	Attached 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.		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.
1	29.582	41.0	30.092	42.0					25.0	24.1	26.2								4	Cu-st	—	—	2							1		
2	30.158	43.0	30.022	47.0	29.2	23.1			35.8	34.0	35	25.1	.03	N.W.	1/2	N.W.	1		6	Cu-st	8	Cu	1							2		
3	30.016	46.0	30.002	47.0	43.8	26.6			31.4	30.2	43.8	41.2	.08	W	1	S.W.	1/2		10	Cu-st	10	St	1							3		
4	30.034	46.0	30.192	48.0	49.1	44.0			41.7	38.6	45.1	42.0	.01	W	1/2	W	1		10	St	10	Nim	—							4		
5	30.136	48.0	29.816	48.0	46.1	39.0			44.2	43.3	43.9	43.2	.16	W	1	W	1/2		5	St	6	St	—							5		
6	29.514	52.0	29.252	57.0	52.2	36.1			45.0	44.0	46.1	44.1	—	S.W.	1/2	S.W.	1/2		9	Cu-st	—	—	1							6		
7	29.204	47.0	29.284	46.0	43.6	33.2			51.1	48.0	44.2	41.3	.03	S.W.	1/2	S.W.	1/2		2	Cir	1	St	2							7		
8	28.640	50.0	28.636	43.5	45.1	35.2			35.8	34.0	35.1	32.3	.12	S.W.	1/2	S.W.	1		10	Cu-st	1	Cir	1							8		
9	28.954	44.0	29.192	42.0	44.8	33.1			43.1	40.8	40.5	39.1	.04	S.	4	S.	3		10	Cu-st	8	Cu-st	2							9		
10	29.282	42.0	28.742	43.0	44.6	35.2			38.1	34.2	37.4	32.6	—	S.W.	1	S.W.	1/2		8	Cu-st	10	Cu-st	—							10		
11	29.194	44.0	29.322	42.0	43.2	29.1			39.7	37.2	40.2	38.3	.10	S	2	S.E.	4		10	St	2	St	2							11		
12	29.174	45.0	29.034	42.0	41.0	30.1			38.4	36.0	34.8	33.1	.09	S.W.	1/2	S.W.	1		10	St	2	St	2							12		
13	28.902	43.0	28.912	44.0	40.1	32.8			37.1	35.8	36.1	34.2	.12	S	3	S	1		10	Nim	—	—	1							13		
14	29.316	45.0	29.808	42.0	41.1	36.1			38.1	36.4	37.6	36.8	.24	S.E.	1/2	S.E.	2		10	St	2	Cu	—							14		
15	29.798	48.0	29.744	52.0	51.2	44.3			38.1	36.0	36.7	35.0	—	W	1/2	W	1		4	Cu-st	2	St	3							15		
16	29.980	50.0	29.952	51.0	51.8	43.2			44.1	41.8	51.2	48.0	.02	W	1/2	W	1/2		5	Cu-st	2	Cu-st	1							16		
17	29.940	47.0	29.974	48.0	49.6	37.4			48.1	47.4	49.2	47.1	.01	S	1	S.W.	1/2		10	St	10	St	—							17		
18	29.692	48.0	29.604	45.0	44.2	37.9			42.2	40.1	38.9	37.6	.03	S.W.	1/2	S.W.	1		5	Cu-st	—	—	4							18		
19	29.692	48.0	29.604	45.0	44.2	37.9			42.1	40.8	41.2	39.6	.01	S	1	S	2		10	Cu-st	9	Cu-st	—							19		
20	29.234	47.6	28.660	48.0	44.0	38.1			42.8	40.7	41.8	39.2	.28	S.E.	1	S	2		10	Cu-st	10	Cu-st	—							20		
21	28.648	47.0	28.774	40.0	43.1	29.2			38.6	36.0	31.8	30.7	—	S.W.	1	S.W.	1/2		8	Cir-st	1	Cir	—							21		
22	28.840	43.0	29.158	46.0	42.2	33.1			33.7	32.0	42.2	39.4	.11	S.	1/2	S	2		10	St	1	St	1							22		
23	29.220	46.0	29.330	46.0	44.8	36.9			39.0	37.8	41.2	39.3	.02	S	1/2	S.W.	1		10	Nim	2	Cu	—							23		
24	29.690	47.0	29.880	48.0	44.3	38.0			44.1	41.0	41.3	39.2	—	S.W.	1	S.W.	1		5	Cu-st	6	Cu-st	3							24		
25	29.810	46.0	29.490	47.0	45.8	38.7			44.7	43.2	45.2	44.6	.53	S.E.	1/2	S.E.	1		10	St	10	St	—							25		
26	29.644	47.0	29.910	46.0	45.1	32.6			45.3	42.2	38.3	36.2	.04	W	1	W	1/2		1	Cu	—	—	3							26		
27	30.136	45.0	30.142	47.0	44.5	33.3			36.0	34.1	41.4	39.8	—	W	1/2	W	1		1	St	10	St	4							27		
28	30.148	48.0	30.224	47.0	46.6	40.8			44.2	42.0	45.6	44.0	.06	S	1/2	S	—		10	St	10	St	—							28		
29	30.390	47.0	30.434	48.0	45.1	36.0			44.1	43.4	41.6	41.1	.01	S.W.	—	S.W.	—		10	St	4	St	—							29		
30	30.502	46.0	30.460	45.0	44.1	32.0			40.4	39.5	36.2	35.6	—	W	1/2	W	1/2		5	Cu-st	4	St	2							30		
31	30.424	46.0	30.408	46.0	45.0	32.3			36.0	34.0	39.1	38.0	.03	W	1/2	W	—		6	St	7	Cu-st	3							31		
31	30.330	45.0	30.394	48.0	47.8	35.0			43.4	35.1	44.2	39.4	.03	N.W.	1/2	N.W.	1		8	Cu-st	5	Cu	—							31		
Sums.	141510	16	14149	15	1310	168			156	128	1312	179	220	300	350	232	154	37														
Means.	29.642	46.2	29.643	46.0	45.1	35.2			40.5	38.4	40.5	38.6		.97	1.13	7.5	4.9															
+ Total Corrections for Instrumental Errors.	7006	-7	7006	-7																												
+ Corrections for Diurnal Range.																																
"Corrected Means."																																
No. of Column.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		

NOTATION USED IN GENERAL REMARKS.					
a.	denotes aurora.	m.	denotes meteor.		
ci.	cirrus.	ms.	meteors.		
ci-cu.	cirro-cumulus.	n.	nimbus.		
ci-s.	cirro-stratus.	r.	rain.		
cu.	cumulus.	h. r.	heavy rain.		
cu-s.	cumulo-stratus.	c. h. r.	continued heavy rain.		
d.	dew.	s.	stratus.		
f.	fog.	sc.	scud.		
fr.	frost.	s.	sleet.		
h.-fr.	hoar-frost.	s.	snow.		
h.	haze.	so. ha.	solar halo.		
h. d.	heavy dew.	sq.	squall.		
hl.	hail.	sq.	squalls.		
l.	lightning.	t.	thunder.		
li. cl.	light clouds.	t. s.	thunder-storm.		
li. sh.	light showers.	w.	wind.		
li. co.	lunar corona.	g.	gale of wind.		
li. ha.	lunar halo.				

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

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction  $\frac{1}{100}$  for Temp. (Col. 2), = 29.603  
 "Corrected Mean" of Barometer at 9 P.M., minus the Correction  $\frac{1}{100}$  for Temp. (Col. 4), = 29.603  
 Mean at Station, corrected, and at 32' = 29.603  
 Correction for height, feet above Mean Sea-Level, = 74  
 Mean, reduced to 32', and Sea-level, = 29.677  
 Highest Reading, corrected for Index error, on the 29th, = 30.508  
 Lowest Do. Do., on the 8th, = 28.640  
 Difference, or Monthly Range, = 1.868

S.R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 6th, = 52.2  
 Lowest in Month, corrected for Index errors, on the 1th, = 23.0  
 Difference, or Monthly Range, = 29.2  
 "Corrected Mean" of all the Highest, (Col. 5), = 45.1  
 "Corrected Mean" of all the Lowest, (Col. 6), = 35.2  
 Difference, or Mean Daily Range, = 9.9  
 \*\* Calculated Mean Temperature of Month, = 40.2  
 S.R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the th, =  
 "Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, =  
 Lowest at Night, Black Bulb (corrected for Index errors), on the th, =  
 "Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, =  
 Difference of above means or range ("exposed"), =

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 40.5  
 Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 38.5  
 Computed Temperature of Dew-Point, = 36.0  
 Do. Elastic Force of Vapour, = .212  
 Do. Weight of Vapour in a Cubic Foot of Air, =  
 Relative Humidity (Saturation = 100), = 84  
 RAIN fell on 24 Days; Amount in Inches, = 2.26

WIND.		SUMMARY.									
Direction.		N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.
A.M.					3	8	9	9	2		0.92
P.M.					3	6	12	8	2		1.13
Mean.		0	0	0	3	7	10	9	2	0	1.05

Observations made and  
Return verified by

James Dale, Teacher in  
Robert Gordon's College

(Signed)



