

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Haddo House, County of Aberdeen, in Lat. 57° 44', Long. 2° 14', Distance from Sea 12 miles.Height of Cistern of the Barometer above Mean Sea-Level 180 feet, above Ground 3 feet.During the MONTH of January 1899.

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.	Days of Month.
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.			9 h. A.M.		9 h. P.M.		9 A.M.		P.M.			9 h. A.M.				Temperature of Wind, at feet, No.	Temperature and Density.		
		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 flashes, if it fell.	Direction.	Force.	Direction.	Force.	Readings of the H. Cup Anemometer. No.	Velocity (0—6), and Direction.	Amount (0—10), and Species.	Velocity (0—6), and Direction.	Amount (0—10), and Species.	No.	No.	No.	9 A.M.			P.M.	
		* No.	inches.	°	inches.	°	No.	No.	No.	No.	°	°	°	°	No.					9 h. A.M.					°	°	°	°	°	°	°
	1	28.882	39	28.646	39	39	35	40	32	38	37	39	38	+	5.6	5.6								33	36	37					1
	2	28.886	41	29.016	39	40	35	39	34	40	39	38	37	+	5.6	5.6								36	36	37					2
	3	29.396	38	29.232	38	39	35	39	33	36	35	37	36	+	5.6	5.6								36	36	37					3
	4	29.428	36	29.188	39	40	31	40	29	34	33	39	37	+	5.6	5.6								35	36	37					4
	5	29.528	36	29.400	35	40	32	39	28	34	32	33	31	+	5.6	5.6								34	36	37					5
	6	29.776	37	29.648	35	40	28	40	26	38	36	34	33	+	5.6	5.6								33	36	37					6
	7	29.854	29	29.468	34	34	23	35	21	26	24	33	32	+	5.6	5.6								33	35	36					7
	8	29.798	40	29.348	41	43	33	43	32	40	40	43	43	+	5.6	5.6								33	35	36					8
	9	29.108	43	28.962	42	44	42	44	37	42	42	43	42	+	5.6	5.6								36	35	36					9
	10	28.784	41	28.808	40	45	36	43	32	39	38	38	37	+	5.6	5.6								36	36	36					10
	11	28.874	37	28.906	34	38	31	39	27	34	34	32	31	+	5.6	5.6								33	36	36					11
	12	28.708	33	28.856	37	38	28	38	24	31	30	36	33	+	5.6	5.6								33	35	36					12
	13	29.076	35	29.022	36	37	32	40	28	32	31	36	34	+	5.6	5.6								33	35	36					13
	14	29.368	37	29.292	34	41	35	47	30	36	35	37	35	+	5.6	5.6								33	35	36					14
	15	29.386	35	29.008	34	36	31	37	27	33	32	32	31	+	5.6	5.6								33	35	36					15
	16	28.602	36	28.908	36	38	31	38	29	33	33	34	32	+	5.6	5.6								33	34	36					16
	17	29.350	33	29.488	32	35	28	42	25	35	33	28	27	+	5.6	5.6								33	34	36					17
	18	29.266	35	28.828	38	40	25	40	22	33	32	40	40	+	5.6	5.6								33	34	36					18
	19	28.826	36	28.868	37	40	32	42	29	35	35	39	37	+	5.6	5.6								33	34	36					19
	20	28.482	38	29.068	35	42	32	47	29	38	36	32	31	+	5.6	5.6								33	34	36					20
	21	28.712	41	28.758	37	42	32	42	30	42	41	33	33	+	5.6	5.6								33	34	36					21
	22	28.752	40	29.152	37	39	34	39	31	39	38	36	35	+	5.6	5.6								33	34	35					22
	23	29.554	35	29.868	32	34	28	38	23	32	32	29	28	+	5.6	5.6								32	34	35					23
	24	30.036	24	30.168	22	32	18	32	12	20	20	18	18	+	5.6	5.6								32	34	35					24
	25	30.242	22	30.304	28	30	12	34	9	18	18	28	27	+	5.6	5.6								32	33	35					25
	26	30.326	24	30.298	27	33	19	36	10	22	21	25	24	+	5.6	5.6								32	33	35					26
	27	30.182	16	30.172	24	28	8	37	5	9	9	21	20	+	5.6	5.6								32	33	35					27
	28	30.112	37	29.978	34	36	18	37	14	28	27	36	35	+	5.6	5.6								32	33	35					28
	29	29.898	36	29.864	36	40	34	45	32	37	37	36	35	+	5.6	5.6								32	33	35					29
	30	29.794	36	29.408	35	38	34	39	31	35	34	35	34	+	5.6	5.6								32	33	35					30
	31	29.458	35	29.278	35	36	32	36	29	33	32	35	34	+	5.6	5.6								32	33	35					31
Sums.		151715	15	15418	16	13	13	15	14	14	12	16	13											9	14	16					
Means.		910.700	106	910.898	106	1160	904	127	72	1030	996	1055	1020											1029	1070	1106					
+ Total Corrections for Instrumental Errors.		347		15		25	28	29	18	9	6	12	9											9	14	16					
+ Corrections for Diurnal Range.		29.377		34.9		29.375		35.0		38.1		29.2												33.7	34.5	35.1					
"Corrected Means."		29.377		34.9		29.375		35.0		38.1		29.2												33.7	34.5	35.1					
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.	"	ms.	"
ci-cu.	"	n.	"
ci-s.	"	r.	"
cu.	"	h. r.	"
cu-s.	"	c. h. r.	"
d.	"	s.	"
f.	"	se.	"
fr.	"	s.	"
h-fr.	"	s.	"
h.	"	so. ha.	"
h. d.	"	sq.	"
li.	"	sq.	"
li.	"	t.	"
li. cl.	"	t. s.	"
li. sh.	"	w.	"
lu. co.	"	g.	"
lu. ha.	"	g.	"

TABLE FOR ESTIMATING FORCE OF WIND.

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

NOTATION USED IN GENERAL REMARKS.

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

TABLE FOR ESTIMATING FORCE OF WIND.

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

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction $\frac{1}{17}$ = 29.330
for Temp. (Col. 2), = 29.347. $\frac{1}{17}$ = 29.328
"Corrected Mean" of Barometer at 9 P.M., minus the Correction $\frac{1}{17}$ = 29.328
for Temp. (Col. 4), = 29.345. $\frac{1}{17}$ = 29.328
Mean at Station, corrected, and at 32°, = 29.449
Correction for height, feet above Mean Sea-level, = 202
Mean, reduced to 32°, and Sea-level, = 29.651
Highest Reading, corrected for Index error, on the 26th, = 30.326
Lowest Do. Do., on the 1th, = 28.646
Difference, or Monthly Range, = 1.680

S-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 9th, = 44.0
Lowest in Month, corrected for Index errors, on the 27th, = 8.0
Difference, or Monthly Range, = 36.0
"Corrected Mean" of all the Highest, (Col. 5), = 38.1
"Corrected Mean" of all the Lowest, (Col. 6), = 29.2
Difference, or Mean Daily Range, = 8.9
** Calculated Mean Temperature of Month, = 33.7
S-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 17th, = 47.0
"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, = 39.6
Lowest at Night, Black Bulb (corrected for Index errors), on the 1th, = 5.0
"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, = 25.8
Difference of above means or range ("exposed"), = 42.6

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 33.5
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 32.4
†† Computed Temperature of Dew-Point, = 30.4
†† Do. Elastic Force of Vapour, = 16.9
†† Do. Weight of Vapour in a Cubic Foot of Air, = 8.8
†† Relative Humidity (Saturation = 100), = 88
RAIN fell on 21 Days; Amount in Inches, = 3.99

WIND.		SUMMARY.			
Direction.	N	NE	E	SE	S
A.M.		1	1	4	8
P.M.		1	2	1	5
Mean.		1	2	1	4

Observations made and
Return verified by

John Forrest

(Signed)

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Haskell House, County of Greenlee, in Lat. 57° 24', Long. 2° 14', Distance from Sea 12 miles.

Height of Cistern of the Barometer above Mean Sea-Level 180 feet, above Ground 3 feet.

During the MONTH of February 1899.

The Hours of Observation are of Greenwich Time.

[illegible]

BAROMETER,	"corrected Mean" at 9 A.M., <i>minus</i> the Correction $\uparrow\uparrow$ =	<u>29.574</u>
	for Temp. (Col. 2), = <u>29.574</u> - <u>.22</u> }	
	"Corrected Mean" of Barometer at 9 P.M., <i>minus</i> the Correction $\uparrow\uparrow$ =	<u>29.599</u>
	for Temp. (Col. 4), = <u>29.622</u> - <u>.23</u> }	
Mean at Station, corrected, and at 32°,.....		<u>29.586</u>
Correction for height, feet above Mean Sea-level,.....	=	<u>201</u>
Mean, reduced to 32°, and Sea-level,	=	<u>29.787</u>
Highest Reading, corrected for Index error, on the 20th,.....	=	<u>30.156</u>
Lowest Do. Do., on the 13th,.....	=	<u>28.484</u>
Difference, or Monthly Range,	=	<u>1.672</u>

S.-R. THERMOMETER, (in shade, etc.) Highest in Month, (corrected for Index Errors), on the 11 th	=	51.0
Lowest in Month, corrected for Index errors, on the 1 st th, 20	=	16.0
Difference, or Monthly Range,	=	35.0
"Corrected Mean " of all the Highest, (Col. 5),	=	43.4
"Corrected Mean " of all the Lowest, (Col. 6).....	=	29.9
Difference, or Mean Daily Range,	=	13.5
** Calculated Mean Temperature of Month,	=	36.6
 S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 13 th th.....	=	64.0
"Corrected Mean, " (Col. 7), of Black Bulb, Max. in Sun,	=	47.6
Lowest at Night, Black Bulb (corrected for Index errors), on the 4 th th,	=	13.0
"Corrected Mean, " (Col. 8), of Black Bulb, Min. on grass.....	=	25.6
Difference of above means or range ("exposed"),	=	

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11),	=	35.7
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12),	=	34.3
‡ Computed Temperature of Dew-Point,	=	32.2
‡ Do. Elastic Force of Vapour,	=	.184
‡ Do. Weight of Vapour in a Cubic Foot of Air,	=	
‡ Relative Humidity (Saturation = 100),	=	87
RAIN fell on 13 Days; Amount in Inches,	=	1.60

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	00		39	54	5					
P.M.	1	1		23	63	5					
Mean.	1	50		31	58	5					

Observations made and
Return verified by

John Forrest

(Signed)

INSTRUCTIONS

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

The Council recommend that Observations be made precisely at 9 A.M. and 9 P.M. (Greenwich or Railway Time only), as specified in the following remarks, or at the top of observation. of the columns of the Schedule. It is hoped that the utmost punctuality in the time of reading the instruments will be observed. Observers, in some few cases, may find this impossible; in such instances, they are specially requested to mark opposite every reading the time at which it was taken, if not at 9 A.M. or 9 P.M.

Barometer.—The use of aneroid barometers, though well suited to indicate roughly variations of atmospheric pressure, are not fitted for scientific purposes. No Barometer should be used for Meteorological Observation that is not supplied with some means of adjustment or compensation which will secure that the height of the mercury in the tube is accurately measured from the fluctuating surface of the mercury in the cistern.

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

The Barometer originally constructed by Mr. Adie of London, and usually called the Board of Trade Barometer, has the great convenience of requiring no adjustment of the cistern. Its scale-inches are not true inches, but so much shorter as to compensate the error that would otherwise arise from the fluctuations of the surface of mercury in the cistern. This is an excellent Barometer for ordinary Observers, inasmuch as it entirely eliminates the error of observation likely to arise in not a few cases in setting the instrument to the zero point of the fixed scale when the light is not good. To show the accuracy with which these Barometers are made, it may be stated, that one was compared, during a whole year, with the Society's Standard Barometer, particular care being given to make the comparison when atmospheric pressure was rising or falling very rapidly, with the result that none of the readings differed from those of the Standard more than 0.003 inch.

A modification of Fortin's Barometer is used at a number of the Society's Stations, by which the coincidence of the zero point with the surface of the mercury is indicated by a little ivory float, whose stem passes freely through the lid and case of the cistern. When the index-line on this little piston-rod is brought, by the adjusting screw, to form one straight line with those on its ivory frame, the surface of the mercury is then at the exact height from which the scale is graduated. In taking an observation, this preliminary setting must be made with scrupulous accuracy; as a slight error here will vitiate the readings from the vernier.

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

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

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

The errors most frequently made in reading the Barometer are errors of 1.000 inch, 0.500 inch, and 0.050 inch; that is to say, instead of 29.365 inches, either of the following is sometimes set down—viz. as 30.365 inches, 28.365 inches, or 29.815 inches. Experience having shown that even the very best Observers make these mistakes, particular attention is directed to the matter.

When a Barometer having adjustable surfaces has to be removed from its fastenings, the ivory peg must first be screwed so as to form a tight plug to the cistern, thus preventing the escape of the mercury. Then screw up the mercury not quite to the top of the tube, but to within a quarter of an inch of it, and take down the instrument; it should then be carried with the cistern uppermost. Before suspending the Barometer for use, it must be ascertained whether the space above the mercury in the tube is a complete vacuum; this is the case if, on inclining the instrument, a sharp tap is produced when the mercury strikes the top of the tube. If a dull tap is heard, there is air in the tube, which must be got rid of.

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

FOR TAKING METEOROLOGICAL OBSERVATIONS.

WITH REMARKS ON THE USE OF INSTRUMENTS.

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

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

Professor Phillips, and Negretti and Zamboni's Maximum Thermometer, are recommended. It is recommended that these Thermometers be graduated on the glass stem. The column of spirit breaking, and part of the spirit dissolving by high temperature and lodging at the top of the tube. This derangement is of occasional occurrence with protected Thermometers, but of frequent occurrence with exposed Thermometers. Hence a systematic examination of Minimum Thermometers ought to be a regular part of the work carried on by each Observer.

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

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

The Hygrometer in use at the Society's Stations consists of two Thermometers usually, but not necessarily, mounted on a single frame. As apparently slight deviations from the approved form of this apparatus seriously vitiate the Hygrometrical Observations, Observers are specially requested to attend to the following conditions:—The bulbs must hang down by at least an inch free from the scales and frame to which they are attached; the frame must be such as will bring the tubes forward by an inch from any board on which it may be suspended; and a little cup must be covered, and altogether placed to the side, and a little below the level of the wet bulb, but in no case under the 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. It must be seen to by the Observer that the muslin is always clean and moist, and the water pure. In frosty weather, observation of the wet bulb must be delayed, and must be made with great care. The bulb must be moistened by immersion from 15 to 30 minutes before the hour of observation. From the film of ice thus formed evaporation will proceed as from the moist cloth in ordinary circumstances.

In reading the Thermometer great care must be taken to bring the eye exactly opposite the tip of the index of the column of mercury. The reading ought to be taken to tenths of a degree, and read in 100ths. Thus the Thermometer will be read—39.3, 40.0, 40.6; or, again, 40°-4, 40°-6, 40°-6, according as 100th parts are taken as coincident with, or a little over 40°, or 40°-3, 40°-3, 40°-3, and 40°-3, or 40°-3, more or less, must be registered. For 40°-3, 40°-3, and 40°-3, respectively. In reading the Thermometer, the indication of that end of the index which is next the surface of the spirit is to be noted. On opening the Thermometer Box, the Dry and Wet Bulb Thermometers are to be first, and rapidly, read, inasmuch as they are readily affected by heat from the person of the Observer.

The Hygrometer is read at 9 A.M. and 9 P.M. The Self-Registering Thermometers are read at 9 P.M. only, as in the hour of observing the greatest and least degrees of temperature in the 24 hours preceding.

It is not a matter of indifference when the Self-Registering Thermometers are read, since, in winter at least, the extremes may occur at any hour; and it is necessary to refer their observations to their proper meteorological day. In the Society's schedules, the indications registered on the 24 are those of a set of phenomena commencing at 9 P.M. on the 3d, and extending till 9 P.M. on the 3d.

No instrument ought to be used for Meteorological purposes until it has been carefully tested by comparison with a standard Thermometer. When such Thermometers are not graduated on the stem, but merely on an attached scale, undergoing, they are not to be moved from their position on the Scale, and only after afterwards to be used with on being 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 enamel on the tube, ought to be tested once a year, in snow or melting ice.

In selecting instruments, the following points require attention. 1.—The divisions of the scale of the Barometer in reference to their scales, and the perfect freedom of the Barometer from air; the

OBSERVATIONS.

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

The Temperature of the water at the bottom of the depth of the temperature well practicable, to be taken, both the depth of the water, and of the water being noted.

Mention what Test-Papers are used, Schönbein's or Moffat's, etc. The Paper is affixed by a pin to a board in the Thermometer Box, and the indications registered at 9 A.M. and 9 P.M. It is desired that these indications be registered in connection with the force and direction of the wind at the time of observation, in the following manner:—thus 3rd, as an Ozone entry in the schedule will indicate that the Ozone paper is tinted as 3 on the scale, that the wind is from the N.W., and that its force on the scale 0—3 is 4, or blowing fresh.

Too much importance cannot be attached to the electric condition of the atmosphere in connection with terrestrial magnetism, barometrical, thermometrical, and meteorological phenomena generally. A proper Electrometer is, in truth, necessary to every complete meteorological observatory.

The Remarks column is unavoidably too narrow. Some of the most valuable Observations that can be taken are those for which no rules can be given nor hours assigned. The use of contractions ought, therefore, to be taken every advantage of, and a list of such as are in general use is given at the foot of the column. Besides special and extraordinary Observations, great prominence ought to be given in this column to prevalent Diseases, differences in character, colour, velocity, and direction between the Lower and Upper Strata of clouds, the Colour of the Sky, etc. Remarks ought to be made on the occurrence of Meteors, Auroral Boreas, remarkable depressions, elevations, and fluctuations of the Barometer, Thunder-Storms, and remarkable falls of Snow, Hail, or Rain, the Hour of Storms of Wind commencing, attaining their maximum, and ending, as well as such Notes on Storms as have been limited at above. When lofty hills are in the vicinity of a Station, the Height of Clouds and of the Show-line in winter should be recorded. By the use of abbreviations, the state of the weather at 9 A.M. and 9 P.M. should be registered, either in two columns, otherwise uncoupled, or ruled off for the purpose, from the column of Remarks.

Observations in connection with the Periodic Return of the Seasons, possess not only great scientific value, but connection with are of considerable importance in connection with the Periodic Re-Agriculture, Horticulture, and Natural History. The Council would direct the special attention of Observers to the registration of such phenomena, so that the published Summaries may fairly represent the whole of Scotland. Observations ought to be confined to individual trees and shrubs to particular species of birds, and, in the case of crops, to specified sorts reared from year to year on a selected piece of ground or farm. The Annual Table, published yearly in the Society's Journal, will indicate the species of plants and animals to which special attention is more particularly directed.

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

(By Order)

EMERENT, December 1891.

FOREST TREES	Alder,	Beech,	Birch,	Elm,	Larch,	Oak,	Sycamore or Plane,
In							
First Appear.							
Leaves							
Diverged of							
Flowering variety.							
Sowing or Above Ground.							
In Ear or Rashed.							
First Out							

FRUIT	Apple,	Black Currant,	Cherry,	Corn,	Gooseberry,	Pear,	Plum,	Strawberry,
First in								
Generally								
First in								
Generally								
First in								
Generally								
First in								
Generally								

MIGRATORY BIRDS	Chukcoo,	Curlew,	House-Swallow,	Lapwing,	Plover,	Sand-Martin,	Starling,	Swan,	Wren,
First in									
Generally									
First in									
Generally									
First in									
Generally									
First in									
Generally									

SHRUBS, ETC.	Barberry,	Boutee or Elder,	Broom,	Hazel,	Hawthorn,	Holly,	Laburnum,	Lilac,	Mezerion,	Mountain Ash or Rowan,	Red Flowering Currant,	Rhododendron Ponticum,	Whin,
First in													
Generally													
First in													
Generally													
First in													
Generally													
First in													
Generally													

OBSERVATIONS IN CONNECTION WITH THE PERIODICAL RETURN OF THE SEASONS.

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

To the SECRETARY

Scottish Meteorological Society,

122 George Street,

EDINBURGH.

BOOK POST.

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Howda House, County of Aberdeen, in Lat. 57° 24', Long. 2° 14', Distance from Sea 12 miles.Height of Cistern of the Barometer above Mean Sea-Level 182 feet, above Ground 3 feet.During the MONTH of March 1899.

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 A.M.		P.M.		9 h. A.M.								
		Barometer.	Attached Thermometer.	Barometer.	Attached Thermometer.	Max. No.	Min. No.	Max. in Sunbays No.	Min. on Grass. No.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.		Direction.	Force.	Direction.	Force.	Velocity (0-6) and Direction.	Amount (0-10), and Species.	Velocity (0-6) and Direction.	Amount (0-10), and Species.	No. 3 inches.	No. 12 inches.	No. 22 inches.						
		* No.	°	No.	°	No.	No.	No.	No.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.		No. of days in which it fell.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.					No.	
		inches.	°	inches.	°	°	°	°	°	°	°	°	°		°	°	°	°	°	°	°	°	°	°	°					°	
	1	30.066	48	29.928	46	55	46	61	39	52	49	48	45	*	N.W.	5	W					37	34	35						1	
	2	29.808	47	29.808	45	50	44	49	41	45	44	45	42	+	W		W					41	36	35						2	
	3	29.562	46	29.488	40	51	36	42	34	45	42	36	35	+	W		N.W.					39	37	36						3	
	4	29.562	35	29.782	30	38	25	47	15	37	35	26	25	+	N.W.		N.W.					35	37	36						4	
	5	29.726	34	29.670	26	38	25	41	19	32	30	24	33	+	24	S.W.	S.W.					33	36	36						5	
	6	29.324	39	29.212	36	49	31	57	26	39	36	33	32		S.W.		S.W.					34	36	36						6	
	7	29.164	37	29.166	36	48	32	55	26	40	38	33	32		S		N.W.					34	36	36						7	
	8	29.008	37	28.748	38	46	34	55	28	36	35	37	36	+	W		S					35	36	36						8	
	9	28.672	39	29.036	41	43	36	47	32	39	38	40	39	+	S.E.		S.E.					37	37	36						9	
	10	29.304	42	29.446	44	48	36	51	32	42	41	44	42		W		W					39	38	37						10	
	11	29.540	43	29.550	48	54	41	73	37	52	49	49	45		S.W.		W					39	38	37						11	
	12	29.482	45	30.132	42	52	37	64	34	46	42	42	37		32	S.W.	S.W.					40	39	38						12	
	13	30.112	44	30.056	47	57	36	68	32	45	42	47	46		S.W.		S.W.					40	40	39						13	
	14	30.048	37	30.064	46	61	44	87	38	55	50	44	42		S.W.		S.W.					42	40	40						14	
	15	30.072	48	30.134	47	56	34	71	28	51	47	46	44		N.W.		N.W.					40	41	40						15	
	16	30.148	47	30.102	40	50	34	67	31	50	46	34	33		S.W.		S.E.					42	41	40						16	
	17	30.016	41	29.972	42	57	29	62	25	43	33	39	38	+	N		N.W.					37	41	40						17	
	18	30.016	39	29.966	33	41	29	58	28	37	33	31	29	+	N		N					38	41	40						18	
	19	29.760	36	29.634	32	36	28	42	25	34	31	29	28	+	10	N	N					36	40	40						19	
	20	29.542	32	29.546	30	37	25	54	21	30	29	27	26	+	10	N	N.W.					35	40	40						20	
	21	29.398	32	29.396	30	35	25	60	21	29	28	28	27	+	N.W.		N					34	39	40						21	
	22	29.382	29	29.460	28	32	24	55	18	29	29	25	25	+	N		N					34	38	40						22	
	23	29.569	29	29.668	27	36	19	57	14	29	28	24	24	+	N.W.		N.W.					34	38	40						23	
	24	29.672	29	29.718	23	38	15	59	10	33	33	19	19		N.W.		W					33	36	39						24	
	25	29.686	24	29.456	23	33	15	37	10	23	22	33	33	+	N.W.		S.E.					33	36	37						25	
	26	29.542	37	29.642	35	43	32	50	28	40	38	34	34	+	130	N.W.	S					33	36	37						26	
	27	29.394	37	29.278	39	48	32	57	32	37	37	38	37		S		S.W.					34	36	37						27	
	28	29.198	46	28.878	44	51	33	56	32	49	44	44	33	+	S.W.		S.W.					38	37	37						28	
	29	29.004	45	29.562	42	48	40	52	39	45	44	40	40	+	N.W.		S.E.					42	38	37						29	
	30	29.882	39	30.038	38	45	33	56	29	37	34	35	33	+	N		S.W.					39	38	37						30	
	31	29.824	36	29.600	39	38	32	37	29	33	32	38	38	+	10	S	S.E.					36	38	37						31	
Sums.		19		13	16	14	15	14	14	112	107											14	16	14							
		517.983	1220	918.124	1171	1425	977	1747	856	1234	1159	744	742									1143	1174	1171							
Means.		29.612	39.3	29.616	38.0	46.0	31.5	56.4	27.6	39.8	37.4	36.2	34.5									36.9	37.9	37.8							
+ Total Corrections for Instrumental Errors.		+ 110		+ 110																											
+ Corrections for Diurnal Range.																															
"Corrected Means."																															
No. of Column.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction $\frac{1}{1000}$ for Temp. (Col. 2), = 29.693
"Corrected Mean" of Barometer at 9 P.M., minus the Correction $\frac{1}{1000}$ for Temp. (Col. 4), = 29.701
Mean at Station, corrected, and at 32°, = 29.697
Correction for height, feet above Mean Sea-level, = 203
Mean, reduced to 32°, and Sea-level, = 29.900
Highest Reading, corrected for Index error, on the 10th, = 30.166
Lowest Do. Do., on the 9th, = 28.690
Difference, or Monthly Range, = 1.470

S.R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 14th, = 61.0
Lowest in Month, corrected for Index errors, on the 24th, = 15.0
Difference, or Monthly Range, = 46.0
"Corrected Mean" of all the Highest, (Col. 5), = 46.0
"Corrected Mean" of all the Lowest, (Col. 6), = 31.5
Difference, or Mean Daily Range, = 14.5
** Calculated Mean Temperature of Month, = 38.8
S.R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 14th, = 87.0
"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, = 56.4
Lowest at Night, Black Bulb (corrected for Index errors), on the 24th, = 10.0
"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, = 24.6
Difference of above means or range ("exposed"), =

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 38.0
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 36.0
†† Computed Temperature of Dew-Point, = 33.3
†† Do. Elastic Force of Vapour, = .190
†† Do. Weight of Vapour in a Cubic Foot of Air, =
†† Relative Humidity (Saturation = 100), = 83
RAIN fell on 19 Days; Amount in Inches, = 2.96

WIND.		SUMMARY.									
Direction.		N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.
A.M.		6	-	-	1	3	8	4	9	-	
P.M.		4	-	-	5	2	9	4	7	-	
Mean.		5	0	0	3	3	8	4	8	0	

Observations made and
Return verified by

John Forrest

(Signed)

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Havild House, County of Aberdeen, in Lat. 57° 24', Long. 2° 14', Distance from Sea 12 miles.Height of Cistern of the Barometer above Mean Sea-Level 180 feet, above Ground 3 feet.During the MONTH of April 1899.

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 h. A.M.		9 h. P.M.		9 h. A.M.		9 h. P.M.						
		No.	Thermometer.	No.	Thermometer.	No.	Min.	No.	Min.	No.	Min.	No.	Min.		No.	Min.	No.	Min.	No.	Min.	No.	Min.	No.	Min.	No.	Min.					
		inches.	°	inches.	°	°	°	°	°	°	°	°	°		°	°	°	°	°	°	°	°	°	°	°	°					°
	1	29.466	51	29.506	49	61	38	75	35	56	52	49	47	+	W	W							41	40	39					1	
	2	29.708	44	29.704	41	50	38	56	33	43	40	40	39	+	N.W	S.E							42	41	39					2	
	3	29.580	45	29.564	47	58	40	63	38	45	45	46	44	+	S	W							42	41	39					3	
	4	29.266	49	29.120	46	57	39	65	34	49	47	44	41	+	S.E	N							44	42	40					4	
	5	29.344	49	29.344	42	54	38	69	34	48	42	38	37	+	W	N.W							44	43	41					5	
	6	29.492	49	29.222	42	54	37	65	34	46	41	42	40	+	W	S.E							41	43	41					6	
	7	28.944	40	29.350	40	64	38	48	33	42	42	37	36	+	E	N.W							41	42	41					7	
	8	29.196	37	29.410	39	45	33	52	31	35	34	37	36	+	N.W	N.W							39	41	41					8	
	9	29.472	47	29.366	41	50	33	73	29	45	42	38	37	+	N	S.E							40	41	41					9	
	10	29.284	41	29.308	39	47	34	62	33	39	38	38	38	+	N.W	N.W							41	41	41					10	
	11	29.394	39	29.454	37	43	32	52	31	40	38	35	32	+	N.W	N.W							40	41	41					11	
	12	29.382	40	29.038	30	45	30	53	27	39	35	39	36		S.W	S.W							37	41	41					12	
	13	28.910	43	28.942	41	46	35	56	31	42	39	40	39	+	S	S.E							40	41	41					13	
	14	29.134	43	29.228	41	47	38	62	36	43	41	39	37		S.E	E							42	41	41					14	
	15	29.228	42	29.332	39	43	36	54	34	42	38	37	33		N.E	N.E							40	40	41					15	
	16	29.412	41	29.462	36	40	32	55	28	40	35	32	31	+	N.E	N							39	41	41					16	
	17	29.454	37	29.566	35	42	29	57	25	34	33	31	30	+	W	W							38	41	41					17	
	18	29.672	43	29.566	38	46	27	65	23	42	36	35	35	+	N.W	S.E							37	41	41					18	
	19	29.482	41	29.744	40	45	34	59	29	40	39	37	36	+	W	N.W							41	41	41					19	
	20	29.768	40	29.992	38	44	32	57	29	39	38	34	33	+	N	N.W							41	41	41					20	
	21	29.652	42	29.782	33	42	29	51	24	41	38	29	27	+	N.W	N.W							40	41	41					21	
	22	29.874	43	29.908	37	45	26	70	23	41	39	34	32		N.W	S							36	41	41					22	
	23	29.800	43	29.498	44	51	32	65	27	43	40	43	42	+	S.W	S.E							40	41	41					23	
	24	29.342	49	29.218	50	61	41	86	40	51	48	49	47	+	S.E	S							45	42	41					24	
	25	29.122	47	29.166	45	48	42	47	42	44	44	42	42	+	S.E	S.E							46	44	42					25	
	26	29.348	48	29.538	44	55	40	66	35	49	46	40	39	+	N.W	N.W							46	44	42					26	
	27	29.526	54	29.558	46	56	31	73	27	55	48	43	42		S.W	S							44	45	43					27	
	28	29.358	53	29.322	48	63	43	74	42	52	51	46	45	+	S	N.E							48	46	44					28	
	29	29.344	42	29.554	40	45	37	45	35	38	37	37	36	+	N.E	N.W							45	47	45					29	
	30	29.780	44	29.868	41	45	33	60	31	43	40	39	37	+	N.W	N.W							43	46	45					30	
	31																													31	
Sums.		14711		14314		12	13	13	13	12	14	14	14										1243	1262	1238						
Means.		88.826/1326		88.336/1330		1239	1475/1045	1835	943	1307	1226	1170	1126																		
+ Total Corrections for Instrumental Errors.		1110		1110																											
+ Corrections for Diurnal Range.																															
"Corrected Means."		29.497		29.520																											
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.
d.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. sqs. 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.

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 \uparrow for Temp. (Col. 2), 29.497"Corrected Mean" of Barometer at 9 P.M., minus the Correction \uparrow for Temp. (Col. 4), 29.520Mean at Station, corrected, and at 32°, 29.508Correction for height, feet above Mean Sea-Level, 200Mean, reduced to 32°, and Sea-level, 29.708Highest Reading, corrected for Index error, on the 12th, 30.018Lowest Do. Do., on the 13th, 29.020Difference, or Monthly Range, 0.998S-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 17th, 63.0Lowest in Month, corrected for Index errors, on the 12th, 26.0Difference, or Monthly Range, 37.0"Corrected Mean" of all the Highest, (Col. 5), 49.2"Corrected Mean" of all the Lowest, (Col. 6), 34.8Difference, or Mean Daily Range, 14.4** Calculated Mean Temperature of Month, 42.0S-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 24th, 86.0"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, 61.2Lowest at Night, Black Bulb (corrected for Index errors), on the 19th, 23.0"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, 32.1Difference of above means or range ("exposed"), HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), 41.3Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), 39.2Computed Temperature of Dew-Point, 36.5Do. Elastic Force of Vapour, 217Do. Weight of Vapour in a Cubic Foot of Air, Relative Humidity (Saturation = 100), 84RAIN fell on 14 Days; Amount in Inches, 3.71

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	3	1	4	3	3	6	9	—			
P.M.	1	2	1	7	3	1	4	11	—			
Mean.	1	3	1	5	3	2	5	10	0	—		

Observations made and
Return verified by

John Forrest

(Signed)

INSTRUCTIONS

FOR TAKING METEOROLOGICAL OBSERVATIONS,

WITH REMARKS ON THE USE OF INSTRUMENTS.

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

The Council recommend that Observations be made precisely at 9 A.M. and 9 P.M. (Greenwich or Railway Time only), as specified in the following remarks, or at the top of each hour of the columns of the Schedule. It is hoped that the utmost punctuality in the time of reading the instruments will be observed. Observers, in some few cases, may find this impossible; in such instances, they are specially requested to mark opposite every reading the time at which it was taken, if not at 9 A.M. or 9 P.M.

Weather-Glasses and Aneroids, though well suited to indicate the state of the atmosphere, are not fitted for scientific purposes. No Barometer should be used for Meteorological Observation that is not supplied with some means of adjustment or compensation which will secure that the fluctuating surface of the mercury in the cistern.

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

The Barometer originally constructed by Mr. Adie of London, and usually called the Board of Trade Barometer, has the great convenience of requiring no adjustment of the cistern. Its scale-inches are not true inches, but so much shorter as to compensate the error that would otherwise arise from the fluctuations of the surface of mercury in the cistern. This is an excellent Barometer for ordinary Observers, inasmuch as it entirely eliminates the error of observation likely to arise in not a few cases in setting the instrument to the zero point of the fixed scale when the light is not good. To show the accuracy with which these Barometers are made, it may be stated, that one was compared, during a whole year, with the Society's Standard Barometer, particular care being given to make the comparison when atmospheric pressure was rising or falling very rapidly, with the result that none of the readings differed from those of the Standard more than 0.003 inch.

A modification of Fortin's Barometer is used at a number of the Society's Stations, by which the coincidence of the zero point with the surface of the mercury is indicated by a little ivory float, whose stem passes freely through the lid and case of the cistern. When the index-line on this little piston-rod is brought, by the adjusting screw, to form one straight line with those on its ivory frame, the surface of the mercury is then at the exact height from which the scale is graduated. In taking an observation, this preliminary setting must be made with scrupulous accuracy; as a slight error here will vitiate the readings from the vernier.

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

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

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

The errors most frequently made in reading the Barometer are: errors of 1.000 inch, 0.500 inch, and 0.050 inch; that is to say, instead of 29.365 inches, either of the following is sometimes set down—viz. as 30.365 inches, 28.365 inches, or 29.815 inches. Experience having shown that even the very best Observers make these mistakes, particular attention is directed to the matter. When a Barometer having adjustable surfaces has to be removed from its fastenings, the ivory peg must first be screwed so as to form a tight plug to the cistern, thus preventing the escape of the mercury. Then screw up an inch of it, and take down the instrument; it should then be carried with the cistern uppermost. Before suspending the Barometer for use, it must be ascertained whether the space above the mercury in the tube is a complete vacuum; this is the case if, on inclining the instrument, a sharp tap is produced when the mercury strikes the top of the tube. If a dull tap is heard, there is air in the tube, which must be got rid of.

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

The Council of the Society recommend that the Self-Registering Thermometers, and the Dry and Wet Bulb Hygrometers, be kept in Stevenson's Improved Box for Thermometers.

Thermometers, painted white inside and outside, and as regards Maximum Thermometers, either Negretti and Zambra's, or Philip's, which they will act at the highest temperatures they may be required to register. By the laws of the Society, Members and Observers have a right to have their instruments compared by the Secretary, and to advise with him regarding the purchase of instruments. Very great care should be bestowed on the Observations of the Thermometer. Well and of the water being noted.

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

Too much importance cannot be attached to the electric condition of the atmosphere in connection with terrestrial magnetism, barometrical, thermometrical, and meteorological phenomena generally. A proper Electrometer is in truth, necessary to every complete meteorological observatory.

The Remarks column is unavoidably too narrow. Some of the most valuable Observations that can be taken are those for which no rules can be given nor hours assigned. The use of contractions ought, therefore, to be taken every advantage of, and a list of such as are in general use is given at the foot of the column. Besides special and extraordinary Observations, great prominence ought to be given in this column to prevalent Diseases, differences in character, colour, velocity, and direction between the Lower and Upper Strata of clouds, the Colour of the Sky, etc. Remarks ought to be made on the occurrence of Meteors, Auroræ Boreales, remarkable depressions, elevations, and fluctuations of the Barometer, Thunder-Storms, and remarkable falls of Snow, Hail, or Rain, the Hour of Storms of Wind commencing, attaining their maximum, and ending, as well as such Notes on Storms as have been limited at above. When lofty hills are in the vicinity of a Station, the Height of Clouds and of the Snow-line in winter should be recorded.

By the use of observations, the state of the weather at 9 A.M. and 9 P.M. should be registered, either in two columns, otherwise uncoupled, or ruled off for the purpose, from the column of Remarks.

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

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

(By Order)

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water, in cases where the observations cannot be taken daily, the observation may be made on the 15th, 16th, and 25th of each month. When convenient, extra Sea Observations might be taken for other and greater depths, noting always the Temperature of the Air, and the Hour of Observation. It is also very desirable that observations on the daily Maxima and Minima by Thermometers continuously immersed, be instituted at points along the coast, by the method proposed by Mr. Stevenson, and already commenced at Peterhead and Liverpool.

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

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To the SECRETARY

Scottish Meteorological Society,

122 George Street,

EDINBURGH.

BOOK POST.

Barberry.	Broom.	Hawthorn.	Holly.	Lilac.	Mezereum.	Mountain Ash or Rowan.	Red Flowering Currant.	Rhododendron Ponticum.	Whin.
Apple.	Black Currant.	Cherry.	Gean.	Gooseberry.	Pear.	Plum.	Strawberry.		
Cuckoo.	Curtlew.	House-Swallow.	Lapwing.	Plover.	Sand-Martin.	Starling.	Swan.		
First Arrival.	First Departure.								

Alder.	Beech.	Birch.	Elm.	Larch.	Lime.	Oak.	Sycamore or Plane.
In Flower.	In Leaf.	In Leaf.	In Leaf.	In Leaf.	In Leaf.	In Leaf.	In Leaf.
First Out.	First In.	First In.	First In.	First In.	First In.	First In.	First In.

OBSERVATIONS IN CONNECTION WITH THE PERIODICAL RETURN OF THE SEASONS.

Barberry.	Broom.	Hawthorn.	Holly.	Lilac.	Mezereum.	Mountain Ash or Rowan.	Red Flowering Currant.	Rhododendron Ponticum.	Whin.
Apple.	Black Currant.	Cherry.	Gean.	Gooseberry.	Pear.	Plum.	Strawberry.		
Cuckoo.	Curtlew.	House-Swallow.	Lapwing.	Plover.	Sand-Martin.	Starling.	Swan.		
First Arrival.	First Departure.								

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

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

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SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Nadder House, County of Aberdeen, in Lat. 57° 24', Long. 2° 14', Distance from Sea 12 miles.Height of Cistern of the Barometer above Mean Sea-Level 180 feet, above Ground 8 feet.During the MONTH of May 1899.

The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				Rain.	WIND.				CLOUDS.				SUNSHINE.	THERMOMETERS under Ground.			SEA.	OZONE.	GENERAL REMARKS. As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc. Mention the hour at which Storms, including Thunder and Lightning, began and ended.	Days of Month.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs. Sun-rays Grass.		9 h. A.M.		9 h. P.M.			9 h. A.M.		9 h. P.M.		9 A.M.		P.M.			9 h. A.M.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
		Barometer.	Attached Thermometer.	Barometer.	Attached Thermometer.	Max.	Min.	Max.	Min.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	No. of drops in which it fell.	No.	Direction.	Force.	Direction.	Force.	Readings of the H. Cup Anemometer. No.	9 h. A.M.	Velocity (0-6) and Direction.	Amount (0-10), and Species.	Velocity (0-6) and Direction.	Amount (0-10), and Species.	No. 3 inches.	No. 12 inches.	No. 22 inches.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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BAROMETER, "corrected Mean" at 9 A.M., minus the Correction \ddagger = 29.786
for Temp. (Col. 2), 29.842 = 56

"Corrected Mean" of Barometer at 9 P.M., minus the Correction \ddagger = 29.807
for Temp. (Col. 4), = 29.853 = 46

Mean at Station, corrected, and at 32°, = 29.806

Correction for height, feet above Mean Sea-level, = 2.00

Mean, reduced to 32°, and Sea-level, = 30.006

Highest Reading, corrected for Index error, on the 6 th, = 30.278

Lowest Do. Do., on the 16 th, = 28.858

Difference, or Monthly Range, = 1.420

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 31 th, = 70.0

Lowest in Month, corrected for Index errors, on the 6 th, = 27.0

Difference, or Monthly Range, = 43.0

"Corrected Mean" of all the Highest, (Col. 5), = 52.6

"Corrected Mean" of all the Lowest, (Col. 6), = 37.3

Difference, or Mean Daily Range, = 15.3

** Calculated Mean Temperature of Month, = 45.0

S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 19 th, = 89.0

"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, = 64.7

Lowest at Night, Black Bulb (corrected for Index errors), on the 6 th, = 24.0

"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, = 33.4

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

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 45.5

Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 42.6

†† Computed Temperature of Dew-Point, = 39.2

†† Do. Elastic Force of Vapour, = 241

†† Do. Weight of Vapour in a Cubic Foot of Air, = 79

†† Relative Humidity (Saturation = 100), =

RAIN fell on 16 Days; Amount in Inches, = 1.84

WIND.	SUMMARY.									
	Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.
A.M.		4	7	3	5	1	4	2	5	
P.M.		6	1	4	11	1	4	4		
Mean.		5	4	4	8	1	2	3	4	0

Observations made and
Return verified by

John Forrest

(Signed)

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at St. Anne's House, County of Aberdeen, in Lat. 57° 24', Long. 2° 14', Distance from Sea 12 miles.

Height of Cistern of the Barometer above Mean Sea-Level 180 feet, above Ground 5 feet.

During the MONTH of June 1899.

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.			Temperature of WELL at depth of feet, No.	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 A.M.		P.M.		9 h. A.M.			0—10.								
		Barometer.	Attached Thermometer	Barometer.	Attached thermometer	Max.	Min.	Max. in Sun's rays.	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	Direction.	Force	Direction.	Force	Velocity (0—6) and Direction.	Amount (0—10), and Species.	Velocity (0—6) and Direction.	Amount (0—10), and Species.	No. 3 inches.	No. 12 inches.		No. 22 inches.	9 A.M.	9 P.M.						
		* No.		No.		No.	No.	No.	No.					No. of hours in which it fell.	Amount in inches.																		
		inches.	°	inches.	°	°	°	°	°	°	°	°	°	°																			
	1	29.968	62	29.853	54	69	38	74	33	63	55	47	48		S.E.	S.E.							5.6	5.4	5.0					1			
	2	29.684	59	29.798	54	66	44	80	39	58	55	50	46	+	S.	S.E.							5.7	5.4	5.1					2			
	3	29.840	61	29.796	58	64	43	79	39	60	52	57	53		S.W.	W.							5.6	5.4	5.2					3			
	4	29.866	60	29.902	60	68	51	77	46	60	56	57	55		S.W.	W.							5.8	5.5	5.2					4			
	5	29.900	60	29.958	61	72	53	86	47	65	59	57	53		S.W.	W.							6.0	5.6	5.3					5			
	6	29.962	60	30.048	60	66	55	73	52	58	54	57	54		W.	N.W.							5.8	5.7	5.3					6			
	7	30.154	52	30.224	50	57	45	57	35	51	50	45	44	+	N.E.	E.							5.7	5.6	5.3					7			
	8	30.252	56	30.224	51	61	34	76	31	55	50	47	45		E.	S.E.							5.5	5.5	5.3					8			
	9	30.198	56	30.156	53	57	51	63	40	55	52	50	48		N.W.	N.W.							5.6	5.6	5.3					9			
	10	30.072	54	30.004	56	65	49	80	48	53	51	54	52		N.	S.E.							5.6	5.7	5.3					10			
	11	30.002	58	30.022	55	63	52	76	45	57	54	52	49	06	N.W.	N.W.							5.8	5.7	5.4					11			
	12	29.926	63	29.900	54	72	40	85	37	64	56	50	49		N.	N.W.							5.4	5.7	5.4					12			
	13	29.962	53	29.918	50	57	45	76	39	51	47	44	43		N.	S.E.							5.6	5.7	5.5					13			
	14	29.854	61	29.864	55	68	35	84	31	62	56	52	50		S.E.	S.E.							5.8	5.7	5.5					14			
	15	29.882	68	29.878	62	76	41	90	38	62	53	60	52		S.E.	S.							6.2	5.8	5.5					15			
	16	29.904	63	29.904	57	65	49	79	43	62	58	50	49		S.	S.E.							6.2	5.9	5.6					16			
	17	29.798	63	29.632	56	63	48	76	46	60	56	52	51		S.E.	S.E.							6.0	5.9	5.6					17			
	18	29.522	57	29.400	56	59	51	69	51	56	54	52	51	+	E.	S.E.							6.6	5.9	5.6					18			
	19	29.300	58	29.314	54	57	50	76	44	56	55	50	48	+	S.E.	S.E.							5.8	5.9	5.6					19			
	20	29.328	57	29.336	55	57	43	72	40	55	53	56	53	+	S.E.	S.E.							5.7	5.8	5.6					20			
	21	29.412	58	29.524	56	58	52	65	52	57	56	54	53	+	S.E.	S.E.							5.8	5.8	5.6					21			
	22	29.616	59	29.662	57	64	52	80	51	58	56	53	52		S.E.	S.E.							5.9	5.8	5.6					22			
	23	29.688	61	29.712	58	63	49	78	42	60	57	55	54	+	S.E.	S.E.							6.1	5.9	5.6					23			
	24	29.752	60	29.862	57	61	53	75	50	58	52	53	50	49	N.W.	N.W.							6.0	5.9	5.7					24			
	25	29.810	62	29.764	57	66	44	86	39	61	54	54	53	+	W.	S.							5.9	5.9	5.7					25			
7284	26	29.784	60	29.982	55	63	51	74	44	57	53	51	48	+	N.	N.W.							6.1	5.9	5.7					26			
	27	30.076	61	29.998	57	61	39	78	34	61	56	53	50		S.E.	S.E.							5.9	5.9	5.7					27			
	28	29.832	57	29.622	56	57	51	75	48	55	54	53	51	+	S.	S.E.							5.9	5.9	5.7					28			
	29	29.518	55	29.586	56	59	52	59	51	53	53	53	52	+	S.W.	N.W.							5.7	5.9	5.7					29			
	30	29.572	60	29.436	53	56	45	88	42	58	52	50	49	42	W.	S.E.							5.9	5.9	5.7					30			
	31																													31			
Sums.		18311	1189	18420	113	15	12	15	12	15	12	15	12										17	22	14								
Means.		29.813	7	29.809	17	90		2206	1271	1741	1521	1505										17.5	17.2	16.3									
+ Total Corrections for Instrumental Errors.		+120		+120																													
+ Corrections for Diurnal Range.																																	
"Corrected Means."		29.933		29.929																													
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.	hall.	sq.	squalls.
l.	lightning.	t.	thunder.
li. cl.	light clouds.	t. s.	thunder-storm.
li. sh.	light showers.	w.	wind.
lu. co.	lunar corona.	g.	gale of wind.
lu. ha.	lunar halo.		

TABLE FOR ESTIMATING FORCE OF WIND.

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

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction \ddagger for Temp. (Col. 2), = 29.933

"Corrected Mean" of Barometer at 9 P.M., minus the Correction \ddagger for Temp. (Col. 4), = 29.929

Mean at Station, corrected, and at 32°, = 29.853

Correction for height, feet above Mean Sea-level, = 195

Mean, reduced to 32°, and Sea-level, = 30.048

Highest Reading, corrected for Index error, on the 5th, = 30.374

Lowest Do. Do., on the 13th, = 29.420

Difference, or Monthly Range, = 0.954

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 15th, = 76.0

Lowest in Month, corrected for Index errors, on the 8th, = 31.0

Difference, or Monthly Range, = 45.0

"Corrected Mean" of all the Highest, (Col. 5), = 63.0

"Corrected Mean" of all the Lowest, (Col. 6), = 46.8

Difference, or Mean Daily Range, = 16.2

** Calculated Mean Temperature of Month, = 54.9

S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 15th, = 90.0

"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, = 76.2

Lowest at Night, Black Bulb (corrected for Index errors), on the 8th, = 31.0

"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, = 42.9

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

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 55.1

Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 52.1

Computed Temperature of Dew-Point, = 49.2

Do. Elastic Force of Vapour, = 35.1

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

Relative Humidity (Saturation = 100), = 81

RAIN fell on 11 Days; Amount in Inches, = 0.97

WIND.	SUMMARY.									
	Direction.	N	NE	E	SE	S	SW	W	NW	Mean Velocity in miles per day
A.M.		5	1	2	10	2	4	3	3	
P.M.				1	16	2		3	8	
Mean.		2	1	2	13	2	2	3	5	0

* Each instrument tested at the Office in Edinburgh bears the stamp "S.M.S."; and a number to be entered in the Heading; or the Number and Initials of the Maker may be here given.

† Embracing corrections for both capillarity and Index Errors.

‡ The Diurnal Range for Scotland is as yet unknown.

§ Practically, though not absolutely a minus correction.

|| These "Hygrometrical Deductions" are calculated from Glaisher's Hygrometrical Tables, Second Edition only.

** While the Diurnal Range is unknown, the Artificial Mean of Cols. 5 and 6 will be entered as the "Calculated Mean Temperature."

Any observations not taken under the Conditions specified in the Directions on the other side, or noted at the Top of each column, must be marked as such by the observer, in each Schedule. See over.

Observations made and Return verified by John Forrest

(Signed)

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Kaddo House, County of Aberdeen, in Lat. 57° 24', Long. 2° 14', Distance from Sea 12 miles.Height of Cistern of the Barometer above Mean Sea-Level 180 feet, above Ground 3 feet.During the MONTH of July 1899.

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 A.M.		P.M.		9 h. A.M.								
		Barometer.	Attached Thermometer.	Barometer.	Attached Thermometer.	Max.	Min.	Max. in Sun's rays.	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.		Direction.	Force.	Direction.	Force.	Velocity (0-10), and Direction.	Amount (0-10), and Species.	Velocity (0-10), and Direction.	Amount (0-10), and Species.	No.	No.	No.						
		* No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.					
		inches.	°	inches.	°	°	°	°	°	°	°	°	°		°	°	°	°	°	°	°	°	°	°	°	°					
	1	29.294	56	29.188	55	57	44	64	41	54	53	52	52	+	S. E.	1	N. E.						58	59	57					1	
	2	29.158	56	29.352	56	58	53	70	52	54	54	54	54	+	37	2	N.						58	58	57					2	
	3	29.596	57	29.756	56	61	52	64	51	56	54	54	52		N. W.		N. W.						58	58	57					3	
	4	29.824	57	29.888	56	61	52	74	47	56	53	53	51		N.		N.						57	58	57					4	
	5	29.930	64	29.972	57	67	46	87	40	64	58	53	51		N.		S. E.						58	58	57					5	
	6	29.952	60	29.968	59	67	51	81	47	61	59	56	55		S. E.		S. E.						61	59	57					6	
	7	29.924	67	29.928	62	72	52	93	47	70	64	61	60	+	S.		N. W.						64	60	58					7	
	8	29.860	61	29.850	57	65	53	83	53	60	60	54	53	+	S.		N. W.						62	61	58					8	
	9	29.704	62	29.562	61	66	51	84	45	60	56	59	58	+	1.48	S. W.		S.					61	61	58					9	
	10	29.662	57	29.678	57	59	52	70	53	54	53	54	53	+	8.		S. E.						61	61	59					10	
	11	29.644	57	29.652	56	63	52	75	51	56	55	54	54	+	N. E.		N. E.						61	61	59					11	
	12	29.648	58	29.578	60	65	52	73	50	58	57	58	57		N. W.		S. E.						61	61	59					12	
	13	29.574	60	29.608	60	70	54	87	51	60	59	58	55		S. W.		S.						62	61	59					13	
	14	29.666	68	29.714	61	72	52	93	45	69	62	58	56		S.		S. E.						63	61	59					14	
	15	29.752	64	29.798	60	67	49	86	44	64	60	56	55	+	S. W.		N.						63	62	59					15	
	16	29.864	63	29.864	62	68	46	88	41	64	58	60	58		67		S.						62	62	60					16	
	17	29.864	64	29.812	61	70	50	90	44	64	59	60	60	+	S.		S. W.						63	62	60					17	
	18	29.778	64	29.776	61	68	52	89	46	64	61	58	58	+	1.32		S.						63	62	61					18	
	19	29.886	62	29.800	57	65	53	77	53	60	60	53	52	+	N. W.		N. W.						63	62	61					19	
	20	29.918	60	29.954	57	61	45	79	41	58	53	53	52		N. W.		N. W.						59	61	60					20	
	21	29.918	59	29.924	59	62	45	76	40	58	56	56	55		S.		S.						60	60	60					21	
	22	29.924	61	29.852	58	67	52	82	44	61	59	55	54		S. W.		S.						61	61	59					22	
	23	29.736	60	29.852	60	64	51	77	47	59	57	58	57	+	31		S.						62	62	60					23	
	24	29.706	61	29.744	59	63	51	73	52	60	68	57	56	+	N.		S.						62	62	60					24	
	25	29.632	63	29.516	64	72	52	81	52	64	61	63	61	+	S.		S.						63	62	60					25	
	26	29.634	62	29.764	57	64	52	75	48	60	54	52	50		W.		W.						62	62	60					26	
	27	29.862	60	29.896	60	64	50	85	46	58	52	58	54		W.		W.						59	61	60					27	
	28	29.828	60	29.754	61	64	55	68	52	59	54	60	56	+	N. W.		W.						60	61	60					28	
	29	29.752	66	29.806	63	72	59	86	56	66	60	61	56		N. W.		N. W.						62	61	60					29	
	30	29.962	67	30.114	66	75	55	87	51	67	59	63	60		32		N. W.		N. W.				62	62	60					30	
	31	30.216	69	30.210	60	73	50	83	45	69	62	51	50		S.		S. E.						63	62	60					31	
Sums.		922.143		922.830		13	9	14	10	13	11	13	11										1894	1883	1881						
Means.		29.757	61.4	29.769	59.2	65.9	51.1	80.0	47.8	60.9	57.4	56.5	55.8										61.1	60.7	59.1						
+ Total Corrections for Instru- mental Errors.		+120		+120																											
+ 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.	denotes meteor.		
ci.	" cirrus.	ms.	" meteors.		
ci.-cu.	" cirro-cumulus.	n.	" nimbus.		
cu.-s.	" cirro-stratus.	r.	" rain.		
cu.	" cumulus.	c. 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.		
hi.	" hail.	sq.	" squalls.		
l.	" lightning.	t.	" thunder.		
li. cl.	" light clouds.	t. s.	" thunder-storm.		
li. sh.	" light showers.	w.	" wind.		
lu. co.	" lunar corona.	g.	" gale of wind.		
lu. ha.	" lunar halo.				

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

NOTATION USED IN GENERAL REMARKS.

a.	denotes aurora.	m.	denotes meteor.
ci.	cirrus.	ms.	meteors.
ci-cu.	cirro-cumulus.	n.	nimbus.
cu.	cumulus.	r.	rain.
cu-s.	cumulo-stratus.	h. r.	heavy rain.
d.	dew.	c. h. r.	continued heavy rain.
f.	fog.	s.	stratus.
fr.	frost.	sc.	scud.
h. fr.	hoar-frost.	s.	snow.
h.	haze.	so. lu.	solar halo.
h. d.	heavy dew.	sq.	small.
hi.	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 $\frac{1}{100}$ for Temp. (Col. 2), = 29.790
"Corrected Mean" of Barometer at 9 P.M., minus the Correction $\frac{1}{100}$ for Temp. (Col. 4), = 29.808
Mean at Station, corrected, and at 32°, = 29.799
Correction for height, feet above Mean Sea-level, = 1.95
Mean, reduced to 32°, and Sea-level, = 29.594
Highest Reading, corrected for Index error, on the 31st, = 30.216
Lowest Do. Do., on the 2nd, = 29.158
Difference, or Monthly Range, = 1.058

S.-R. THERMOMETER, (in shade, etc.). Highest in Month, (corrected for Index Errors), on the 30th, = 75.0
Lowest in Month, corrected for Index errors, on the 1st, = 44.0
Difference, or Monthly Range, = 31.0
"Corrected Mean" of all the Highest, (Col. 5), = 65.9
"Corrected Mean" of all the Lowest, (Col. 6), = 51.1
Difference, or Mean Daily Range, = 14.8
** Calculated Mean Temperature of Month, = 58.5
S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 7th, = 93.0
"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, = 80.0
Lowest at Night, Black Bulb (corrected for Index errors), on the 5th, = 40.0
"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, = 47.6
Difference of above means or range ("exposed"), =

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 58.7
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 58.2
** Computed Temperature of Dew-Point, = 54.0
** Do. Elastic Force of Vapour, = 417
** Do. Weight of Vapour in a Cubic Foot of Air, =
** Relative Humidity (Saturation = 100), = 84
RAIN fell on 15 Days; Amount in Inches, = 4.47

WIND.		SUMMARY.							
Direction.		N	NE	E	SE	S	SW	W	NW
A.M.		3	1	2	2	10	4	2	7
P.M.		3	2	0	0	9	1	3	7
Mean.		3	2	1	1	9	2	3	7

Observations made and
Return verified by

(Signed)

John Forrest

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Maaldo House, County of Aberdeen, in Lat. 57°24', Long. 2°14', Distance from Sea 12 miles.Height of Cistern of the Barometer above Mean Sea-Level 180 feet, above Ground 3 feet.During the MONTH of August 1899.

The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				Rain.	WIND.				CLOUDS.				SUNSHINE.	THERMOMETERS under Ground.			SEA.	OZONE.	GENERAL REMARKS. As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc. Mention the hour at which Storms, including Thunder and Lightning, began and ended.	Days of Month.					
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.			9 h. A.M.		9 h. P.M.		9 A.M.		P.M.			9 h. A.M.											
		Barometer.	Attached Thermometer.	Barometer.	Attached Thermometer.	Max.	Min.	Max. in Sun's rays.	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.		No. of hours in which it fell.	Amount in inches.	Direction.	Force.	Direction.	Force.	Velocity (0-10), and Direction.	Amount (0-10), and Species.		Velocity (0-6) and Direction.	Amount (0-10), and Species.	No.					9 inches.	No.	12 inches.	No.	22 inches.
		* No.		No.		No.	No.	No.	No.	No.	No.	No.	No.		No.	No.	No.	No.	No.	No.	No.	No.		No.	No.	No.					No.	No.	No.	No.	No.
		inches.	°	inches.	°																														
	1	30.030	70	29.998	67	81	50	97	45	74	66	65	57		S.W.	W									64	63	61				1				
	2	30.002	67	30.010	59	68	52	76	47	64	58	55	53		N.W.	E									62	63	61				2				
	3	29.988	59	29.902	60	66	55	69	52	57	55	60	52		S.E.	S.E.									61	62	61				3				
	4	29.876	60	29.864	59	61	52	67	51	58	56	55	54		S.E.	S.E.									61	62	61				4				
	5	29.912	60	29.932	58	60	47	68	41	58	55	53	54		S.E.	S.E.									60	62	61				5				
	6	29.900	57	29.862	53	58	50	65	43	55	53	49	47		E	E									60	61	60				6				
	7	29.888	56	29.932	55	63	47	79	42	50	48	51	47		S.E.	N.W.									59	61	60				7				
	8	29.944	56	29.954	54	57	50	68	42	50	47	52	50		N.	N.									57	61	60				8				
	9	29.974	55	29.978	51	57	47	79	39	54	50	47	46		N.E.	S.E.									58	60	60				9				
	10	29.976	61	30.020	60	66	35	84	30	62	56	59	56		N.W.	E									56	59	60				10				
	11	30.052	60	30.068	58	70	48	87	44	56	50	50	48		N.W.	S.W.									59	60	60				11				
	12	30.036	66	30.088	59	72	45	86	39	66	60	56	54		W	N.E.									59	60	59				12				
	13	30.042	63	30.006	58	64	42	80	38	62	59	54	53		S	S.E.									59	60	59				13				
	14	29.968	57	29.856	59	67	47	77	44	55	54	56	55		S.E.	S.E.									60	60	59				14				
	15	29.662	66	29.628	60	72	56	84	51	65	61	57	53		W	W									62	61	60				15				
	16	29.658	62	29.298	57	63	47	74	41	61	53	55	51	+	N.W.	N.W.									58	61	60			Hurricane	16				
	17	29.604	54	29.694	55	52	48	74	45	55	51	52	48	+	N.W.	N.W.									56	60	60				17				
	18	29.776	56	29.886	50	58	45	71	38	53	50	45	44	+	N.W.	N.W.									56	59	59				18				
	19	29.888	56	29.932	58	62	39	80	33	55	51	50	47		S	S.W.									55	58	59				19				
	20	29.980	56	30.022	57	73	49	66	48	58	56	55	54	1/4	S.E.	S.E.									58	58	58				20				
	21	30.024	65	30.012	62	74	49	91	43	69	65	60	59		S.E.	S.W.									59	59	58				21				
	22	30.020	68	29.986	60	75	48	94	44	70	68	58	56		S.W.	S.E.									60	60	58				22				
	23	30.024	64	29.962	60	71	46	86	41	63	60	58	57		S.E.	S.E.									59	60	58				23				
	24	29.904	61	29.826	59	62	55	76	50	59	58	56	55		S.E.	S.E.									60	61	59				24				
	25	29.776	59	29.684	58	60	55	70	50	56	55	57	56		S.E.	S.E.									60	61	59				25				
	26	29.824	63	29.782	58	72	50	86	43	64	60	52	51		S.E.	S.W.									58	60	60				26				
	27	29.604	60	29.536	58	61	52	67	44	53	52	56	55	+	S.E.	S.E.									59	60	59			Fog	27				
	28	29.512	58	29.498	56	62	54	71	50	56	56	54	54	+	S.E.	S.E.									58	59	59			Fog	28				
	29	29.516	56	29.484	56	59	51	68	50	53	53	54	53		S.E.	S.E.									57	59	59			Fog	29				
	30	29.356	58	29.328	58	60	54	64	50	58	57	56	55	+	S.E.	S.E.									59	59	59			Fog Thunder	30				
	31	29.332	58	29.332	56	58	53	65	51	57	53	53	52	+	1/4 N.W.	N.W.									59	59	59				31				
Sums.		18123		18114		10	14	85	9	14	12	14	14												16	9	14								
Means.		2840		2818		14	27	19	12	27	17	14	7												18	18	18								
+ Total Corrections for Instrumental Errors.		+121		+121																															
+ Corrections for Diurnal Range.																																			
"Corrected Means."																																			
No. of Column.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction $\frac{1}{2}$ for Temp. (Col. 2), = 29.961 84 } = 29.877
"Corrected Mean" of Barometer at 9 P.M., minus the Correction $\frac{1}{2}$ for Temp. (Col. 4), = 29.939 78 } = 29.861
Mean at Station, corrected, and at 32°, = 29.869
Correction for height, feet above Mean Sea-level, = 195
Mean, reduced to 32°, and Sea-level, = 30.064
Highest Reading, corrected for Index error, on the 11 th, = 30.088
Lowest Do. Do., on the 16 th, = 29.8
Difference, or Monthly Range, = 0.290

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 22 th, = 75.0
Lowest in Month, corrected for Index errors, on the 10 th, = 35.0
Difference, or Monthly Range, = 40.0
"Corrected Mean" of all the Highest, (Col. 5), = 64.6
"Corrected Mean" of all the Lowest, (Col. 6), = 49.0
Difference, or Mean Daily Range, = 15.6
** Calculated Mean Temperature of Month, = 56.8
S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 22 th, = 94.0
"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, = 76.2
Lowest at Night, Black Bulb (corrected for Index errors), on the 10 th, = 30.0
"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, = 44.1
Difference of above means or range ("exposed"), =

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 56.6
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 54.0
Computed Temperature of Dew-Point, = 51.6
Do. Elastic Force of Vapour, = 383
Do. Weight of Vapour in a Cubic Foot of Air, =
Relative Humidity (Saturation = 100), = 83
RAIN fell on 7 Days; Amount in Inches, = 0.55

WIND.	SUMMARY.									
	Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.
A.M.	1	2	1	15	2	2	2	6		
P.M.	1	1	3	15		4	2	5		
Mean.	1	2	2	15	1	3	2	5	0	

Observations made and
Return verified by

John Forrest

(Signed)

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Gaddo House, County of Aberdeen, in Lat. 57°24' Long. 2°14', Distance from Sea 12 miles.

Height of Cistern of the Barometer above Mean Sea-Level 180 feet, above Ground 3 feet.

During the MONTH of September 1899.

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.		Days of Month.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs. Sun's rays on Grass.		9 h. A.M.		9 h. P.M.			9 h. A.M.		9 h. P.M.		9 A.M.		P.M.			9 h. A.M.					0-10.			As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
		Barometer. No.	Attached Thermometer	Barometer. No.	Attached Thermometer	Max. No.	Min. No.	Max. in Sun's rays No.	Min. on Grass. No.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.		No. of Squalls in which it fell.	Amount in inches.	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. 9 inches.			No. 10 inches.	No. 22 inches.		Temperature of Well at depth of feet, No.	Temperature at 1 fathom, and Density.	9 A.M.	9 P.M.	Mention the hour at which Storms, including Thunder and Lightning, began and ended.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
																																				* No.	inches.	°	inches.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°

NOTATION USED IN GENERAL REMARKS.

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

TABLE FOR ESTIMATING FORCE OF WIND.

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

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction \ddagger = 29.451
for Temp. (Col. 2), 29.511.....60
"Corrected Mean" of Barometer at 9 P.M., minus the Correction \ddagger = 29.471
for Temp. (Col. 4), 29.528.....57
Mean at Station, corrected, and at 32°,.....29.471
Correction for height, feet above Mean Sea-level,.....198
Mean, reduced to 32°, and Sea-level,.....29.669
Highest Reading, corrected for Index error, on the 10 th,.....29.884
Lowest Do. Do., on the 26 th,.....28.678
Difference, or Monthly Range,.....1.206

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 4 th,.....67.0
Lowest in Month, corrected for Index errors, on the 29 th,.....34.0
Difference, or Monthly Range,.....33.0
"Corrected Mean" of all the Highest, (Col. 5),.....57.0
"Corrected Mean" of all the Lowest, (Col. 6),.....42.7
Difference, or Mean Daily Range,.....14.3
** Calculated Mean Temperature of Month,.....49.9
S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the th,.....83.0
"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun,.....66.8
Lowest at Night, Black Bulb (corrected for Index errors), on the th,.....34.0
"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass,.....36.2
Difference of above means or range ("exposed"),.....

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11),.....50.0
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12),.....48.0
Computed Temperature of Dew-Point,.....45.9
Do. Elastic Force of Vapour,.....309
Do. Weight of Vapour in a Cubic Foot of Air,.....88
Relative Humidity (Saturation = 100),.....88
RAIN fell on 25 Days; Amount in Inches,.....4.08

WIND.	SUMMARY.									
	Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.
A.M.										
P.M.										
Mean.										

Observations made and
Return verified by

John Forrest

(Signed)

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Halls House, County of Merced, in Lat. 57° 24', Long. 2° 14', Distance from Sea 12 miles.

Height of Cistern of the Barometer above Mean Sea-Level 420 feet, above Ground 3 feet.

During the MONTH of October 1899

The Hours of Observation are of Greenwich Time.

ELECTRICITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER.				Rain.	WIND.				CLOUDS.				SUNSHINE. Hours.	THERMOMETERS under Ground.			Temperature of W.B.T. at depth of feet. No.	SEA. Temperature at 1 fathom, and Density.	OZONE. 0-10.	GENERAL REMARKS. As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc. Mention the hour at which Storms, including Thunder and Lightning, began and ended.	Days of Month.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.			9 h. A.M.		9 h. P.M.		9 A.M.		P.M.			9 h. A.M.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
		Barometer.	Attached Ther- mometer	Barometer.	Attached Ther- mometer	Max.	Min.	Max. in Sun-rays	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.		No. of inches it fell.	Amount in inches.	Direction.	Force	Direction.	Force	Velocity (0-6) and Direc- tion.	Amount (0-10), and Species.		Velocity (0-6) and Direc- tion.	Amount (0-10), and Species.	No.						9 inches.	12 inches.	22 inches.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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BAROMETER, "corrected Mean" at 9 A.M., <i>minus</i> the Correction $\left. \begin{array}{l} \text{for Temp. (Col. 2),} = \end{array} \right\} =$	<u>29.695</u>
"Corrected Mean" of Barometer at 9 P.M., <i>minus</i> the Correction $\left. \begin{array}{l} \text{for Temp. (Col. 4),} = \end{array} \right\} =$	<u>29.690</u>
Mean at Station, corrected, and at 32°,.....	<u>29.690</u>
Correction for height, feet above Mean Sea-level,.....	<u>199</u>
Mean, reduced to 32°, and Sea-level,	<u>29.892</u>
Highest Reading, corrected for Index error, on the 21 st th,.....	<u>30.339</u>
Lowest Do. Do., on the 29 th th,.....	<u>29.004</u>
Difference, or Monthly Range,	<u>1.335</u>

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 20 th th.....	=	64.0
Lowest in Month, corrected for Index errors, on the th,	=	29.0
Difference, or Monthly Range,	=	35.0
"Corrected Mean " of all the Highest, (Col. 5),	=	53.4
"Corrected Mean " of all the Lowest, (Col. 6),.....	=	40.6
Difference, or Mean Daily Range,	=	12.8
** Calculated Mean Temperature of Month,	=	47.0
<hr/>		
S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 1 st D th,.....	=	78.0
"Corrected Mean, " (Col. 7), of Black Bulb, Max. in Sun,	=	61.35
Lowest at Night, Black Bulb (corrected for Index errors), on the 15 th th,.....	=	23.0
"Corrected Mean, " (Col. 8), of Black Bulb, Min. on grass,.....	=	33.1
Difference of above means or range ("exposed"),	=	

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11),	=	45.6
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12),	=	43.8
‡ Computed Temperature of Dew-Point,	=	41.7
‡ Do. Elastic Force of Vapour,	=	2.66
‡ Do. Weight of Vapour in a Cubic Foot of Air,	=	
‡ Relative Humidity (Saturation = 100),	=	87
RAIN fell on 16 Days; Amount in Inches,	=	1.07

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	1	1	3	10	5	5	5			
P.M.	2	—	1	5	5	7	2	9			
Mean.	2	1	1	4	7	6	3	7	—		

Observations made and
Return verified by

(Signed)

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Gando House, County of Aberdeen, in Lat. 57° 24' Long. 2° 14', Distance from Sea 12 miles.

Height of Cistern of the Barometer above Mean Sea-Level 120 feet, above Ground 3 feet.

During the MONTH of November 1899.

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 h. A.M.		9 h. P.M.		9 h. A.M.												
		Barometer.	Attached Thermometer.	Barometer.	Attached Thermometer.	Max.	Min.	Max. in Sunrays.	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.		Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	Direction.	Force.	Direction.	Force.	Velocity (0-6) and Direction.	Amount (0-10), and Species.	Velocity (0-6) and Direction.					Amount (0-10), and Species.	No. 3 inches.	No. 12 inches.	No. 22 inches.		
		* No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.					No.	No.	No.	No.	No.	No.
		inches.	°	inches.	°	°	°	°	°	°	°	°	°		°	°	°	°	°	°	°	°	°	°	°					°	°	°	°	°	°
	1	29.532	51	29.182	48	5.2	42	51	38	5.1	47	48	45			S	S.W									42	44	45			fade	1			
	2	28.956	52	28.848	49	5.6	45	5.7	42	5.2	47	46	+			S	S.W									45	44	45				2			
	3	28.752	49	28.532	44	5.0	39	5.2	35	4.6	43	42	40	+			S.W	N.W								44	44	45			Hurricane	3			
	4	29.036	42	28.748	51	5.4	36	5.4	30	4.0	38	53	52	+			W	S								42	44	45			fade	4			
	5	28.942	49	29.462	45	5.2	42	5.6	34	4.7	43	43	40	+	75		S.W	S.W								45	45	45			fade	5			
	6	29.200	46	29.404	40	5.0	26	5.5	30	4.7	43	36	35	+			S	W								42	44	45			fade	6			
	7	29.358	48	29.884	49	5.2	34	5.1	28	4.7	46	50	48				S	S								43	43	45			fade	7			
	8	28.732	50	28.658	44	5.0	40	5.7	34	4.7	45	42	41				S	S.W								45	44	45				8			
	9	29.288	40	29.514	38	5.0	34	5.0	30	3.7	35	34	33				N.W	N.W								40	44	45				9			
	10	29.081	44	28.862	46	4.9	30	4.9	26	4.4	43	46	45	+			S.W	S.W								41	43	45				10			
	11	29.124	41	29.482	40	4.6	26	4.9	30	3.7	35	38	36				S.W	W								40	43	45			fade	11			
	12	29.748	41	29.784	45	5.0	36	4.9	31	4.0	39	46	46	+	46		W	S.W								40	42	44				12			
	13	29.704	49	29.676	49	5.4	45	5.4	39	5.0	49	49	46				S.W	S.W								43	43	44				13			
	14	29.635	50	30.090	38	5.1	35	5.3	30	4.9	47	35	34	+			N.W	N.W								44	43	44				14			
	15	30.335	35	30.334	34	4.2	29	4.3	24	3.1	30	29	29				S.W	S.W								38	43	44				15			
	16	30.268	32	30.318	44	4.5	25	4.4	22	2.5	27	45	44				S.W	S.W								35	41	43				16			
	17	30.372	42	30.410	43	5.0	41	7.0	36	4.1	40	44	45				W	N.W								41	41	43				17			
	18	30.324	43	30.114	39	4.7	34	5.0	28	4.2	42	37	34				S.W	N.W								41	41	43				18			
	19	29.456	44	29.792	48	5.0	34	5.1	28	4.5	43	44	48	+	10		S.W	N.W								39	42	43				19			
	20	30.008	41	30.062	38	4.8	34	5.0	30	3.9	37	35	34				N.W	N.W								41	42	43				20			
	21	29.852	43	29.828	47	5.0	34	5.3	30	4.3	42	48	46	+			S.W	S.W								39	42	43				21			
	22	29.944	41	29.960	46	4.8	42	4.8	35	4.5	44	44	42	+			W	W								42	42	43				22			
	23	29.652	52	29.608	51	5.5	43	5.5	39	5.2	49	5.2	50				W	W								43	42	43				23			
	24	29.404	54	29.752	44	5.5	41	5.4	39	5.4	51	41	40	+			W	N.W								46	43	43				24			
	25	29.856	46	29.872	45	4.7	36	4.8	32	4.3	42	43	42				S.W	S.W								42	43	43				25			
	26	29.612	51	29.574	51	5.6	41	5.5	34	5.0	48	5.1	49	+	19		S.W	W								42	42	43				26			
	27	29.712	53	29.768	51	5.3	45	5.4	38	5.3	50	5.2	48				W	W								44	44	44				27			
	28	29.764	54	29.820	54	5.7	49	5.7	42	5.4	50	5.6	52				W	W								45	44	44				28			
	29	29.888	53	29.918	43	5.5	38	5.8	33	5.0	46	38	37				W	W								45	44	44				29			
	30	29.798	46	29.520	48	4.9	32	4.8	27	4.3	41	48	45				S	S								39	43	44			fade	30			
	31																																31		
Sums.		16313		171411		11	12	13	13	11	12	15	13														1258	1290	1320						
Means.		889.889	382	888.754	1352	1523	1128	1575	958	1347	1285	1321	1271														5	9	10						
+ Total Corrections for Instru- mental Errors.		29.453	401	29.592	45	50.8	37.6	52.5	33.3	44.9	42.8	44.4	42.1	13	1.50												41.9	430	440						
+ Corre- ctions for Diurnal Range.		59.6																																	
+ Corre- ctions for Diurnal Range.		+120		+120																															
"Cor- rected Means."																																			
No. of Column.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction $\uparrow\uparrow$ =	29.670
for Temp. (Col. 2), = 716 - 46	
"Corrected Mean" of Barometer at 9 P.M., minus the Correction $\uparrow\uparrow$ =	29.668
for Temp. (Col. 4), = 712 - 44	
Mean at Station, corrected, and at 32°,..... =	29.669
Correction for height, feet above Mean Sea-level,..... =	198
Mean, reduced to 32°, and Sea-level, =	29.867
Highest Reading, corrected for Index error, on the 17 th,..... =	30.410
Lowest Do. Do., on the 3 th,..... =	28.532
Difference, or Monthly Range, =	1.878

S.-R. THERMOMETER, (in shade, etc.). Highest in Month, (corrected for Index Errors), on the 28 th	=	<u>57.0</u>
Lowest in Month, corrected for Index errors, on the 16 th ,	=	<u>27.0</u>
Difference, or Monthly Range,	=	<u>30.0</u>
"Corrected Mean " of all the Highest, (Col. 5),	=	<u>50.8</u>
"Corrected Mean " of all the Lowest, (Col. 6).....	=	<u>39.6</u>
Difference, or Mean Daily Range,	=	<u>11.2</u>
** Calculated Mean Temperature of Month,	=	<u>45.2</u>
S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 17 th ,	=	<u>70.0</u>
"Corrected Mean, " (Col. 7), of Black Bulb, Max. in Sun,	=	<u>52.8</u>
Lowest at Night, Black Bulb (corrected for Index errors), on the 16 th ,	=	<u>22.0</u>
"Corrected Mean, " (Col. 8), of Black Bulb, Min. on grass,.....	=	<u>33.3</u>
Difference of above means or range ("exposed"),	=	

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb , (Cols. 9 and 11),	=	44.5
Mean (corrected) A.M. and P.M. Reading of Wet Bulb , (Cols. 10 and 12),	=	42.6
‡ Computed Temperature of Dew-Point ,	=	38.2
‡ Do. Elastic Force of Vapour ,	=	.230
‡ Do. Weight of Vapour in a Cubic Foot of Air ,	=	
‡ Relative Humidity (Saturation = 100),	=	74
RAIN fell on 13 Days; Amount in Inches,	=	1.50

WIND.		SUMMARY.							Calm or Variable.	Mean Force.	Mean Velocity in miles per day
Direction.	N	NE	E	SE	S	SW	W	NW			
A.M.				2	6	10	9	3			
P.M.				1	3	10	8	8			
Mean.	0	00		2	4	10	8	00			

Observations made and Return verified by	}

(Signed)

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Haddo House, County of Aberdeen, in Lat. 57° 24', Long. 2° 14', Distance from Sea 12 miles.

Height of Cistern of the Barometer above Mean Sea-Level 180 feet, above Ground 3 feet.

During the MONTH of December 1899.

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.				SUNSHINE. Hours.	SEA.	OZONE.	GENERAL REMARKS. As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc. Mention the hour at which Storms, including Thunder and Lightning, began and ended.		Days of Month.								
		9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.			9 h. A.M.		9 h. P.M.		9 h. A.M.		9 h. P.M.		9 h. A.M.		9 h. P.M.															
		Barometer.	Attached Thermometer.	Barometer.	Attached Thermometer.	Max.	Min.	Max. in Sun-rays.	Min. on Grass.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.		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.	Temperature of Wind at 500 ft. of Alt., 26.	Temperature at 1 fathom, and Beach.	9 A.M.	9 P.M.	
		* No.		No.		No.	No.	No.	No.	No.	No.	No.	No.		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.							No.	No.	No.	No.	No.	No.	No.	No.
		inches.	°	inches.	°	°	°	°	°	°	°	°	°		°	°	°	°	°	°	°	°	°	°	°	°							°	°	°	°	°	°	°	°
	1	29.412	44	29.574	42	48	38	48	33	41	39	41	40	+	S.W.	N.W.																	1							
	2	29.938	43	30.098	37	41	32	41	29	41	37	33	32	+	N.W.	N.W.																	2							
	3	30.022	38	29.728	40	39	23	40	20	32	31	40	40	+	S.	S.E.																	3							
	4	29.506	30	29.788	42	53	38	51	30	52	50	40	39	+	W.	N.W.																	4							
	5	29.852	36	29.724	37	40	20	39	27	31	30	37	36	+	W.	S.E.																	5							
	6	29.578	45	29.434	44	44	36	44	34	41	40	44	44	+	S.E.	S.E.																	6							
	7	29.538	46	29.602	41	43	41	42	40	42	40	40	39	+	S.E.	S.E.																	7							
	8	29.632	43	29.768	37	45	33	44	20	40	36	34	33		S.	S.E.																	8							
	9	29.902	38	29.870	35	37	31	37	27	35	34	32	29	+	S.	S.																	9							
	10	29.796	31	29.866	32	35	27	36	22	27	26	24	22	+	S.	S.E.																	10							
	11	29.860	37	29.468	35	35	29	36	23	33	30	34	32	+	S.	S.E.																	11							
	12	29.448	34	29.524	24	34	23	36	21	31	31	28	26	+	S.	S.W.																	12							
	13	29.272	33	29.246	36	35	23	34	16	32	31	35	34	+	S.E.	S.																	13							
	14	29.358	31	29.396	25	35	22	34	15	28	27	24	20	+	S.E.	S.W.																	14							
	15	29.346	26	29.320	33	33	10	32	5	23	23	33	32	+	S.E.	S.																	15							
	16	29.280	38	29.472	40	41	32	40	24	37	36	41	40	+	S.	S.																	16							
	17	29.760	40	29.861	37	41	35	40	33	37	35	36	35	+	S.E.	S.E.																	17							
	18	29.860	38	29.768	37	38	34	38	32	37	36	36	35	+	S.E.	S.E.																	18							
	19	29.746	40	29.708	39	39	32	39	26	39	37	39	37		S.E.	S.E.																	19							
	20	29.898	42	29.972	40	40	38	40	36	40	39	39	39	+	S.E.	S.E.																	20							
	21	30.108	41	30.142	36	40	35	38	34	37	36	36	35	+	S.E.	S.E.																	21							
	22	29.948	36	29.768	33	36	29	36	26	35	34	29	29	+	S.	S.E.																	22							
	23	29.976	29	29.594	35	35	24	38	20	25	25	35	35	+	S.	S.E.																	23							
	24	29.512	32	29.434	34	37	32	37	28	32	30	33	33	+	S.	S.																	24							
	25	29.336	32	29.206	30	35	27	36	22	32	31	28	27	+	S.W.	S.W.																	25							
	26	29.154	30	29.132	33	33	24	34	19	28	28	33	32	+	N.W.	N.W.																	26							
	27	29.122	32	29.198	33	33	26	33	23	31	30	33	33	+	N.E.	N.W.																	27							
	28	29.288	21	29.022	32	32	19	32	17	23	22	32	32	+	S.E.	N.E.																	28							
	29	28.568	35	28.272	39	40	29	39	31	35	35	40	40	+	S.	S.																	29							
	30	28.248	38	28.368	36	41	35	40	33	38	37	36	35	+	S.W.	S.W.																	30							
	31	28.649	39	29.302	38	38	35	37	32	37	36	38	38	+	S.W.	N.W.																	31							
Sums.		1615.15		1512.14		12	14	14	11	12	12	14	12																											
Means.		51.48	1133	914.707	1119	1196	922	1201	808	1010	1035	1085	1051																											
+ Total Corrections for Instru- mental Errors.		29.506	30.6	29.507	36	38.6	29.9	38.4	26.1	34.8	33.4	50	34.2	27	5.21																									
+ Corrections for Diurnal Range.		+120		+120				+20																																
"Cor- rected Means."																																								
No. of Column.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30									

BAROMETER,	"corrected Mean" at 9 A.M., <i>minus</i> the Correction $\uparrow\uparrow$	=	29.605
	for Temp. (Col. 2), = 29.626.....21.....		
	"Corrected Mean" of Barometer at 9 P.M., <i>minus</i> the Correction $\uparrow\uparrow$	=	29.607
	for Temp. (Col. 4), = 29.627.....20.....		
Mean at Station, corrected, and at 32°,.....		=	29.606
Correction for height, feet above Mean Sea-level,.....		=	203
Mean, reduced to 32°, and Sea-level,		=	29.809
Highest Reading, corrected for Index error, on the 21 th,.....		=	30.142
Lowest Do. Do., on the 30 th,.....		=	28.248
Difference, or Monthly Range,		=	1.894

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 1 st / th.....	=	<u>48-0</u>
Lowest in Month, corrected for Index errors, on the 15 th ,	=	<u>12-0</u>
Difference, or Monthly Range,	=	<u>36-0</u>
"Corrected Mean " of all the Highest, (Col. 5),	=	<u>38-6</u>
"Corrected Mean " of all the Lowest, (Col. 6),.....	=	<u>31-9</u>
Difference, or Mean Daily Range,	=	<u>6-7</u>
** Calculated Mean Temperature of Month,	=	<u>35-3</u>
 S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 1 st / th,.....	=	<u>48-0</u>
"Corrected Mean, " (Col. 7), of Black Bulb, Max. in Sun,	=	<u>38-4</u>
Lowest at Night, Black Bulb (corrected for Index errors), on the 15 th ,	=	<u>5-0</u>
"Corrected Mean, " (Col. 8), of Black Bulb, Min. on grass,.....	=	<u>26-1</u>
Difference of above means or range ("exposed"),	=	

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb , (Cols. 9 and 11),	=	34.8
Mean (corrected) A.M. and P.M. Reading of Wet Bulb , (Cols. 10 and 12),	=	33.8
‡‡ Computed Temperature of Dew-Point ,	=	32.4
‡‡ Do. Elastic Force of Vapour ,	=	.182
‡‡ Do. Weight of Vapour in a Cubic Foot of Air ,	=	
‡‡ Relative Humidity (Saturation = 100),	=	91
RAIN fell on 27 Days; Amount in Inches,	=	5.21

WIND.		SUMMARY.									
Direction.	N	NE	E	SE	S	SW	W	NW	Calm or Variable.	Mean Force.	Mean Velocity in miles per day
A.M.		1	2	11	9	3	2	3			
P.M.		1	1	14	5	4		6			
Mean.	0	1	2	12	7	3	1	3			

Observations made and
Return verified by

(Signed)

