

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *Fintrane Station, Granton*, County of *Edinburgh*, in Lat. *55°58'54"* Long. *3°9'55"* Distance from Sea *0* miles.Height of Cistern of the Barometer above *Mean Sea-level* *4* feet, above Ground *—* feet.During the MONTH of *May* 188*4*.

The Hours of Observation are of Greenwich Time.

| Days of Month. | BAROMETER. | | | | SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M. | | HYGROMETER. No. — | | WIND. | | RAIN. | | CLOUDS. | | | | SUNSHINE. | | HYGROMETER. ON ARK 76.77. | | TEMPERATURE OF SEA. BOTTOM SURFACE | | 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. | | HYGROMETER ON ARK 9 AM Dry Wet | | 9 h. A.M. | | 9 h. P.M. | | 9 h. A.M. | | 9 h. P.M. | | Readings of the H. Cup Anemometer. No. — | | No. of hours in which it fell. | | Amount in inches. | | Velocity (0—10), and Direction. | | | Amount (0—10), and Species. | | Velocity (0—10), and Direction. | | Amount (0—10), and Species. | | Hours. | | No. 22 inches. | | | |
| | Barometer. No. 511. | Attach- ed Ther- mometer. | Barometer. No. 511. | Attach- ed Ther- mometer. | Max. No. | Min. No. | Dry | Wet | Dry bulb. | Wet bulb. | Dry bulb. | Wet bulb. | Direction. | Force. | Direction. | Force. | No. 9 h. A.M. | No. 9 h. P.M. | No. 9 h. A.M. | No. 9 h. P.M. | No. 9 h. A.M. | No. 9 h. P.M. | No. 9 h. A.M. | No. 9 h. P.M. | | No. 9 h. A.M. | No. 9 h. P.M. | No. 9 h. A.M. | No. 9 h. P.M. | No. 9 h. A.M. | No. 9 h. P.M. | No. 9 h. A.M. | No. 9 h. P.M. | No. 9 h. A.M. | No. 9 h. P.M. | | |
| | inches. | ° | inches. | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | |
| 1 | 29.480 | 45 | 29.378 | 43 | 49.9 | 37.5 | 43.5 | 41.9 | 43 | 41.1 | 40.8 | 37.8 | WGS fresh | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | Overcast at 9 P.M. Halcyon moon. | 1 | |
| 2 | 29.419 | 48 | 29.334 | 46.5 | 50 | 42.5 | 44 | 41.1 | 45.5 | 41.4 | 42.2 | 39.5 | WGS | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | Hail shower 9 A.M. Showery all day. | 2 | | |
| 3 | 29.103 | 43.9 | 29.052 | 44.5 | 42.5 | 37.5 | 38.9 | 37.6 | 42.8 | 46.5 | 39.9 | 38.5 | SW light | W | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 3 | | |
| 4 | 29.009 | 46.5 | 29.245 | 44 | 48.2 | 37.8 | 42.2 | 40.6 | 42.9 | 40.6 | 39.5 | 38.5 | SW light | W | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 4 | | |
| 5 | 29.357 | 45.6 | 29.565 | 47.8 | 50.9 | 37.5 | 45.9 | 42.6 | 45.2 | 42 | 45 | 41 | — | W | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 5 | | |
| 6 | 29.740 | 49.5 | 29.928 | 46.9 | 52 | 40 | 45.9 | 42 | 45.5 | 41 | 41.5 | 40 | W | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 6 | | |
| 7 | 29.949 | 46.2 | 29.585 | 48.6 | 51 | 36.5 | 43 | 40.6 | 42.5 | 41 | 45.9 | 44 | W | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 7 | | |
| 8 | 29.623 | 52 | 29.799 | 51.5 | 55 | 42.5 | 50.6 | 46.6 | 51 | 46.1 | 49 | 47.5 | W | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 8 | | |
| 9 | 29.745 | 46.2 | 30.041 | 55.5 | 61.5 | 45 | 45 | 45 | 44 | 44 | 44 | 44 | W | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 9 | | |
| 10 | 30.130 | 58.9 | 30.131 | 56 | 59.8 | 47.9 | 58 | 54.6 | 58 | 53.5 | 52.5 | 50.5 | W | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 10 | | |
| 11 | 30.009 | 55.5 | 29.905 | 58.6 | 64.5 | 44.5 | 50.5 | 49.5 | 49 | 47.9 | 52.5 | 53 | W | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 11 | | |
| 12 | 30.017 | 57 | 30.028 | 55 | 60 | 49.5 | 52 | 50.5 | 55 | 50.4 | 52 | 48.2 | W | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 12 | | |
| 13 | 30.001 | 57.5 | 29.780 | 49.5 | 61.7 | 40.5 | 49 | 47.9 | 50 | 47.8 | 50.5 | 46.2 | W | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 13 | | |
| 14 | 29.749 | 56 | 29.931 | 60.8 | 58 | 49 | 57 | 43.5 | 54.1 | 51.1 | 49 | 45 | W | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 14 | | |
| 15 | 29.752 | 52 | 29.800 | 54 | 56 | 49 | 57 | 43.5 | 54.1 | 51.1 | 49 | 45 | W | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 15 | | |
| 16 | 29.758 | 53 | 29.654 | 56.5 | 60 | 52 | 50.2 | 50.5 | 49.9 | 49.5 | 57 | 55 | W | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 16 | | |
| 17 | 29.588 | 55.5 | — | — | 58 | 52 | 53 | 52 | 53 | 51.1 | 52 | 48 | SW | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 17 | | |
| 18 | 29.666 | 50.9 | 29.862 | 50.9 | 54.5 | 44.5 | 48 | 46.7 | 48 | 44 | 44.2 | 41.8 | W | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 18 | | |
| 19 | 29.942 | 51.5 | 29.976 | 48.2 | 53 | 37.2 | 47 | 45.2 | 49.8 | 46 | 42.5 | 41.5 | W | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 19 | | |
| 20 | 30.072 | 51 | 30.232 | 51.1 | 55 | 40.5 | 47.1 | 44.5 | 47 | 44.5 | 46.5 | 42 | WNW | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 20 | | |
| 21 | 30.339 | 52 | 30.329 | 53.2 | 56 | 36.5 | 51 | 49 | 48.5 | 46 | 51 | 48 | SW | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 21 | | |
| 22 | 30.408 | 58 | 30.420 | 61 | 69 | 50.5 | 57 | 55.5 | 57 | 53.5 | 58 | 56 | W | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 22 | | |
| 23 | 30.376 | 59 | 30.274 | 56 | 69.5 | 42 | 54 | 51.2 | 58.2 | 50.5 | 53 | 50 | WNW | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 23 | | |
| 24 | 30.290 | 55.5 | 30.292 | 58.5 | 55.2 | 45.5 | 52.1 | 51.5 | 56.1 | 50 | 45.5 | 45.2 | NE | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 24 | | |
| 25 | 30.323 | 62 | 30.349 | 49.2 | 50.5 | 46.9 | 50.5 | 49 | 49.5 | 47.5 | 46.9 | 48 | E | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 25 | | |
| 26 | 30.419 | 52.1 | 30.450 | 60 | 50.1 | 46 | 49.5 | 41.5 | 48.2 | 43.2 | 46.1 | 45 | E | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 26 | | |
| 27 | 30.448 | 53 | 30.414 | 51 | 57.2 | 46.8 | 48.2 | 47 | 47 | 45.1 | 46.2 | 44.9 | NE | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 27 | | |
| 28 | 30.419 | 53 | 30.424 | 52 | 53.9 | 42.5 | 51.7 | 49 | 47.3 | 44 | 47 | 45 | NW | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 28 | | |
| 29 | 30.409 | 50.2 | 30.350 | 53 | 51 | 46 | 49.9 | 48 | 48.2 | 39.1 | 47 | 45.5 | E | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 29 | | |
| 30 | 30.258 | 51 | 30.250 | 52 | 53 | 45.5 | 48 | 47 | 47.1 | 45.5 | 49 | 46 | SE | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 30 | | |
| 31 | 30.249 | 52.5 | 30.225 | 53 | 57.5 | 44 | 52.1 | 52 | 52.7 | 49 | 48 | 45.9 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 31 | | |
| Sums. | 1312.7 | 148 | 1415.0 | 138 | 137 | 138 | 137 | 138 | 137 | 138 | 137 | 138 | 137 | 138 | 137 | 138 | 137 | 138 | 137 | 138 | 137 | 138 | 137 | 138 | 137 | 138 | 137 | 138 | 137 | 138 | 137 | 138 | 137 | 138 | 137 | 138 | |
| Means. | 29.937 | 52.3 | 29.960 | 52.2 | 55.8 | 43.6 | 49.5 | 46.9 | 49.0 | 46.0 | 48.0 | 45.5 | | | | | | | | | | | | | | | | | | | | | | | | | |
| + Total Corrections for Instrumental Errors. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| + Corrections for Diurnal Range. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| "Corrected Means." | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. of Column. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | | | | | | | |

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction $\dagger\dagger$ = *29.873*
for Temp. (Col. 2), = *29.937*..... *64*..
Corrected Mean" of Barometer at 9 P.M., minus the Correction $\dagger\dagger$ = *29.896*
for Temp. (Col. 4), = *29.960*..... *64*..
Mean at Station, corrected, and at 32°,..... = *29.884*
Correction for height, feet above Mean Sea-level,..... = *4*
Mean, reduced to 32°, and Sea-level,..... = *29.888*
Highest Reading, corrected for Index error, on the 26 th,..... = *30.450*
Lowest Do. Do., on the 3 th,..... = *28.952*
Difference, or Monthly Range,..... = *1.498*

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 11 th,..... = *49.5*
Lowest in Month, corrected for Index errors, on the 7 th,..... = *36.5*
Difference, or Monthly Range,..... = *33.0*
"Corrected Mean" of all the Highest, (Col. 5),..... = *56.6*
"Corrected Mean" of all the Lowest, (Col. 6),..... = *49.0*
Difference, or Mean Daily Range,..... = *12.6*
* Calculated Mean Temperature of Month,..... = *49.3*
S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 11 th,..... =
"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun,..... =
Lowest at Night, Black Bulb, (corrected for Index errors), on the 11 th,..... =
"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass,..... =
Difference of above Means or Range ("exposed"),..... =

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11),..... = *48.5*
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12),..... = *46.7*
Computed Temperature of Dew-Point,..... = *44.8*
Do. Elastic Force of Vapour,..... = *39.7*
Do. Weight of Vapour in a Cubic Foot of Air, ... =
Relative Humidity, (Saturation = 100),..... = *87*
RAIN fell on Days; Amount in Inches,..... =

| WIND. | | SUMMARY. | | | | | | | | | |
|------------|---|----------|---|----|---|----|----|----|--------------------|-------------|---------------------------------|
| Direction. | N | NE | E | SE | S | SW | W | NW | Calms or Variable. | Mean Force. | Mean Velocity in miles per day. |
| A.M. | | 2 | 3 | 1 | 1 | 4 | 1 | 2 | | | |
| P.M. | | 2 | 1 | 4 | 3 | 5 | 12 | 4 | | | |
| Mean. | | 1 | 2 | 3 | 1 | 2 | 4 | 1 | | | |

Observations made and
Return verified by *M. J. Lufford*
Hugh Robert Mill

(Signed) *Hugh Robert Mill*

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Granton, County of Edinburgh, in Lat. 55° 55' N, Long. 3° 10' W, Distance from Sea 1 miles.Height of Cistern of the Barometer above Mean Sea-level 4 feet, above Ground 4 feet.During the MONTH of June 1888.

The Hours of Observation are of Greenwich Time.

| ELECTRICITY. | Days of Month. | BAROMETER. | | | | SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M. | | | | HYGROMETER. No. — | | | | WIND. | | | | RAIN. | | CLOUDS. | | | | THERMOMETERS under Ground. | | | | SEA. | | GENERAL REMARKS. | | Days of Month. |
|--|----------------|------------|------------|-----------|------------|---|------------|--------------------------|------------|----------------------|------------|-----------|------------|-----------|------------|-----------|------------|--|------------|---|------------|---------|------------|-------------------------------|------------|-----------------|------------|---------|------------|------------------|------------|----------------|
| | | 9 h. A.M. | | 9 h. P.M. | | Protected in Shade, 4 feet above Ground. | | HYGROMETER Black Box. | | 9 h. A.M. | | 9 h. P.M. | | 9 h. A.M. | | 9 h. P.M. | | Readings of the H. Cup Anemometer. | | No. of hours in which it fell. | | 9 A.M. | | 9 P.M. | | No. of feet. | | 9 A.M. | | 9 P.M. | | |
| | | No. | Barometer. | No. | Barometer. | No. | Barometer. | No. | Barometer. | No. | Barometer. | No. | Barometer. | No. | Barometer. | No. | Barometer. | No. | Barometer. | No. | Barometer. | No. | Barometer. | No. | Barometer. | No. | Barometer. | No. | Barometer. | No. | Barometer. | |
| | | inches. | inches. | inches. | inches. | inches. | inches. | inches. | inches. | inches. | inches. | inches. | inches. | inches. | inches. | inches. | inches. | inches. | inches. | inches. | inches. | inches. | inches. | inches. | inches. | inches. | inches. | inches. | inches. | inches. | inches. | |
| 1 | 29.832 | 57.2 | 29.534 | 56 | 63.1 | 46 | 59.5 | 55.5 | 58.8 | 53 | 53.5 | 50.9 | 58.8 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 1 | |
| 2 | 6.44 | 58.2 | 7.38 | 57 | 66 | 52.9 | 58.9 | 55.9 | 62.5 | 55.8 | 51.9 | 32 | 86.8 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 2 | |
| 3 | 8.42 | 55 | 8.52 | 53 | 54.5 | 44 | 52 | 52 | 51.2 | 48 | 49 | 96 | 2 | 8.9 | 2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 3 | |
| 4 | 8.80 | 51 | 9.00 | 54 | 54.1 | 46.5 | 48 | 47.5 | 47.1 | 46.9 | 50 | 48 | 8.9 | 1 | 8 | 5 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 4 | |
| 5 | 8.64 | 51 | 7.76 | 52 | 52 | 46.5 | 49.5 | 47.9 | 47.1 | 45.5 | 49 | 49 | 8.8 | 5 | 8.8 | 0 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 5 | |
| 6 | 7.24 | 50.5 | 7.50 | 53 | 53 | 46 | 49.9 | 49 | 49 | 47.7 | 47 | 46.2 | 8 | 1 | 8.8 | 0 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 6 | |
| 7 | 8.06 | 55 | 7.50 | 52.5 | 54 | 45.9 | 52.7 | 50.3 | 52 | 47.2 | 50.2 | 49 | 8.8 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 7 | |
| 8 | 8.82 | 52.1 | 9.36 | 50.9 | 53.6 | 41.4 | 50.7 | 49.2 | 50 | 44.9 | 50 | 44.9 | 9.6 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 8 | |
| 9 | 0.22 | 53.2 | 30.078 | 52 | 52.9 | 45 | 52 | 51.1 | 51.1 | 45.9 | 45.9 | 45.7 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 9 | |
| 10 | 1.10 | 56.5 | 1.26 | 59.2 | 61.9 | 47.8 | 55 | 53 | 56 | 50.7 | 56.5 | 52 | 8.8 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 10 | |
| 11 | 0.46 | 59.1 | 1.59 | 57 | 60.2 | 52 | 57.8 | 57 | 54 | 53.2 | 52 | 47 | 8.8 | 2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 11 | |
| 12 | 3.33 | 58.5 | 3.25 | 61 | 65 | 47.5 | 56 | 54 | 55.2 | 49.2 | 60 | 55 | 8.8 | 3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 12 | |
| 13 | 2.04 | 67 | 3.46 | 58.5 | 70 | 51.5 | 67.5 | 65.5 | 67.5 | 60.1 | 57.5 | 46.5 | 8.8 | 2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 13 | |
| 14 | 3.40 | 57.5 | 4.18 | 56 | 59.5 | 47.6 | 53.7 | 52 | 54 | 49 | 51 | 45.1 | 8.8 | 2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 14 | |
| 15 | 3.26 | 58 | 3.52 | 58 | 61.5 | 48 | 55.5 | 53.9 | 54.5 | 54 | 55 | 54.9 | 8.8 | 2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 15 | |
| 16 | 3.14 | 55 | 2.18 | 56 | 56 | 47 | 53.9 | 52.6 | 54.9 | 49.9 | 52.2 | 50.1 | 8.8 | 5 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 16 | |
| 17 | 2.14 | 60 | 2.61 | 57 | 61.8 | 50.4 | 60.8 | 59.5 | 52.4 | 54 | 54.3 | 51.7 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 17 | |
| 18 | 2.80 | 58.3 | 2.99 | 56.2 | 58.5 | 51.3 | 54 | 53.1 | 54 | 51.2 | 57 | 56.1 | 8.8 | 0.5 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 18 | |
| 19 | 3.20 | 58.5 | 3.34 | 56.9 | 59.9 | 49 | 56 | 54.5 | 55.1 | 51.9 | 52 | 50 | 8.8 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 19 | |
| 20 | 3.42 | 58 | 3.17 | 57.3 | 58.2 | 50.9 | 56 | 54.9 | 54 | 51.2 | 53 | 51.1 | 8.8 | 2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 20 | |
| 21 | 2.38 | 57 | 2.60 | 56.5 | 59.3 | 47.2 | 56.2 | 54.7 | 57 | 52.6 | 53 | 51.1 | 8.8 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 21 | |
| 22 | 2.16 | 57.5 | 1.36 | 57.2 | 65 | 51 | 57.6 | 56.9 | 55.1 | 52.8 | 53 | 51 | 8.8 | 2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 22 | |
| 23 | 1.52 | 59 | 0.44 | 57 | 62.7 | 49.7 | 56 | 54.5 | 57 | 50.2 | 52.5 | 49.7 | 0 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 23 | |
| 24 | 2.9 | 88.0 | 2.9 | 78.6 | 54.8 | 63 | 53.7 | 59.2 | 58.8 | 59.2 | 55.9 | 55 | 52.2 | 8.8 | 3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 24 | |
| 25 | 30.044 | 57.5 | 30.160 | 60 | 59.7 | 44.9 | 55 | 54 | 55.2 | 50.2 | 54.9 | 54.9 | 8.8 | 5 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 25 | |
| 26 | 1.00 | 63 | 1.60 | 64 | 65 | 58 | 60 | 59 | 58.7 | 57 | 60 | 57.5 | 8.8 | 3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 26 | |
| 27 | 2.22 | 59 | 2.24 | 60 | 61.5 | 49.9 | 57 | 56.2 | 54.8 | 52.9 | 58 | 56.2 | 0 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 27 | |
| 28 | 3.22 | 63.4 | 2.40 | 63.4 | 73.9 | 52 | 62.2 | 61 | 67 | 61.2 | 56.8 | 55.2 | 0 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 28 | |
| 29 | 1.70 | 63.2 | 0.84 | 65 | 67 | 52.1 | 61.3 | 61.2 | 62 | 52 | 56.2 | 55.2 | 0 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 29 | |
| 30 | 0.92 | 60 | 1.79 | 61 | 68 | 51.4 | 55.8 | 57.6 | 58.5 | 55.6 | 55.8 | 54.2 | 8.8 | 0.5 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 30 | |
| 31 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 31 | |
| Sums. | 278 | 142 | 279 | 21 | 208 | 26 | 186 | 23 | 175 | 52 | 949 | 244 | 320 | 29 | | | | | | | | | | | | | | | | | | |
| Means. | 30.093 | 37.5 | 30.093 | 37.260 | 74.09 | 5.61 | 54.7 | 53.8 | 51.6 | 53.2 | 50.8 | | 103 | 0.98 | | | | | | | | | | | | | | | | | | |
| + Total Corrections for Instrumental Errors. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| + Corrections for Diurnal Range. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| "Corrected Means." | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. of Column. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | | |

BAROMETER, “corrected Mean” at 9 A.M., minus the Correction†† = 30.015
for Temp. (Col. 2), = 30.093 — 78
Corrected Mean” of Barometer at 9 P.M., minus the Correction†† = 30.016
for Temp. (Col. 4), = 30.093 — 77
Mean at Station, corrected, and at 32°, = 30.016
Correction for height, feet above Mean Sea-level, = 4
Mean, reduced to 32°, and Sea-level, = 30.020
Highest Reading, corrected for Index error, on the 14th, = 30.418
Lowest Do. Do. on the 1st, = 29.534
Difference, or Monthly Range, = 0.884

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 28th, = 73.9
Lowest in Month, corrected for Index errors, on the 8th, = 41.4
Difference, or Monthly Range, = 32.5
“Corrected Mean” of all the Highest, (Col. 5), = 60.2
“Corrected Mean” of all the Lowest, (Col. 6), = 49.9
Difference, or Mean Daily Range, = 11.8
** Calculated Mean Temperature of Month, = 54.8

S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 1st, = 73.9
“Corrected Mean,” (Col. 7), of Black Bulb, Max. in Sun, = 60.2
Lowest at Night, Black Bulb, (corrected for Index errors), on the 1st, = 41.4
“Corrected Mean,” (Col. 8), of Black Bulb, Min. on grass, = 49.9
Difference of above Means or Range (“exposed”), = 11.8

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 53.5
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 51.3
†† Computed Temperature of Dew-Point, = 49.2
†† Do. Elastic Force of Vapour, = 349
†† Do. Weight of Vapour in a Cubic Foot of Air, = 85
†† Relative Humidity, (Saturation = 100), = 85
RAIN fell on Days; Amount in Inches, = 0.884

| WIND. | | SUMMARY. | | | | | | | | | |
|------------|---|----------|---|----|---|----|---|----|-------------------|-------------|---------------------------------|
| Direction. | N | NE | E | SE | S | SW | W | NW | Calm or Variable. | Mean Force. | Mean Velocity in miles per day. |
| A.M. | 3 | 2 | 6 | 1 | 2 | 3 | 6 | 1 | 6 | 103 | |
| P.M. | 2 | 2 | 8 | 1 | 5 | 2 | 4 | 1 | 5 | 97 | |
| Mean. | 2 | 2 | 7 | 1 | 4 | 2 | 5 | 1 | 6 | 100 | |

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

Observations made and
Return verified by

(Signed)

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *Imrie Station, Granton*, County of *Midlothian*, in Lat. *55°58'57"*, Long. *3°33'W*, Distance from Sea *0* miles.Height of Cistern of the Barometer above Mean Sea-level *3* feet, above Ground *—* feet.During the MONTH of *July* 188*4*.

The Hours of Observation are of Greenwich Time.

| Days of Month. | BAROMETER. | | | | SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M. | | | | HYGROMETER. No. — | | | | WIND. | | | | RAIN. | | CLOUDS. | | SUNSHINE. Hours. | TEMPERATURE. At — | | SEA. Surface. | 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. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | 9 h. A.M. | | 9 h. P.M. | | Protected in Shade, 4 feet above Ground. | | Exposed to Sun & Wind, 4 feet above Ground. | | 9 h. A.M. | | 9 h. P.M. | | 9 h. A.M. | | 9 h. P.M. | | 9 A.M. | | P.M. | | | 9 h. P.M. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Barometer. | Attached Thermometer. | Barometer. | Attached Thermometer. | Max. | Min. | Max. | Min. | Dry bulb. | Wet bulb. | Dry bulb. | Wet bulb. | Direction. | Force. | Direction. | Force. | Readings of the H. Cup Anemometer. No. — | No. of hours in which it fell. | Amount in inches. | Velocity (0-5), and Direction. | | Amount (0-10), and Species. | Velocity (0-5), and Direction. | | | | Amount (0-10), and Species. | No. of inches. | No. of inches. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | * No. | | No. | | No. | No. | No. | No. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 30.258 | | 30.271 | 60 | 62.2 | 53 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

BAROMETER, “corrected Mean” at 9 A.M., minus the Correction†† = *29.858*
for Temp. (Col. 2), = *29.940* — *8.2* = *29.858*
Corrected Mean” of Barometer at 9 P.M., minus the Correction†† = *29.860*
for Temp. (Col. 4), = *29.942* — *8.2* = *29.860*
Mean at Station, corrected, and at 32°, = *29.859*
Correction for height, feet above Mean Sea-level, = *h*
Mean, reduced to 32°, and Sea-level, = *29.863*
Highest Reading, corrected for Index error, on the 1 th, = *30.271*
Lowest Do. Do., on the 16 th, = *29.450*
Difference, or Monthly Range, = *0.821*

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the th, = *74.0*
Lowest in Month, corrected for Index errors, on the th, = *41.7*
Difference, or Monthly Range, = *32.3*
“Corrected Mean” of all the Highest, (Col. 5), = *62.5*
“Corrected Mean” of all the Lowest, (Col. 6), = *49.4*
Difference, or Mean Daily Range, = *13.1*
* Calculated Mean Temperature of Month, = *56.0*
S.-R. THERMOMETER, Black Bulb Sun, Highest, (corrected for Index Errors), on the th, =
“Corrected Mean,” (Col. 7), of Black Bulb, Max. in Sun, =
Lowest at Night, Black Bulb, (corrected for Index errors), on the th, =
“Corrected Mean,” (Col. 8), of Black Bulb, Min. on grass, =
Difference of above Means or Range (“exposed”), =

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = *56.4*
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = *54.2*
†† Computed Temperature of Dew-Point, = *52.1*
†† Do. Elastic Force of Vapour, = *3.91*
†† Do. Weight of Vapour in a Cubic Foot of Air, =
†† Relative Humidity, (Saturation = 100), = *86*
RAIN fell on Days; Amount in Inches, =

| WIND. | | SUMMARY. | | | |
|------------|--|----------|----|---|----|
| Direction. | | N | NE | E | SE |
| A.M. | | | | | |
| P.M. | | | | | |
| Mean. | | | | | |

Observations made and returned by *Hugh Robert Mill and Matthew Ferguson*
Return verified by *Hugh Robert Mill*

(Signed) *Hugh Robert Mill*

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Marine Station Granton County of Midlothian, in Lat. _____, Long. _____, Distance from Sea 0 miles.
Height of Cistern of the Barometer above Mean Sea-level 3 feet, above Ground _____ feet. During the MONTH of August 1887.
The Hours of Observation are of Greenwich Time.

| Days of Month. | BAROMETER. | | | | SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M. | | | | HYGROMETER. No. | | | | WIND. | | | | RAIN. | | CLOUDS. | | | | SEA. | | | | GENERAL REMARKS. | | | | Days of Month. |
|--|-------------------|---------------------------------------|-------------------|---------------------------------------|---|-------------|------------------------------|--------------------------|---------------------|---------------------|---------------------|---------------------|----------------------|--------|----------------------|--------|---|------|-------------------------|--|--------------------------------------|--|--------------------------------------|--|--------------------------------------|------|---|------|------|------|----------------|
| | 9 h. A.M. | | 9 h. P.M. | | Protected in Shade, 4 feet above Ground. | | Exposed Black Bulbs. | | 9 h. A.M. | | 9 h. P.M. | | 9 h. A.M. | | 9 h. P.M. | | Readings of the H. Cup Anemometer. No. | | 9 A.M. | | P.M. | | 9 A.M. | | 9 P.M. | | As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc. Mention the hour at which Storms, including Thunder and Lightning, began and ended. | | | | |
| | Barometer. No. | Attach- ed Ther- mometer No. | Barometer. No. | Attach- ed Ther- mometer No. | Max. No. | Min. No. | Max. in Sun's rays No. | Min. on Grass. No. | Dry bulb. No. | Wet bulb. No. | Dry bulb. No. | Wet bulb. No. | Direction. Force. | Force. | Direction. Force. | Force. | No. of hours in which it fell. | No. | Amount in inches. | Velocity (0-10), and Direction. | Amount (0-10), and Species. | Velocity (0-10), and Direction. | Amount (0-10), and Species. | Velocity (0-10), and Direction. | Amount (0-10), and Species. | | | | | | |
| | inches. | ° | inches. | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | | | | | | | | | | | | | | | | | | |
| 1 | 30.197 | 60 | 29.996 | 61 | 54.8 | 50.9 | | | 55 | 54.9 | 57.2 | 56 | E | 2 | E | 3 | | none | 0 | 9 mi | 3SW | 6ci | 57.3 | 56.2 | 58.1 | 57 | 57.2 | 57.6 | 57.4 | 1 | |
| 2 | 29.866 | 62 | 29.904 | 62 | 61 | 55.2 | | | 63 | 57.4 | 57.9 | 54.8 | W | 3 | W | 3 | | — | 5 mi | — | 9 mi | 62.2 | 56.5 | 58.4 | 55.2 | 57.7 | 58.1 | 58.2 | 2 | | |
| 3 | 29.938 | 60 | 30.041 | 58.5 | 61.9 | 52.2 | | | 57.3 | 53 | 55 | 63 | E | 4 | E | 4 | | — | 5 ci | — | 9 mi | 58 | 53.4 | 55.5 | 53.5 | 58.4 | 58.3 | 58.4 | 3 | | |
| 4 | 30.126 | 59.5 | 29.958 | 61 | 51.9 | | | | 57.5 | 53.4 | 54.7 | 53.8 | E | 4 | W | 0.5 | | none | 5 mi | — | 6 mi | 56.9 | 52.9 | 56.1 | 53.6 | 57.6 | 57.6 | 57.4 | 4 | | |
| 5 | 29.259 | 61 | 29.236 | 62 | 66.6 | 52 | | | 60 | 58.4 | 55.3 | 52.3 | W | 1 | SW | 1 | | " | SW | 8 mi | — | 2 mi | 60 | 58.8 | 56.1 | 53.5 | 57.5 | 57.1 | 57.1 | 5 | |
| 6 | 29.221 | 66 | 29.044 | 64 | 75 | 49 | | | 67.1 | 60.4 | 58.5 | 57.4 | SW | 1 | 0 | | | " | SW | 2 mi | — | 0 | 65.6 | 59.4 | 59.6 | 57.9 | 59 | 59.4 | 57.3 | 6 | |
| 7 | 29.200 | 62.5 | 29.210 | 62 | 62.8 | 52.1 | | | 59.5 | 57.8 | 57 | 56.7 | W | 0.5 | W | 2 | | " | 0 | — | 1 mi | 59.7 | 58.2 | 58.5 | 57.5 | 59.2 | 59.1 | 57.9 | 7 | | |
| 8 | 29.240 | 60 | 29.150 | 60 | 58 | 54.8 | | | 54.2 | 54.5 | 57.8 | 57.1 | E | 1 | W | 3 | | " | — | mist | — | 4 mi | 57 | 56.3 | 57.9 | 57.3 | 58.5 | 58.3 | 57.7 | 8 | |
| 9 | 29.120 | 59 | 29.098 | 60 | 58.3 | 54.5 | | | 55.7 | 55.7 | 56.2 | 56.2 | E | 1 | E | 3 | | — | — | 5 mi | 0 | 57.5 | 57 | 58 | 57.2 | 58.2 | 57.3 | 58 | 9 | | |
| 10 | 29.040 | 62 | 29.072 | 61.5 | 61 | 57.8 | | | 56.8 | 56.5 | 59.9 | 58.2 | 0 | 0 | 0 | | | — | 0 | — | 1 mi | 58.9 | 57.9 | 58.9 | 57.9 | 58.2 | 58 | 58 | 10 | | |
| 11 | 29.048 | 61 | 29.093 | 63 | 66.5 | 55.7 | | | 59.9 | 58.2 | 58.3 | 58 | E | 2 | 0 | | | — | 6 mi | — | 3 mi | 60.8 | 60 | 60.6 | 59.2 | 58.2 | 58.9 | 57.5 | 58.1 | 11 | |
| 12 | 29.980 | 60 | 29.962 | 60 | 61.1 | 56 | | | 56.8 | 57.1 | 58 | 58 | E | 1 | 0 | | | — | mist | — | — | 60.3 | 59.5 | 58.8 | 58.2 | 58.2 | 58 | 57.3 | 12 | | |
| 13 | 29.920 | 62 | 29.942 | 63 | 72.3 | 55.9 | | | 59 | 58.5 | 59 | 56 | W | 1 | SW | 0.5 | | — | 9 mi | 0 | 60.9 | 60 | 59.5 | 56.5 | 58.1 | 60.1 | 57.3 | 58 | 13 | | |
| 14 | 29.968 | 63 | 30.054 | 60 | 65.8 | 52.5 | | | 59.9 | 55.8 | 54.9 | 52.9 | W | 3 | SW | 1 | | — | 3 mi | 0 | 59.4 | 55.5 | 57 | 54.3 | 58.7 | 59.6 | 58 | 58.3 | 14 | | |
| 15 | 30.108 | 61 | 30.064 | 62 | 67.2 | 49 | | | 58.9 | 56.7 | 60.2 | 56.9 | 0 | 0 | SW | 2 | | — | 4 mi | — | 9 mi | 59 | 56.9 | 60.6 | 57.3 | 59.3 | 59.9 | 58.4 | 59 | 15 | |
| 16 | 29.052 | 66 | 29.054 | 64 | 67.2 | 58.3 | | | 64 | 60.1 | 61.4 | 57.8 | W | 3 | SW | 1 | | — | 7 mi | — | 5 mi | 64.5 | 60.9 | 62.2 | 58.4 | 59.3 | 60 | 58.6 | 59.1 | 16 | |
| 17 | 29.019 | 64 | 29.028 | 65 | 66.5 | 58 | | | 63.2 | 60.8 | 60 | 58 | 0 | 0 | SW | 2 | | " | SW | 9 mi | — | 1 mi | 64.4 | 61.3 | 61.7 | 59.1 | 59.6 | 61.4 | 59 | 17 | |
| 18 | 29.993 | 63 | 29.872 | 64 | 63.6 | 55.8 | | | 60.3 | 58.8 | 62.9 | 59.3 | W | 3 | SW | 0.5 | | — | 10 mi | — | SW | 9 mi | 59 | 58 | 61.9 | 60.6 | 59.8 | 60.5 | 59.3 | 18 | |
| 19 | 29.799 | 63.5 | 29.948 | 58.9 | 59.9 | 52.9 | | | 62 | 58.8 | 53.1 | 51.9 | SW | 0.5 | SW | — | | — | 10 mi | — | — | 63.6 | 60 | 54.9 | 52.8 | 59.4 | 59.9 | 59.1 | 59.2 | 19 | |
| 20 | 30.089 | 58 | 30.087 | 62 | 67.3 | 47 | | | 55.6 | 52.8 | 58.3 | 56.1 | W | 2 | — | | | — | 0 | 0 | 4 mi | 55.5 | 52.8 | 58.9 | 56.4 | 59.2 | 60.3 | 58.8 | 58.9 | 20 | |
| 21 | 29.270 | 63 | 29.298 | 60 | 60.7 | 56.2 | | | 58.6 | 55.4 | 56.7 | 55.3 | W | 2 | — | | | " | 1 mi | — | 5 mi | 58 | 54.6 | 57.1 | 55.3 | 59.4 | 59.4 | 58.5 | 59 | 21 | |
| 22 | 29.233 | 65 | 29.170 | 61.5 | 65.8 | 55.8 | | | 61 | 60 | 59.8 | 57 | W | 0.5 | SW | 0.5 | | " | 9 mi | — | — | 63.4 | 61.3 | 60 | 57.1 | 59.6 | 58.9 | 58.9 | 59.3 | 22 | |
| 23 | 29.134 | 63.5 | 29.100 | 64 | 77.8 | 50.3 | | | 64 | 59.7 | — | — | W | 0.5 | — | | | — | 1 mi | — | — | 61.6 | 59 | — | — | 60.5 | — | 58.6 | — | 23 | |
| 24 | 29.134 | 58.5 | 29.106 | 58.5 | — | — | | | 55.6 | 52.8 | 58.3 | 56.1 | W | 2 | — | | | — | — | — | 10 mi | 65.2 | 62.6 | 52.8 | 53.8 | 60 | 60.3 | 59 | 59.5 | 24 | |
| 25 | 29.128 | 58 | 29.202 | 55.2 | 61 | 50.1 | | | 55.2 | 52.3 | 60.5 | 59.1 | W | 1 | 0 | | | — | — | — | 5 mi | 55.1 | 52 | 51.2 | 49.1 | 59.5 | 59.8 | 59 | 59.6 | 25 | |
| 26 | 29.105 | 58 | 29.102 | 56 | 65 | 45 | | | 62.1 | 50.5 | 53.9 | 52 | W | 3 | W | 2 | | — | — | — | 0 | 53.4 | 51 | 59.8 | 51.9 | 58.8 | 58.8 | 58.4 | 59 | 26 | |
| 27 | 29.909 | 55.5 | 29.709 | 54.9 | 58.6 | 43.1 | | | 52.5 | 50 | 48.2 | 46 | W | 1 | W | 2 | | — | — | — | 1 mi | 54.5 | 51 | 51.9 | 49.9 | 58.4 | 58.8 | 58 | 58.8 | 27 | |
| 28 | 29.503 | 53.8 | 29.578 | 53 | 53 | 46 | | | 49 | 46.4 | 49 | 43 | SW | 2 | W | 3 | | — | — | — | 0 | — | 2 mi | 50 | 48.9 | 53 | 51.7 | 57.3 | 57.5 | 57 | 28 |
| 29 | 29.722 | 55 | 29.702 | 53 | 58.8 | 44 | | | 51.2 | 50 | 48.2 | 46 | W | 1 | SW | 2 | | — | — | — | 0 | — | 0 | 50.8 | 49.1 | 50.2 | 49.8 | 56.8 | 56.2 | — | 29 |
| 30 | 29.778 | 56.2 | 29.732 | 58.1 | 57 | 48 | | | 53.9 | 51 | 50 | 48.6 | SW | 3 | E | 2 | | — | — | — | 2 mi | — | 10 mi | 55.8 | 53.1 | 52 | 50.2 | 58.4 | 57.8 | 58.9 | 30 |
| 31 | 29.766 | 59 | 29.722 | 55 | 56.1 | 45 | | | 52.1 | 48.2 | 49.9 | 47 | W | 1 | W | 2 | | — | — | — | 1 mi | — | 5 mi | 52.6 | 52.3 | 50 | 48.1 | 58.9 | 58.2 | 57.3 | 31 |
| Sums. | 1815 | 180 | 215 | 66 | 1850 | 55.0 | | | 1610 | 143 | 1610 | 143 | 43 | 39 | 1 | | | | | | 31 | 64 | 32 | 03 | 02 | 01 | 14 | 83 | | | |
| Means. | 30.059 | 606 | 30.037 | 59.9 | 63.1 | 57.8 | | | 58.1 | 55.7 | 56.3 | 54.3 | 1.40 | 1.30 | | | | | | | 59.1 | 56.3 | 57.1 | 55.0 | 59.0 | 59.0 | 58.5 | | | | |
| † Total Corrections for Instrumental Errors. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ‡ Corrections for Diurnal Range. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| “Corrected Means.” | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. of Column. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | |

BAROMETER, “corrected Mean” at 9 A.M., minus the Correction†† = 29.873
for Temp. (Col. 2), = 39.959... 86
Corrected Mean” of Barometer at 9 P.M., minus the Correction†† = 29.954
for Temp. (Col. 4), = 30.039... 85
Mean at Station, corrected, and at 32°, = 29.934
Correction for height, feet above Mean Sea-level, = 4
Mean, reduced to 32°, and Sea-level, = 29.938
Highest Reading, corrected for Index error, on the 21st th, = 30.298
Lowest Do. Do., on the 28th, = 29.478
Difference, or Monthly Range, = 0.820

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 21st th, = 77.8
Lowest in Month, corrected for Index errors, on the 27th, = 43.1
Difference, or Monthly Range, = 34.7
“Corrected Mean” of all the Highest, (Col. 5), = 63.1
“Corrected Mean” of all the Lowest, (Col. 6), = 57.8
Difference, or Mean Daily Range, = 5.3
** Calculated Mean Temperature of Month, = 57.4
S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the 21st th, = —
“Corrected Mean,” (Col. 7), of Black Bulb, Max. in Sun, = —
Lowest at Night, Black Bulb, (corrected for Index errors), on the 28th, = —
“Corrected Mean,” (Col. 8), of Black Bulb, Min. on grass, = —
Difference of above Means or Range (“exposed”), = —

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 67.2
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 55.0
†† Computed Temperature of Dew-Point, = 53.0
†† Do. Elastic Force of Vapour, = 4.03
†† Do. Weight of Vapour in a Cubic Foot of Air, = —
†† Relative Humidity, (Saturation = 100), = 86
RAIN fell on Days; Amount in Inches, = —

| WIND. | | SUMMARY. | | | | | | | | | |
|------------|---|----------|---|----|---|----|---|----|-------------------|-------------|---------------------------------|
| Direction. | N | NE | E | SE | S | SW | W | NW | Calm or Variable. | Mean Force. | Mean Velocity in miles per day. |
| A.M. | 1 | 3 | 8 | 2 | 2 | 9 | 4 | 1 | 4 | 1.40 | |
| P.M. | 2 | 4 | 1 | 8 | 3 | 8 | 1 | 3 | 8 | 1.30 | |
| Mean. | 2 | 4 | 4 | 1 | 5 | 8 | 6 | 1 | 3 | 1.35 | |

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

Observations made and Return verified by August Robert Mill
Marine Station Granton.

(Signed) August Robert Mill.

Grant
Aug. 1884

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Granton Marine Station, County of Edinburgh, in Lat. _____, Long. _____, Distance from Sea _____ miles.
Height of Cistern of the Barometer above Mean Sea-level 3 feet, above Ground _____ feet.
During the MONTH of September 1884.
The Hours of Observation are of Greenwich Time.

| Days of Month. | BAROMETER. | | | | SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M. | | | | HYGROMETER. on Shore. | | | | WIND. | | | | RAIN. | | CLOUDS. | | | | HYGROMETER on Air. | | | | In Water. | | | | GENERAL REMARKS. | | | | Days of Month. |
|----------------|------------|--------------------------------|------------|--------------------------------|---|------|---|------|--------------------------|-----------|-----------|-----------|------------|--------|------------|--------|--------------------------------|---------------|-------------|--------------------|--------------------|--------|-----------------------|--------|------------|--------|------------|--------|---|---|---|-----|-----|-----|----------------|
| | 9 h. A.M. | | 9 h. P.M. | | Protected in Shade, at least above Ground. | | Exposed in direct Sun, at least above Ground. | | 9 h. A.M. | | 9 h. P.M. | | 9 h. A.M. | | 9 h. P.M. | | No. of hours in which it fell. | | 9 A.M. | | 9 P.M. | | 9 A.M. | | 9 P.M. | | 9 A.M. | | 9 P.M. | | As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Discharges, etc. | | | | |
| | Barometer. | Attach- ed Ther- mometer | Barometer. | Attach- ed Ther- mometer | Max. | Min. | Max. | Min. | Dry bulb. | Wet bulb. | Dry bulb. | Wet bulb. | Direction. | Force. | Direction. | Force. | Direction. | Force. | Direction. | Force. | Direction. | Force. | Direction. | Force. | Direction. | Force. | Direction. | Force. | Direction. | Force. | Mention the hour at which Storms, including Thunder and Lightning, began and ended. | | | | |
| | 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. | No. | No. | No. | No. | |
| | inches. | ° | inches. | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | |
| 1 | 29.680 | 54.7 | 29.570 | 56.5 | 59.2 | 44.6 | — | — | 51 | 49 | 51.7 | 50.3 | 70 | 1 | SW | 1 | Shower | — | 2ci | — | 51.2 | 50.2 | 53 | 52 | 53.4 | 55.8 | 53 | 56 | p.m. dr. tide ending squall. Wildfire at night. | 1 | | | | | |
| 2 | 603 | 56 | 661 | 58 | 63.5 | 42.5 | — | — | 58 | 54.2 | 52.1 | 51.2 | SW | 2 | SW | 3 | Shower | 5.15 | 5ci | 0 | 56.8 | 52.8 | 54.5 | 51.2 | 55.9 | 56.9 | 55.5 | 55.6 | very heavy shower 10.30 a.m. | 2 | | | | | |
| 3 | 679 | 55 | 709 | 57 | 64 | 43.3 | 56 | 54.7 | 52.3 | 52.8 | 51.4 | 50.2 | 49.8 | 0 | SW | 0.5 | None | 78.0 | 6ci | 0 | 54.2 | 52.7 | 53.2 | 50.3 | 55.1 | 56.6 | 55.3 | 55.7 | Wind N.E. light from 10 a.m. to about 4 p.m. | 3 | | | | | |
| 4 | 679 | 53 | 628 | 58 | 61.5 | 40.7 | 57.3 | 55.5 | 54.3 | 52.8 | 51.4 | 50.2 | 48.5 | WNW | 0.5 | SW | 2 | slight shower | 8.0 | 8ci | — | 51.7 | 50.3 | 51.2 | 49 | 55.1 | 55.5 | 55.5 | 55.7 | Wind N.E. light from 10 a.m. to about 4 p.m. | 4 | | | | |
| 5 | 574 | 55 | 616 | 57 | 59.7 | 45.5 | 57.3 | 55.5 | 54.3 | 52.8 | 51.4 | 50.2 | 48.5 | W | 3 | SW | 2 | Shower | 4.5 | 1ci | 1ci | 54.7 | 52 | 51.2 | 50 | 55 | 55.6 | 52.9 | 53.3 | gale hit at 3 p.m. Surf. temp. 9. water at 3 53.6 | 5 | | | | |
| 6 | 614 | 52 | 410 | 57 | 58.3 | 43.4 | 57.3 | 55.5 | 54.3 | 52.8 | 51.4 | 50.2 | 48.5 | W | 0.5 | NE | 1.5 | choppy | 8.0 | 2ci | — | 49.8 | 48 | 54.4 | 54 | 55 | 55.2 | 55 | 55.3 | gradually coming round to E. wind. Gate full of barometer | 6 | | | | |
| 7 | 514 | 52 | 860 | 57 | 60 | 44.3 | — | — | 50 | 48.8 | 52.3 | 51 | 70 | 0.5 | W | 3 | ch. r. a.m. | — | 3NW | 5mi | — | 53.2 | 51.1 | — | 54.9 | — | 54.7 | 52 | 51.2 | 50.3 | grad. N. gale during 6-7 night. Boat blown on shore 9 mi. | 7 | | | |
| 8 | 30.038 | 54.2 | 30.104 | 60 | 61.4 | 47.3 | 54.7 | 53.7 | 53.3 | 54 | 54.5 | 53.7 | 56 | 55.3 | 0 | SE | 0.5 | ch. r. a.m. | 0.5 | 5mi | 0 | 10mi | 54.2 | 53 | 57 | 55.9 | 52.2 | 55.7 | 54 | 55.1 | heavy very muddy in morning. Dull, damp day | 8 | | | |
| 9 | 150 | 57.9 | 240 | 63.2 | 63.7 | 53.4 | 57 | 54.5 | 53.3 | 56 | 55.9 | 61.6 | 61.3 | — | 0.5 | 0 | ch. r. a.m. | 0 | 10mi | 0 | 10mi | 57.6 | 57.3 | 60.7 | 60.1 | 55.4 | 56 | 54.7 | 55.1 | very dark at 3. r. at night. ch. at night. | 9 | | | | |
| 10 | 284 | 59.2 | 300 | 60.3 | 64 | 54.8 | 57.3 | 54.5 | 53.7 | 54 | 56.3 | 56 | 56.9 | 56.4 | — | 0.5 | 0 | None | 0 | 10mi | 10mi | 58.9 | 58.4 | 58.2 | 57.5 | 55.7 | 56 | 55 | 55.8 | Heavy a.m. Dark clouds all day. Little sun. ch. at night. | 10 | | | | |
| 11 | 404 | 60.1 | 492 | 60 | 63.5 | 53.3 | 58 | 55.3 | 56 | 54 | 59.4 | 58.3 | 53.8 | 53.7 | — | 0.5 | 0 | None | 0 | 10mi | — | 5mi | 60.1 | 59.2 | 55.6 | 55.1 | 56 | 56.2 | 55.3 | 55.7 | Heavy rain hail all day. Cloudy day, cleared up in afternoon. | 11 | | | |
| 12 | 564 | 55 | 588 | 56.3 | 69.3 | 49.2 | 58 | 55.3 | 56 | 54 | 51 | 51.3 | 51.8 | 52.2 | — | 0 | NE | 2 | ch. r. a.m. | — | Thick mist all day | 54.2 | 54.2 | 53.7 | 53.7 | 53.7 | 53.9 | 53.1 | 55.6 | Thick mist all day. Rain. ch. at night. Wind rising p.m. | 12 | | | | |
| 13 | 578 | 54.6 | 505 | 53.6 | 64 | 49 | 58 | 55.3 | 56 | 54 | 52.3 | 52 | — | — | — | — | — | ch. r. a.m. | — | Thick mist all day | 49.8 | 50 | 51.9 | 51.6 | 55.4 | 55.4 | 55.4 | 55.1 | 55.1 | 55.1 | Thick mist all day. Rain. ch. at night. Wind rising p.m. | 13 | | | |
| 14 | 458 | 54 | 366 | 54 | — | — | 55.7 | 55.3 | 54.5 | 52.3 | 52 | — | — | — | — | — | — | ch. r. a.m. | — | Thick mist all day | 51.3 | 50 | 53 | 53 | 53.3 | 52.8 | 55 | 53.8 | 55 | 53.8 | ch. r. a.m. ch. r | | | | |

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction^{††} for Temp. (Col. 2), = 29.955 — 1.3 = 29.922
Corrected Mean of Barometer at 9 P.M., minus the Correction^{††} for Temp. (Col. 4), = 29.992 — 7.7 = 29.915
Mean at Station, corrected, and at 32°, = 29.919
Correction for height, feet above Mean Sea-level, = 4
Mean, reduced to 32°, and Sea-level, = 29.923
Highest Reading, corrected for Index error, on the 12 th, = 30.588
Lowest Do. Do., on the 17 th, = 29.409
Difference, or Monthly Range, = 1.179

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 12 th, = 69.3
Lowest in Month, corrected for Index errors, on the 22 th, = 46.0
Difference, or Monthly Range, = 23.3
"Corrected Mean" of all the Highest, (Col. 5), = 60.7
"Corrected Mean" of all the Lowest, (Col. 6), = 47.9
Difference, or Mean Daily Range, = 12.8
** Calculated Mean Temperature of Month, = 54.3
S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the th, =
"Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, =
Lowest at Night, Black Bulb, (corrected for Index errors), on the th, =
"Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, =
Difference of above Means or Range ("exposed"), =

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 53.8
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 52.7
†† 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), = 92
RAIN fell on Days; Amount in Inches, =

| WIND. | | SUMMARY. | | | | | | | | | |
|------------|---|----------|---|----|----|----|---|----|-------------------|-------------|---------------------------------|
| Direction. | N | NE | E | SE | S | SW | W | NW | Calm or Variable. | Mean Force. | Mean Velocity in miles per day. |
| A.M. | 3 | 4 | 5 | 3 | 9 | 3 | 3 | 3 | 3 | 1.45 | |
| P.M. | 4 | 3 | 1 | 4 | 11 | 1 | 0 | 6 | 1.73 | | |
| Mean. | 2 | 4 | 4 | 3 | 10 | 2 | 0 | 4 | 1.59 | | |

Observations made and Return verified by August Robert Mill

(Signed) August Robert Mill

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *Scottish Marine Station*, County of *Midlothian*, in Lat. _____, Long. _____, Distance from Sea _____ miles.Height of Cistern of the Barometer above Mean Sea-level *3* feet, above Ground _____ feet.During the MONTH of *October* 188*4*.

The Hours of Observation are of Greenwich Time.

| Days of Month. | BAROMETER. | | | | SELF-REGISTERING THERMOMETERS. | | | | HYGROMETER. | | | | WIND. | | | | RAIN. | | CLOUDS. | | | | THERMOMETERS. | | | | SEA. | | OZONE. | | GENERAL REMARKS. | | Days of Month. | |
|--|------------|-----------------------|------------|-----------------------|--|----------|----------|----------|-------------|-----------|-----------|-----------|------------|--------|------------|--------|--------------------------------|--------|------------|--------|------------|--------|--------------------------------|--------|------------|--------|------------|--------|--|--------|---|---|--|----|
| | 9 h. A.M. | | 9 h. P.M. | | Protected in Shade, 4 feet above Ground. | | No. — | | 9 h. A.M. | | 9 h. P.M. | | 9 h. A.M. | | 9 h. P.M. | | No. of hours in which it fell. | | 9 A.M. | | P.M. | | No. of hours in which it fell. | | 9 A.M. | | 9 P.M. | | As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc. | | | | | |
| | Barometer. | Attached Thermometer. | Barometer. | Attached Thermometer. | Max. No. | Min. No. | Max. No. | Min. No. | Dry bulb. | Wet bulb. | Dry bulb. | Wet bulb. | Direction. | Force. | Direction. | Force. | Direction. | Force. | Direction. | Force. | Direction. | Force. | Direction. | Force. | Direction. | Force. | Direction. | Force. | Direction. | Force. | | | | |
| 1 | 29.839 | 51.3 | 30.076 | 52 | 70.1 | 43.6 | 53 | 52.535 | 51.5 | 49.2 | 46.6 | 47.3 | 45 | W | 3 | SW | 0.5 | SE | 0 | 2SW | 1ci | — | 49.9 | 47.8 | 48.3 | 46 | 52.5 | 52.1 | 52.4 | 52 | At 9 p.m. slight radiating from low pte. N + S | 1 | | |
| 2 | 29.959 | 51.2 | 29.674 | 56.2 | 60 | 45 | 52.3 | 51.535 | 51.5 | 51.9 | 49.8 | 54.7 | 53.8 | 0 | SW | 3 | SE | 4 | 0.5SSW | 7cu | 2SW | 11cu | 52.8 | 50.9 | 55.8 | 55.3 | 51.5 | 52.8 | 52.1 | 52.3 | Clear, fair weather. Showers at 3-4 p.m. Rain from 6 p.m. | 2 | | |
| 3 | 28.80 | 51.2 | 30.198 | 51 | 64 | 43 | 53 | 52.535 | 51.7 | 48.5 | 46.2 | 46 | 44 | W | 3 | W | 3 | SE | 0 | 2W | 1ci | 1W | 3cu | 49.5 | 47.2 | 46.4 | 44.6 | 52.2 | 51.3 | 52 | 52 | Very high wind at 1 p.m. Blackest 10 p.m. 1st only more | 3 | |
| 4 | 30.530 | 49.2 | 29.94 | 53.2 | 53.2 | 46.1 | 52.3 | 50.753 | 51.5 | 47 | 45.4 | 48.1 | 47 | W | 0.5 | SW | 2 | SE | 0 | — | 4ci | — | — | 48.2 | 46 | 57.5 | 51.2 | 50.7 | 51.3 | 51 | 50 | 6 cloudy at night. Lunar eclipse not visible | 4 | |
| 5 | 28.80 | 56.2 | 28.44 | 54 | 56 | 44 | — | — | 54.2 | 51 | 49 | 48.6 | 46.6 | 1 | 0 | — | — | — | — | — | — | — | — | 53.6 | 52 | 49.7 | 49 | 51.3 | 52 | 51 | 51.4 | — | 5 | |
| 6 | 27.10 | 49 | 27.0 | 52.2 | 52.8 | 43 | 53 | 51.53 | 50.7 | 45.2 | 45 | 49.2 | 49 | 0 | 0 | — | — | — | — | — | — | — | — | 46 | 46 | 48.3 | 48.3 | 51.2 | 52.6 | 51.6 | 52.4 | Mist a.m. cleared in afternoon. Very calm. Slight rain | 6 | |
| 7 | 24.02 | 53.8 | 24.9 | 52 | 51.5 | 43 | — | — | 45.6 | 44.2 | 48.5 | 48.3 | 0 | 0 | — | — | — | — | — | — | — | — | — | 49.5 | 48.9 | 49.9 | 49.5 | 52.1 | 52.7 | 50.7 | 52 | Hazy a.m. Clear p.m. Wind changed from S to W | 7 | |
| 8 | 29.748 | 56 | 29.518 | 47 | 51.8 | 41 | — | — | 51.4 | 50.2 | 43 | 42 | W | 1 | SW | 0.5 | — | 6 | ch. | — | — | — | — | 51.6 | 50.9 | 43.7 | 42.6 | 52.4 | 51.8 | 52.7 | 52 | Dull day with mist & rain. | 8 | |
| 9 | 25.4 | 44 | 26.2 | 49.3 | 48.8 | 39.1 | 53.5 | 51.527 | 50 | 41.2 | 40.3 | 44.2 | 43.8 | SW | 1 | N | 1 | SE | 7 | 1SW | 10cu | — | — | 42.3 | 41.4 | 45.5 | 44.9 | 51.9 | 51.5 | 52.5 | 52.6 | Very clear day. Rain from 4-30 p.m. S.W. m. both times, an error of thermometer | 9 | |
| 10 | 26.19 | 44 | 27.32 | 45.3 | 65 | 38 | 52 | 47.535 | 47.7 | 42 | 39.3 | 40.1 | 37.5 | W | 2 | W | 1.5 | SE | 2 | 1W | 7cu | — | 4cu | 42.5 | 40.5 | 40.7 | 38.8 | 48 | 46.2 | 51.5 | 51 | Good, dull day, not much, no accident? | 10 | |
| 11 | 26.78 | 42.7 | 28.24 | 46.8 | 63.3 | 39.7 | 50 | 47.3 | 47.7 | 43.5 | 41 | 46 | 43.9 | W | 2 | W | 4 | SE | 4 | — | — | — | — | 43.9 | 41.7 | 46.3 | 44.9 | 46 | 47 | 50 | 51.8 | — | 11 | |
| 12 | 30.048 | 45.2 | 30.026 | 43.1 | 63.4 | 37.2 | 52 | 45 | — | — | 43.2 | 42.2 | 43.1 | 42 | W | 3 | W | 4 | — | — | — | — | — | 45 | 42.6 | 44.6 | 43.1 | 46.3 | 47.1 | 50.2 | 50.3 | — | 12 | |
| 13 | 20.74 | 44 | 29.994 | 51.7 | 50.3 | 27.8 | 53.3 | 43.5 | 45 | 42.4 | 41 | 46 | 43.9 | W | 3 | W | 1.5 | — | 3 | — | — | — | — | 43.8 | 42.2 | 46.3 | 45.7 | 45.9 | 46.5 | 50 | 47.5 | Note miss a mistake in setting? | 13 | |
| 14 | 20.50 | 30 | 26.160 | 43.9 | 53 | 42.4 | 48.3 | 43.5 | 48 | 4.98 | — | 45 | 43.2 | W | 1 | W | 2 | — | 0 | — | — | — | — | 50 | 48.3 | 44.7 | 44.5 | 47.7 | 47.6 | 47.2 | 47.2 | Very clear day | 14 | |
| 15 | 20.4 | — | 26.164 | 51.2 | 57 | 37.5 | 51.5 | 48 | 55.3 | 53.6 | 49.2 | 47.2 | W | 2 | W | 2 | SE | 0 | 2W | 9cu | — | 2 | 55.8 | 54.7 | 47.7 | 47.3 | 47.7 | 47.1 | 47.7 | 48 | Clear day. | 15 | | |
| 16 | 21.2 | 48 | 26.09 | 56 | 59 | 28.5 | 51 | 51.523 | 49 | 50.3 | 49.8 | 55.1 | 53 | W | 1 | W | 4 | SE | 0 | 2W | 10cu | — | — | 57.2 | 50.8 | 55.3 | 54.6 | 48.7 | 47.9 | 48.9 | 49.2 | Wind rising toward night. | 16 | |
| 17 | 21.84 | 52.7 | 23.5 | 56.5 | 58.9 | 37 | 50.5 | 49.5 | 51 | 50 | 53.2 | 52 | 54.3 | W | 3 | W | 3 | SE | 1 | — | — | — | — | 53.7 | 52.8 | 54.9 | 53.8 | 50 | 50.7 | 50 | 50.4 | Dull day with high wind. | 17 | |
| 18 | 23.6 | 54 | 23.2 | 52.1 | 57.6 | 36.2 | 51 | 50.5 | 50 | 49.3 | 51.3 | 52.1 | 51 | W | 1 | W | 2 | SE | 0 | W | 0.5 | 7cu | — | — | 50.9 | 49 | 47.7 | 46.8 | 51 | 51 | 50.2 | 51 | — | 18 |
| 19 | 23.0 | 51.9 | 25.9 | 50 | 56.6 | 46 | — | — | 49.2 | 47.1 | 47.2 | 46.5 | W | 3 | W | 2 | — | — | — | — | — | — | — | — | 50.9 | 49 | 47.7 | 46.8 | 51 | 51 | 50.2 | 51 | — | 19 |
| 20 | 23.1 | 48 | 23.0 | 53.2 | 53 | 45 | 51.3 | 49.5 | 51 | 50 | 48 | 46.7 | 51.1 | W | 4 | W | 2.5 | SE | 0 | — | — | — | — | — | 50.2 | 47.3 | 51.3 | 51 | 50.3 | 50.4 | 50 | 50 | — | 20 |
| 21 | 27.4 | 52.7 | 23.7 | 54.5 | 57 | 50 | 51 | 50.3 | 50.5 | 50 | 52.6 | 50.9 | 50.7 | W | 0.3 | W | 1 | — | 0 | 1SW | 10cu | — | — | 53.2 | 51.8 | 51.1 | 49.5 | 50.3 | 50.6 | 50.4 | 50.4 | Dull clear day. Steady breeze | 21 | |
| 22 | 24.0 | 52.5 | 24.0 | 51 | 55.2 | 44 | — | — | 52.8 | 50 | 45 | 43.5 | SW | 0.5 | SW | 0.5 | — | 0 | 10cu | — | — | — | — | 53.2 | 51.2 | 46 | 45 | 50.5 | 50.8 | 50 | 50.6 | Dull. Some drops of rain at 2 | 22 | |
| 23 | 29.980 | 47 | 29.890 | 50.7 | 55.3 | 43.2 | 50.3 | 49.5 | 47 | 47 | 45.3 | 44.3 | 48.8 | SE | 0.5 | SE | 0.5 | — | — | 0.5SW | 3cu | — | — | 46.3 | 44.7 | 48.8 | 47.3 | 50.5 | 50.5 | 50.1 | 50.4 | — | 23 | |
| 24 | 29.70 | 49 | 30.068 | 51.1 | 45.1 | 41.3 | — | — | 45 | 46.9 | 47.2 | 46.3 | SE | 0.5 | SW | 1 | — | — | — | — | — | — | — | 49 | 48.3 | 48.2 | 47.8 | 50.5 | 50.5 | 50.4 | 50.1 | Note low maximum. Therm. wrong? (10th) | 24 | |
| 25 | 28.74 | 49 | 29.360 | — | — | — | — | — | 48.2 | 47 | — | — | — | SW | 3 | — | — | — | — | — | — | — | — | — | 48.9 | 47.5 | — | — | 50 | — | 50 | — | Wind too strong to get to 4th at night. If thought it was good to take above obs. in the circumstances (10th) | 25 |
| 26 | 29.8 | 46 | 29.370 | 43.9 | 88 | 23 | — | — | 45 | 43 | 40.5 | 40 | SW | 4 | SW | 4 | — | — | — | — | — | — | — | — | 43.9 | 41.7 | 41.3 | 39.3 | 44.5 | 48.3 | 49.5 | 48.9 | Maximum thermometer had got one of its hooks loose. Maximum was wrong in consequence of the hook being inside the bulb & the detector's column about 60° long. | 26 |
| 27 | 26.76 | 46.9 | 26.6 | 46.2 | 85 | — | 57.5 | 43.5 | 42 | 41.3 | 38 | 43.5 | 42.4 | SW | 2 | W | 1 | — | 1 | — | — | — | — | — | 42.8 | 39.5 | 43.9 | 42.8 | 45 | 45.8 | 45.2 | 46 | Minimum thermometer had got one of its hooks loose. Minimum was wrong in consequence of the hook being inside the bulb & the detector's column about 60° long. | 27 |
| 28 | 21.14 | 48 | 26.54 | 43.2 | — | 36 | — | — | 46.4 | 42 | 36.2 | 34 | W | 4.5 | SW | 0.5 | — | 0 | 1W | 5cu | — | — | — | — | 46.5 | 42.8 | 38 | 36.2 | 47 | 45 | 47.1 | 46.7 | Morning obs. on the half an hour late owing to high wind | 28 |
| 29 | 28.11 | 40 | 28.80 | 46.2 | 47 | 32 | 46 | 43.3 | 43 | 39.3 | 38 | 42.9 | 41 | SW | 1 | SW | 1 | — | 3 | 2SW | 5cu | 1W | 6cu | 40.2 | 39.4 | 42.8 | 42.3 | 44.5 | 45.5 | 46.8 | 46.2 | Wind rose until about 2 & then fell. | 29 | |
| 30 | 29.01 | 47.5 | 27.98 | 56 | 58 | 42.7 | 46 | 44.8 | 46 | 47 | 44.8 | 58 | 89 | SW | 1 | SW | 4 | SE | 1 | 1W | 8cu | — | 9cu | 47.4 | 46.5 | 57.8 | 55.9 | 45.9 | 47 | 46.3 | 46.5 | Wind rising rapidly at night. | 30 | |
| 31 | 28.24 | 56 | 29.00 | 55.7 | 60 | 51.3 | 48 | 47.8 | 46.5 | 57 | 54.3 | 55.3 | 52.3 | SW | 4 | SW | 2 | SE | 2 | 2W | 5cu | 1SW | 6cu | 56.8 | 55.3 | 55.2 | 54.8 | 47.8 | 49 | 47.4 | 49 | Wind fell in afternoon, rose again after 9. | 31 | |
| Sums. | 1612 | 147 | 1315 | 118 | 126 | 135 | 103 | 102 | 117 | 115 | 101 | 101 | 158 | 138 | 157 | 128 | 3 | 4 | — | — | — | — | — | — | 1515 | 1415 | 1614 | 1618 | 1012 | 1111 | 88 | 90 | | |
| Means. | 29.002 | 49.3 | 30.005 | 50.5 | 55.6 | 40.9 | 50.7 | 51.5 | 48.0 | 46.1 | 47.6 | 45.8 | 1.73 | 1.71 | — | — | — | — | — | — | — | — | — | — | 48.7 | 47.2 | 48.2 | 47.1 | 49.3 | 49.5 | 49.6 | 49 | | |
| † Total Corrections for Instrumental Errors. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | |
| † Corrections for Diurnal Range. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | |
| “Corrected Means.” | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | |
| No. of Column. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | | | | |

BAROMETER, “corrected Mean” at 9 A.M., minus the Correction†† = *29.548*
for Temp. (Col. 2), = *30.004*.....56
Corrected Mean” of Barometer at 9 P.M., minus the Correction†† = *29.546*
for Temp. (Col. 4), = *30.005*.....59
Mean at Station, corrected, and at 32°..... = *19.947*
Correction for height, feet above Mean Sea-level..... =
Mean, reduced to 32°, and Sea-level..... = *29.951*
Highest Reading, corrected for Index error, on the 5 th..... = *30.844*
Lowest Do. Do., on the 26 th..... = *29.144*
Difference, or Monthly Range..... = *1.730*

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 1 th..... = *65.8*
Lowest in Month, corrected for Index errors, on the 26 th..... = *23.0*
Difference, or Monthly Range..... = *42.8*
“Corrected Mean” of all the Highest, (Col. 5), = *56.4*
“Corrected Mean” of all the Lowest, (Col. 6), = *40.9*
Difference, or Mean Daily Range, = *15.2*
** Calculated Mean Temperature of Month, = *48.7*

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

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = *47.8*
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = *46.0*
†† Computed Temperature of Dew-Point, = *44.0*
†† Do. Elastic Force of Vapour, = *.287*
†† Do. Weight of Vapour in a Cubic Foot of Air, ... =
†† Relative Humidity, (Saturation = 100), = *87*

| | | | | | | | | | | | |
|--------------|---|-------------------------|---|---------|---|----|----|----|-------------------|-------------|---------------------------------|
| RAIN fell on | | Days, Amount in Inches, | | = | | | | | | | |
| WIND. | | SUMMARY. | | | | | | | | | |
| Direction. | N | NE | E | SE | S | SW | W | NW | Calm or Variable. | Mean Force. | Mean Velocity in miles per day. |
| A.M. | 2 | | 1 | 2 | | 9 | 11 | 3 | 3 | 173 | |
| P.M. | 2 | 1 | | 1 | | 11 | 7 | 5 | 4 | 171 | |
| Mean. | 2 | 0 | 1 | 1 | 0 | 10 | 9 | 4 | 4 | 172 | |

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Marine Station, Granton, County of Indrothians, in Lat. _____, Long. _____, Distance from Sea 0 miles.
Height of Cistern of the Barometer above Mean Sea-level 3 feet, above Ground _____ feet. During the MONTH of November 1884.
The Hours of Observation are of Greenwich Time.

| Days of Month. | BAROMETER. | | | | SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M. | | | | HYGROMETER. No. — | | | | WIND. | | | | RAIN. | CLOUDS. | | | | THERMOMETERS under Ground. | | | | WATER. | | | | 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 in Sun, 4 feet above Ground. | | 9 h. A.M. | | 9 h. P.M. | | 9 h. A.M. | | 9 h. P.M. | | | 9 A.M. | | P.M. | | 9 A.M. | | P.M. | | 9 A.M. | | P.M. | | | | | |
| | Barometer. | Attached Thermometer. | Barometer. | Attached Thermometer. | Max. No. | Min. No. | Max. No. | Min. No. | Dry bulb. | Wet bulb. | Dry bulb. | Wet bulb. | Direction. | Force. | Direction. | Force. | | Velocity (0-10) and Direction. | Amount (0-10) and Species. | Velocity (0-10) and Direction. | Amount (0-10) and Species. | No. 1. | No. 2. | No. 3. | No. 4. | No. 5. | No. 6. | No. 7. | No. 8. | | | | |
| | * No. | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | | | | |
| 1 | 29.836 | 55.2 | 29.901 | 54 | 61 | 52 | 49.3 | 48.4 | 55.3 | 51.8 | 50 | 49.7 | 8 | 3 | 8 | 1 | =F | — | 38 | 9mi | 0 | 9mi | 55.5 | 52.3 | 50.7 | 50.2 | 49.4 | 50 | 49.450 | 1 | | | |
| 2 | 740 | 49 | 902 | 49.3 | 60.3 | 50.1 | — | — | 43 | 42.1 | 50.5 | 49.6 | W | 1 | W | 2 | — | — | — | 9mi | 0 | 44 | 43.6 | 41.5 | 40.5 | 49.9 | 46.9 | 48.6 | 45.8 | 2 | | | |
| 3 | 938 | 44 | 30.030 | 44.3 | 60.2 | 50.4 | — | — | 42.1 | 41.2 | 42.8 | 42 | W | 2.5 | 0 | — | — | — | — | 1ci | 0 | 42.6 | 41.8 | 43 | 42 | 47 | 46.9 | 47 | 46 | 3 | | | |
| 4 | 762 | 45.6 | 29.294 | 51 | 63 | 39.5 | — | — | 43 | 39.9 | 52.3 | 48 | 8 | 1 | 8 | 2 | — | 3 shown | — | 9mi | — | 43.2 | 41.2 | 51.9 | 49.2 | 48 | 48 | 47.9 | 47 | 4 | | | |
| 5 | 352 | 49.2 | 6.34 | 48.2 | 54 | 39.8 | 48 | 45.50 | 47.5 | 50.2 | 48.1 | 45.6 | 44.1 | SW | 3 | SW | 2 | >F | 6 Heavy | 0 | 10mi | 2NW | 8mi | 50 | 49.3 | 45.5 | 44 | 47.7 | 48 | 47.8 | 47.9 | 5 | |
| 6 | 894 | 47.5 | 960 | 47.2 | 48 | 41 | 47 | 45.5 | 48.3 | 48 | 44 | 42.7 | 44.2 | SW | 4 | 0 | =F | 1 slight | 0 | 0 | 10mi | 44.5 | 43.7 | 43.3 | 41.8 | 46.2 | 46.9 | 47.7 | 47.8 | 6 | | | |
| 7 | 4.91 | 52.7 | 774 | 46 | 89 | 26 | 48.5 | 48 | 48.3 | 46.9 | 57 | 53.9 | 43.3 | 39 | SW | 0.5 | SW | 4.5 | =F | 2 | 38 | 8mi | — | 55.8 | 53 | 43.2 | 39.7 | 48 | 48 | 47.6 | 46 | 7 | |
| 8 | 965 | 25 | 864 | 53.2 | 54 | 30.6 | 48.5 | 48.4 | 46 | 46.3 | 43.2 | 52.5 | 1.8 | SW | 2.5 | SW | 4 | >F | Shower | 18 | 10mi | — | 47.1 | 44.2 | 52 | 49.5 | 46.5 | 47.4 | 47.3 | 47.2 | 8 | | |
| 9 | 904 | 52 | 30.206 | 46.9 | 54.6 | 44 | 51 | 47 | 45.5 | 43.2 | SW | 2 | SW | 3 | — | — | — | — | — | 1ci | — | 50.9 | 47.6 | 46.9 | 44.5 | 48 | 47.3 | 48 | 47 | 9 | | | |
| 10 | 526 | 45 | 407 | 46.3 | 54.8 | 44 | 45.6 | 44 | 41 | 39.6 | SW | 1.5 | SW | 1 | — | — | 2 shown | — | — | 6ci | 0 | 45.3 | 43 | 42.8 | 41 | 46.9 | 46.8 | 46.9 | 47 | 10 | | | |
| 11 | 342 | 46 | 299 | 48.5 | 53.1 | 39.2 | 44 | 41.2 | 46 | 44.3 | 0 | 0 | 0 | 0 | 0 | 0 | None | — | — | 3ci | — | 44 | 42.5 | 46.9 | 44.5 | 42.5 | 47 | — | 47.3 | 11 | | | |
| 12 | 176 | 46.5 | 214 | 57 | 49 | 38 | 48 | 45.3 | 48 | 46 | 45 | 44.5 | 48.5 | 47 | W | 0.5 | SW | 2 | =F | 5 | 9mi | — | 45.3 | 44.9 | 49 | 47.3 | 47.3 | 47.3 | — | 47.1 | 12 | | |
| 13 | 186 | 43.6 | 610 | 43.2 | 44 | 35.7 | 47.5 | 45.48 | 46 | 41 | 39.9 | 37.3 | 36.7 | SW | 0.5 | SE | 0.5 | >E<F | 0 | 0 | W | 0.5 | 5ci | 40.7 | 40.2 | 38 | 37.5 | 47 | 46.3 | 47.1 | 47.1 | 13 | |
| 14 | 649 | 35.5 | 596 | 48 | 45.8 | 28.8 | 46.3 | 43.47 | 40 | 30.5 | 30.2 | 38.4 | 38.4 | 0 | 0 | 0 | >E<F | 0 | 0 | (Haze) | 0 | 6ci | 32.5 | 32.3 | 38 | 37.7 | 45.3 | 46 | 47 | 46.1 | 14 | | |
| 15 | 540 | 36.2 | 548 | 41.2 | 44.1 | 32 | 46.3 | 43.7 | 48 | 35 | 33.8 | 36 | 35 | W | 0.5 | 0 | >E<F | 0 | 18 | 8ci | — | 35.3 | 34.7 | 37.1 | 35.3 | 45.7 | 45.5 | 46.2 | 45.8 | 15 | | | |
| 16 | 410 | 39.9 | 360 | 37 | 42 | 32 | 40.5 | 39.2 | 34.9 | 33 | 8 | 0.5 | SW | 2 | — | — | — | — | — | 9ci | — | 3ci | 41 | 40 | 35.6 | 34.2 | 44.6 | 42.3 | 44.9 | 43 | 16 | | |
| 17 | 406 | 36 | 426 | 41 | 42 | 32 | 34.2 | 32.1 | 34.6 | 32.5 | W | 1 | W | 2 | — | — | — | — | — | 6ci | 0 | 35.2 | 34.5 | 35.3 | 34.2 | 42.3 | 42.4 | 43 | 43.1 | 17 | | | |
| 18 | 642 | 43 | 700 | 42.4 | 44.9 | 31 | 44.3 | 40.7 | 48 | 40 | 38.7 | 40.3 | 38.8 | W | 1 | W | 1 | 0 | — | 9ci | 2 | 5ci | 41.9 | 40 | 40.5 | 39.1 | 42.6 | 44.4 | 44 | 45 | 18 | | |
| 19 | 702 | 44 | 541 | 40.7 | 43.7 | 36 | 45 | 41.7 | 45.5 | 44 | 38 | 36.2 | 37.2 | 35.9 | W | 1 | W | 1.5 | >E<F | 0 | 0 | 8ci | 0 | 38.5 | 37.2 | 38.9 | 37.5 | 41.7 | 41 | 44.3 | 43.9 | 19 | |
| 20 | 542 | 40.6 | 054 | 41.3 | 47 | 36 | 38 | 36.2 | 44.3 | 39.2 | W | 1 | W | 3 | — | 1 shown | — | — | — | 9ci | — | 38.7 | 37.3 | 41.7 | 40.3 | 41 | 43 | 43 | 43.2 | 20 | | | |
| 21 | 212 | 41.2 | 299 | 43 | 48.3 | 38.2 | 40.5 | 42.7 | 44 | 40.9 | 40 | 39 | 37.5 | W | 1.5 | W | 0.5 | =F | 1 | 0.5 | 7ci | 0 | 10mi | 41.7 | 41 | 39.8 | 38.5 | 42.8 | 42.6 | 42.8 | 42.9 | 21 | |
| 22 | 221 | 41 | 222 | 42 | 44 | 32.1 | 42.3 | 41.7 | 42.3 | 42 | 34.2 | 33 | 42 | 39.6 | W | 2 | W | 2 | >E<F | — | 0 | 8ci | 0 | 3ci | 34.7 | 34 | 42.2 | 40.2 | 41.4 | 41.5 | 42.5 | 42.2 | 22 |
| 23 | 221 | 41.2 | 242 | 42.1 | 44 | 32 | 42 | 39.7 | 41.7 | 39.6 | W | 2 | W | 1 | — | — | — | — | — | 0 | — | 5ci | 42.3 | 40.2 | 42.1 | 40.1 | 41.4 | 41.6 | 42.5 | 42.9 | 23 | | |
| 24 | 246 | 36 | 210 | 37.5 | 43.7 | 32.4 | 34.7 | 33.6 | 36 | 35.8 | W | 2 | W | 1 | — | — | — | — | — | 8ci | — | 6ci | 35.2 | 34.2 | 36.7 | 36.2 | 42 | 41.7 | 42.7 | 40.8 | 24 | | |
| 25 | 218 | 39 | 280 | 40.5 | 43 | 32 | 42 | 39.7 | 42.7 | 41 | 39.8 | 38 | 38.4 | 36 | W | 1 | SW | 1 | — | — | 7ci | 0.5 | 9ci | 40 | 39.5 | 39.5 | 33.8 | 40.5 | 40.2 | 41.4 | 40.2 | 25 | |
| 26 | 214 | 41 | 102 | 43.5 | 44 | 32.5 | 39 | 36.7 | 44.1 | 43.6 | W | 2 | W | 3 | — | — | — | — | — | 5ci | — | 3ci | 40 | 38.6 | 44.7 | 44 | 40 | 40.2 | 40.6 | 41.2 | 26 | | |
| 27 | 29 | 780 | 46.2 | 29 | 642 | 44.4 | 48.2 | 32 | — | 48 | 47.3 | 43 | 40 | W | 4 | W | 5 | — | — | — | 2ci | — | 2ci | 48 | 47.5 | 43 | 41.5 | 41 | 42 | 41 | 42 | 27 | |
| 28 | 668 | 40 | 622 | 37 | 44 | 32 | 40 | 39 | 39.2 | 38 | W | 1 | SW | 1 | — | — | — | — | — | — | 10mi | — | 3ci | 40 | 39.8 | 39.5 | 38.1 | 41.5 | 42 | 41.7 | 40.2 | 28 | |
| 29 | 892 | 47.2 | 30 | 042 | 37.9 | 48.6 | 28.6 | — | 34.9 | 33 | 30.5 | 29.2 | SW | 1 | SW | 1 | — | — | — | 4ci | — | 5ci | 35 | 33.8 | 31.4 | 30.4 | 42.2 | 47.5 | 42.2 | 40 | 29 | | |
| 30 | 870 | 38.2 | 29 | 92 | 31.6 | 33 | 23 | — | 30 | 29.1 | 32 | 31 | 0 | SE | 1 | — | — | — | — | — | 10mi | — | 0 | 30 | 29.4 | 29.8 | 29.8 | 39.3 | 39.4 | 39.3 | 30 | | |
| 31 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 31 | | |
| Sums. | 161310 | 144 | 1311 | 9 | 128 | 123 | 116 | 1510 | 128 | 189 | 4 | 4 | 4 | 109 | 1311 | 1513 | 1410 | 1310 | 139 | 1410 | 1311 | 589 | 233 | 505 | 26 | 92 | 13 | 98 | 15 | 10 | | | |
| Means. | 30.128 | 436 | 30.130 | 44.0 | 48.7 | 35.4 | 41.6 | 39.8 | 41.6 | 39.9 | 135 | 160 | — | — | — | — | — | — | — | — | — | 420 | 40.8 | 41.7 | 40.1 | 44.3 | 44.7 | 44.8 | 44.7 | — | — | | |
| † Total Corrections for Instrumental Errors. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | |
| ‡ Corrections for Diurnal Range. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | |
| “Corrected Means.” | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | |
| No. of Column. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | | | |

BAROMETER, “corrected Mean” at 9 A.M., minus the Correction† = 30.087
for Temp. (Col. 2), = 30.128 — 41 = 30.087
Corrected Mean” of Barometer at 9 P.M., minus the Correction† = 30.088
for Temp. (Col. 4), = 30.130 — 42 = 30.088
Mean at Station, corrected, and at 32°, = 30.088
Correction for height, feet above Mean Sea-level, = 4
Mean, reduced to 32°, and Sea-level, = 30.094
Highest Reading, corrected for Index error, on the 19 th, = 30.702
Lowest Do. Do., on the 4 th, = 29.294
Difference, or Monthly Range, = 1.408

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 4 th, = 63.0
Lowest in Month, corrected for Index errors, on the 30 th, = 23.0
Difference, or Monthly Range, = 40.0
“Corrected Mean” of all the Highest, (Col. 5), = 48.7
“Corrected Mean” of all the Lowest, (Col. 6), = 23.4
Difference, or Mean Daily Range, = 25.3
** Calculated Mean Temperature of Month, = 42.0

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

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = 41.6
Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = 39.8
† Computed Temperature of Dew-Point, = 37.5
† Do. Elastic Force of Vapour, = 2.26
† Do. Weight of Vapour in a Cubic Foot of Air, = —
† Relative Humidity, (Saturation = 100), = 87
RAIN fell on Days; Amount in Inches, = —

| WIND. | | SUMMARY. | | | | | | | | | |
|------------|---|----------|---|----|---|----|----|----|-------------------|-------------|---------------------------------|
| Direction. | N | NE | E | SE | S | SW | W | NW | Calm or Variable. | Mean Force. | Mean Velocity in miles per day. |
| A.M. | 1 | 3 | — | — | 3 | 8 | 11 | 1 | 3 | 135 | — |
| P.M. | 1 | 2 | 1 | 2 | 1 | 10 | 7 | 1 | 5 | 160 | — |
| Mean. | 1 | 2 | 1 | 2 | 9 | 9 | 1 | 4 | 4 | 147 | — |

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

Observations made and Return verified by Hugh Robert Mill & Matthew Ferguson

(Signed) Hugh Robert Mill

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at *Ganton Marine Station*, County of *Midlothian*, in Lat. _____, Long. _____, Distance from Sea _____ miles.
 Height of Cistern of the Barometer above Mean Sea-level *3* feet, above Ground _____ feet.
 During the MONTH of *December* 188 *4*.
 The Hours of Observation are of Greenwich Time.

| ELECTRICITY. | Days of Month. | BAROMETER. | | | | SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M. | | | | HYGROMETER. No. — | | | | WIND. | | | | Readings of the H. Cup Anemometer. No. — 9 h. A.M. | RAIN. | | CLOUDS. | | | | HYGROMETER. ON AIR. | | | | WATER. | | | | 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. | | WATER. | | 9 h. A.M. | | 9 h. P.M. | | 9 h. A.M. | | 9 h. P.M. | | | 9 A.M. | | J. M. | | 9 A.M. | | J. M. | | 9 A.M. | | J. M. | | | | | |
| | | Barometer. | Attach- ed Ther- mometer | Barometer. | Attach- ed Ther- mometer | Max. | Min. | Max. | Min. | Dry bulb. | Wet bulb. | Dry bulb. | Wet bulb. | Direction. | Force. | Direction. | Force. | | Velocity (0—10). | Amount (0—10). | Velocity (0—10). | Amount (0—10). | Velocity (0—10). | Amount (0—10). | Velocity (0—10). | Amount (0—10). | Velocity (0—10). | Amount (0—10). | Velocity (0—10). | Amount (0—10). | | | | |
| | | * 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 | 29.998 | 31.7 | 29.824 | 41.2 | 47 | 27 | | | 32.4 | 31.2 | 33.2 | 33 | 8 | 1 | 8 | 1 | | | 6 | 1 | 4 | 33 | 33 | 35 | 34.5 | 39.3 | 39.6 | 40 | 40 | First in the morning | 1 | | |
| | 2 | 42.2 | 38 | 45.0 | 41 | 41.5 | 29.9 | | | 40.2 | 40 | 40 | 38.9 | 8 | 1 | 8 | 1 | | | 7 | 1 | 6 | 40.3 | 40 | 40.3 | 39.8 | 40 | 40.3 | 40.3 | 40.7 | Rain in the morning | 2 | | |
| | 3 | 28.926 | 42.2 | 15.0 | 42.3 | 40.5 | 36 | | | 48 | 48 | 40.2 | 39.2 | 8 | 1 | 8 | 1 | | | 10 | 1 | 0 | 48.1 | 48 | 40.5 | 40 | 41.2 | 41.3 | 41.4 | 41.3 | | 3 | | |
| | 4 | 29.060 | 38.7 | 29.4 | 40.5 | 38 | 35 | | | 39 | 39 | 38 | 37 | 8 | 1 | 8 | 1 | | | 10 | 1 | 10 | 39 | 39.2 | 39 | 38.7 | 41.2 | 39.8 | 41.5 | 41.3 | Rain onset of day | 4 | | |
| | 5 | 47.2 | 37.5 | 46 | 41.5 | — | — | | | 37.2 | 37.2 | — | — | 7 | 1 | 8 | 1 | | | 8 | 1 | — | 37 | 37 | — | 39.7 | — | 41 | — | — | p.m. observations unavoidably omitted. A.P. | 5 | | |
| | 6 | 33.6 | 44.7 | 21.6 | 43 | 45.4 | 32.7 | | | 44 | 43.7 | 47 | 46.8 | 8 | 1 | 8 | 1 | | | 7 | 1 | 2 | 44.2 | 44.8 | 47 | 47 | 39.6 | 40 | 41 | 40.8 | | 6 | | |
| | 7 | 42.6 | 43.4 | 4.86 | 40.2 | 39 | 35 | | | 45.2 | 44.2 | 40.2 | 40 | 7 | 1 | 8 | 1 | | | 10 | 1 | 10 | 45.7 | 43.6 | 40.6 | 40 | 39.9 | 41 | 40.9 | 41.4 | Rain in the morning | 7 | | |
| | 8 | 45.0 | 40 | 5.88 | 41.6 | 38 | 28 | | | 41 | 40.6 | 39 | 38.6 | 8 | 1 | 8 | 1 | | | 4 | 1 | 4 | 40.4 | 40.1 | 39.9 | 37.5 | 41.3 | 41.4 | 42 | 42 | | 8 | | |
| | 9 | 6.90 | 37.6 | 8.10 | 39 | 46 | 34.5 | | | 38.4 | 38 | 38 | 37.3 | 8 | 1 | 8 | 1 | | | 10 | 1 | 0 | 38.7 | 36.7 | 38.4 | 36.2 | 40 | 39.6 | 41.6 | 41.3 | | 9 | | |
| | 10 | 5.82 | 43.6 | 2.16 | 47 | 48 | 34 | | | 45.7 | 45 | 46 | 45.2 | 8 | 1 | 8 | 1 | | | 10 | 1 | 2 | 45 | 43 | 46.2 | 44.5 | 40.3 | 42.3 | 42.2 | 41.3 | | 10 | | |
| | 11 | 2.18 | 45 | 6.44 | 45 | 51.5 | 31 | | | 45.1 | 44.3 | 47 | 45.3 | 8 | 1 | 8 | 1 | | | 4 | 1 | 4 | 45.5 | 40.6 | 46.5 | 42.5 | 42.2 | 42.2 | 41.5 | 41.4 | | 11 | | |
| | 12 | 9.16 | 41 | 7.07 | 48 | 50.6 | 36 | | | 42.4 | 42 | 50 | 49 | 8 | 1 | 8 | 1 | | | 10 | 1 | 5 | 42.6 | 40.6 | 49 | 47.4 | 41.4 | 42.9 | 41.4 | 42 | | 12 | | |
| | 13 | 8.01 | 47.5 | 8.44 | 46.5 | 58 | 45.5 | | | 49 | 48.2 | 47 | 47 | 7 | 1 | 8 | 1 | | | 8 | 1 | 4 | 49.6 | 48.3 | 48 | 47 | 43 | 43.2 | 42.9 | 43 | Rain at night. | 13 | | |
| | 14 | 4.10 | 44.9 | 4.50 | 40.5 | 41 | 37.9 | | | 44.9 | 44.2 | 39 | 37.6 | 8 | 1 | 8 | 1 | | | 7 | 1 | 7 | 45.2 | 42.5 | 39.8 | 37.5 | 44 | 43 | 44.2 | 43.5 | Rain in morning, squally at night | 14 | | |
| | 15 | 4.60 | 38.5 | 5.20 | 38 | 39.8 | 33 | | | 39.9 | 37.5 | 37 | 37 | 8 | 1 | 8 | 1 | | | 8 | 1 | 4 | 40 | 37.4 | 35.5 | 35.2 | 42 | 41.5 | 42.9 | 42.2 | Snowing at night. | 15 | | |
| | 16 | 6.24 | 38 | 5.01 | 37.2 | 36 | 32 | | | 35.6 | 36 | 36 | 35.8 | 8 | 1 | 8 | 1 | | | 9 | 1 | 6 | 38.3 | 37.6 | 35.4 | 34.8 | 40.5 | 38.9 | 41.5 | 41.2 | Rain in the morning, snow at night | 16 | | |
| | 17 | 4.50 | 33 | 6.84 | 36.6 | 41 | 30 | | | 32 | 31.4 | 35.1 | 35 | 7 | 1 | 8 | 1 | | | 2 | 1 | 2 | 32 | 31.4 | 31 | 29.8 | 32.6 | 37.2 | 38.3 | 41 | 40.6 | | 17 | |
| | 18 | 3.70 | 37.8 | 1.82 | 40.3 | 46 | 34 | | | 40.4 | 40.4 | 36.2 | 36.5 | 8 | 1 | 8 | 1 | | | 8 | 1 | 2 | 40.4 | 40.4 | 39 | 37 | 36 | 38.7 | 39.4 | 40.2 | 40.2 | Rain at night | 18 | |
| | 19 | 0.64 | 38 | 0.26 | 38 | 37 | — | | | 38 | 38 | 39 | 39 | 8 | 1 | 8 | 1 | | | 10 | 1 | 0 | 38.5 | 37.6 | 39 | 37.4 | 39 | 39 | 40 | 40.1 | Occasional heavy showers. Squally | 19 | | |
| | 20 | 2.30 | 40 | 8.32 | 39 | 41.9 | 36.6 | | | 39.2 | 39 | 38.4 | 36.9 | 7 | 1 | 8 | 1 | | | 0 | 1 | 0 | 39.5 | 36.3 | 39.1 | 39.5 | 38.5 | 38.6 | 40.6 | 40.5 | | 20 | | |
| | 21 | 30.204 | 35.1 | 30.401 | 34.5 | 39.4 | 33.7 | | | 38.3 | 38.3 | 24.5 | 35 | 7 | 1 | 8 | 1 | | | 5 | 1 | 5 | 37.9 | 34.5 | 34.5 | 32.8 | 38 | 37.5 | 40.3 | 40 | Part of Quarry freezes | 21 | | |
| | 22 | 4.16 | 29.5 | 3.12 | 29 | 34 | 25 | | | 38 | 38 | 27 | 27 | 8 | 1 | 8 | 1 | | | 0 | 1 | 0 | 37.9 | 34.5 | 34.5 | 32.8 | 38 | 37.5 | 40.3 | 40 | Part of Quarry freezes | 22 | | |
| | 23 | 2.10 | 29 | 1.90 | 32.2 | 37 | 25 | | | 31 | 30.8 | 32.5 | 33 | 7 | 1 | 8 | 1 | | | 9 | 1 | 9 | 37.9 | 34.5 | 34.5 | 32.8 | 38 | 37.5 | 40.3 | 40 | Part of Quarry freezes | 23 | | |
| | 24 | 1.84 | 30.2 | 1.74 | 38 | 41.9 | 30 | | | 32 | 31.5 | 39 | 38 | 7 | 1 | 8 | 1 | | | 7 | 1 | 7 | 37.9 | 34.5 | 34.5 | 32.8 | 38 | 37.5 | 40.3 | 40 | Part of Quarry freezes | 24 | | |
| | 25 | 2.22 | 33.4 | 2.20 | 35 | 39 | 31 | | | 38.9 | 38.4 | 32 | 31.5 | 7 | 1 | 8 | 1 | | | 9 | 1 | 9 | 37.9 | 34.5 | 34.5 | 32.8 | 38 | 37.5 | 40.3 | 40 | Part of Quarry freezes | 25 | | |
| | 26 | 1.44 | 35 | 1.48 | 39 | 39 | 32.4 | | | 32 | 31.9 | 39 | 39.5 | 7 | 1 | 8 | 1 | | | 8 | 1 | 8 | 37.9 | 34.5 | 34.5 | 32.8 | 38 | 37.5 | 40.3 | 40 | Part of Quarry freezes | 26 | | |
| | 27 | 2.02 | 38 | 1.74 | 41 | 41.9 | 34 | | | 38 | 38 | 40.3 | 39.4 | 7 | 1 | 8 | 1 | | | 8 | 1 | 8 | 37.9 | 34.5 | 34.5 | 32.8 | 38 | 37.5 | 40.3 | 40 | Part of Quarry freezes | 27 | | |
| | 28 | 1.48 | 39.6 | 2.9 | 48.2 | 31.9 | 41 | | | 39.1 | 38.4 | 38.4 | 37.3 | 7 | 1 | 8 | 1 | | | 9 | 1 | 9 | 37.9 | 34.5 | 34.5 | 32.8 | 38 | 37.5 | 40.3 | 40 | Part of Quarry freezes | 28 | | |
| | 29 | 2.9 | 88.6 | 8.76 | 35 | 38.7 | 26.2 | | | 37.3 | 36.5 | 35 | 34 | 8 | 1 | 8 | 1 | | | 5 | 1 | 5 | 37.6 | 34.7 | 34.5 | 33.9 | 39.4 | 38.6 | 39.3 | 39.7 | | 29 | | |
| | 30 | 9.94 | 35 | 9.90 | 36 | 36 | 29 | | | 33 | 32.4 | 34 | 33 | 8 | 1 | 8 | 1 | | | 8 | 1 | 8 | 37.6 | 34.7 | 34.5 | 33.9 | 39.4 | 38.6 | 39.3 | 39.7 | | 30 | | |
| | 31 | 30.040 | 35 | 30.136 | 37 | 40.8 | 32 | | | 34.7 | 34.7 | 39 | 37 | 8 | 1 | 8 | 1 | | | 10 | 1 | 10 | 37.6 | 34.7 | 34.5 | 33.9 | 39.4 | 38.6 | 39.3 | 39.7 | | 31 | | |
| Sums. | | 133.4 | 178 | 14.44 | 145 | 157 | 135 | | | 99 | 99 | 62 | 75 | 50 | 51 | 5 | 18.9 | 16.9 | 18.9 | 16.9 | 16.9 | 16.9 | 16.9 | 16.9 | 16.9 | 16.9 | 16.9 | 16.9 | 16.9 | 16.9 | 16.9 | 16.9 | | |
| Means. | | 29.695 | 38.3 | 29.741 | 39.2 | 42.1 | 32.3 | | | 39.0 | 38.6 | 38.6 | 38.0 | 161 | 166 | | 39.1 | 37.8 | 38.8 | 37.5 | 37.7 | 37.7 | 37.7 | 37.7 | 37.7 | 37.7 | 37.7 | 37.7 | 37.7 | 37.7 | 37.7 | 37.7 | | |
| † Total Corrections for Instrumental Errors. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| † Corrections for Diurnal Range. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| "Corrected Means." | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. of Column. | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | | | |

BAROMETER, "corrected Mean" at 9 A.M., minus the Correction†† for Temp. (Col. 2), = *29.666*
 Corrected Mean" of Barometer at 9 P.M., minus the Correction†† for Temp. (Col. 4), = *29.700*
 Mean at Station, corrected, and at 32°, = *29.683*
 Correction for height, feet above Mean Sea-level, = *4*
 Mean, reduced to 32°, and Sea-level, = *29.687*
 Highest Reading, corrected for Index error, on the 22 th, = *30.416*
 Lowest Do. Do., on the 3 th, = *28.926*
 Difference, or Monthly Range, = *1.490*

S.-R. THERMOMETER, (in shade, etc.), Highest in Month, (corrected for Index Errors), on the 12 th, = *58.0*
 Lowest in Month, corrected for Index errors, on the 22 th, = *25.0*
 Difference, or Monthly Range, = *33.0*
 "Corrected Mean" of all the Highest, (Col. 5), = *42.1*
 "Corrected Mean" of all the Lowest, (Col. 6), = *32.3*
 Difference, or Mean Daily Range, = *9.8*
 ** Calculated Mean Temperature of Month, = *37.2*
 S.-R. THERMOMETER, Black Bulb in Sun, Highest, (corrected for Index Errors), on the th, =
 "Corrected Mean," (Col. 7), of Black Bulb, Max. in Sun, =
 Lowest at Night, Black Bulb, (corrected for Index errors), on the th, =
 "Corrected Mean," (Col. 8), of Black Bulb, Min. on grass, =
 Difference of above Means or Range ("exposed"), =

HYGROMETER, Mean (corrected) A.M. and P.M. Reading of Dry Bulb, (Cols. 9 and 11), = *38.8*
 Mean (corrected) A.M. and P.M. Reading of Wet Bulb, (Cols. 10 and 12), = *38.2*
 †† Computed Temperature of Dew-Point, = *37.4*
 †† Do. Elastic Force of Vapour, = *2.29*
 †† Do. Weight of Vapour in a Cubic Foot of Air, =
 †† Relative Humidity, (Saturation = 100), = *95*
 RAIN fell on Days; Amount in Inches, =
 WIND. SUMMARY.
 Direction. N NE E SE S SW W NW Calm or Variable. Mean Force. Mean Velocity in miles per day.
 A.M. 2 4 2 13 8 2 1.61
 P.M. 1 1 2 17 5 1 1.66
 Mean. 1 0.2 1 2 15 7 1 2 1.63
 2.66

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

Observations made at *Ganton Marine Station* by *Matthew Ferguson & H. Turbyle*
 Return verified by

(Signed) *Alfred Robert Mill*

INSTRUCTIONS FOR TAKING METEOROLOGICAL OBSERVATIONS,

WITH REMARKS ON THE USE OF INSTRUMENTS.

OBSERVATIONS,

BOOK POST.

granted
Dec 1864

Mr. ALEXANDER BUCHAN.

Secretary of the Meteorological Society of Scotland.

EDINBURGH.

One of the chief objects that the Scottish Meteorological Society proposed to itself when the Society was established in 1855, was to secure accuracy in the system of observations pursued at all its Stations. Uniformity in the Monthly Results from different Observations, is a desideratum which is absolutely necessary to justify the publication of the Monthly Results from different Observations, in so far as they tend to show the general character of the weather, and to indicate the differences between the Results from two Stations, so very frequently found in the position or character of the Stations, or in the manner of observation, or even from the use of differently constructed instruments. It is therefore hoped, that these who kindly furnish Reports to the Society will, by a scrupulous attention to the following Directions, secure for their Monthly Reports, 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 or bottom of the columns of the Schedule. It is hoped that the utmost punctuality in the time of reading the instruments will be observed. Observers, in some few cases, may find this impossible; in such instances, they are specially requested to mark opposite every reading the time at which it was taken, if not at 9 a.m. or 9 p.m.

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

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

The Barometer originally constructed by Mr. Altie 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 adjusting the instrument to the zero point of the fixed scale when the light is not good. To allow the accuracy with which these Barometers are fitted, they may be said, that one was compared, during the year 1855, with the Society's Standard Barometer, particular care being taken to make the comparison when atmospheric pressure was rising or falling very rapidly, with the result that the readings were found to differ 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 disk, whose edge, when placed on the lid and edge of the cistern. When the ivory disk is placed on the lid and edge of the cistern, the ivory point, 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, should 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 pasted to the back of 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 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, 28.865 inches, or 29.815 inches. Experience having shown that even the very best Observers make these mistakes, particular attention is directed to the matter. When a Barometer having adjustable surfaces has to be removed from its fastenings, the ivory peg must first be screwed on 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 within a quarter of an inch of it, and tap down the instrument; it should then be carried with the cistern inverted. Before exposing the Barometer to the air, the tube is examined whether the traces above the mercury in the tube be ascertained whether the traces are in the cistern, the instrument is a complete vacuum: this is the case if, on inverting the instrument a sharp tap is produced when the ivory peg 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 ivory peg should be used. 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 unscrewing 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 Lovers-boarded Box for Hygrometers, and in Stevenson's Lovers-boarded Box for Thermometers, 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 laths in the centre of the Box, and face the door, which should open to the north.

The Council regard the question of uniformity of height above ground, and method in erecting the Thermometers, as vital in every system of Meteorological Observation, since without it Observations made at different Stations are incompatible, thus rendering it impossible to compare the Climates of places with each other as regards their most important features.

Professor Phillips, and Negretti and Zambra's Maximum Thermometers, and Negretti and Zambra's Minimum Thermometers, are recommended. It is recommended that these Thermometers be graduated on the glass stem. The Minimum Thermometer is liable to two demerits—viz. the column of spirit breaking; and part of the spirit distilling by high temperature and lodging at the top of the tube. This demerit 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, looking down, towards the feet; the object being, on the principle of centrifugal force, to send down the detached portion of spirit till it meets the column of the tube. A few throws, or swings, of the arm will generally be sufficient for the purpose; after which the top of the spirit will be placed in a slanting position, to allow the rest of the spirit still adhering to the sides of the tube to run down to the column. But another method must be adopted, if the column of spirit in the top of the tube be small. Heat should be applied slowly and cautiously to the top end of the column of spirit. Care must be taken that the heat is not applied into vapour by the heat will condense on the surface of the imbricated tube where the bulb is attached. 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 as well.

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 wind. The Maximum should be freely exposed to the sun, and the Minimum should rest on wooden supports a few inches from the surface of the grass, in an open situation. Snow must not be allowed to cover either of these Thermometers; nor the sun's heat to affect the Minimum Thermometer by distillation. Black-bulbs enclosed in 'glass jackets' may 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 one frame. As apparently slight variations from the Hygrometric 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 by the Observer that the muslin is always clean and moist, and the water pure. In frosty weather, observation must be made with great care. The bulb must be moistened by immersion from 15 to 20 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, care must be taken to bring the eye exactly to the level of the top of the index or column of the thermometer. The reading ought to be taken to tenths of a degree, and noted in decimals. Thus the Thermometer will be read—39° 9, 40° 0, or 40° 1; or again, 40° 4, 40° 5, 40° 6, according as it indicates a little under, an exact, or a little over 40°. A little over 40° 2, or 40° 3, and 40° 4, and 40° 5, more or less must be registered 40° 2, or 40° 3, and 40° 4, and 40° 5, respectively. In reading Rutherford's Minimum Thermometer, the indication of that end of the index which is next the surface of the spirit is alone noted. On opening the Thermometer Box, the Dry and Wet Bulb Thermometers are to be first, and rapidly read, inasmuch as they are readily affected by heat from the person of the Observer.

The Hygrometer is read at 9 a.m. and 9 p.m. The Self-Registering Thermometers are read at 9 p.m. only, as indicating 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 occurrence to their proper meteorological day. In the Society's schedules, the indications registered on the 3d are those of a series of phenomena commencing at 9 p.m. on the 2d, and extending till 9 p.m. on the 3d.

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

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

bering of the scale of every instrument; the rejection of Thermometers, the frameworks of which are not likely to stand exposure to the weather, as shown in the past by repeated and annoying breakages of Thermometers of similar construction; and, as regards Maximum Thermometers, either Negretti and Zambra's, or Phillips's, whether they will act at the highest temperatures they may be required to register. By the laws of the Society, Members and Observers have a right to have their instruments compared by the Secretary, and to advise with him regarding the purchase of instruments.

Very great care should be bestowed on the Observations of the Wind, the accuracy of which, both as regards Direction and Force, is so essential towards the right discussion of many of the more important problems of the science.

A Wind-Vane ought to be elevated at least 12 feet above surrounding objects. When it oscillates necessarily, the mean direction should be taken. In all cases, but especially when the Vane is stationary, and when the wind is feeble, reference may be made to the direction of smoke, etc., to be made on the changes in the direction of the wind; and during storms, extra observations at every hour of Greenwhich time. Such a system of simultaneous observation, pursued at different Stations, is likely to give highly valuable and important results, particularly in connection with the system of thickly-planted Stations over a limited district round Edinburgh called Storm Stations, in the course of being established by the Society for the systematic investigation of the relation of the force of the wind to barometric pressure, and other points connected with storms.

The Council would point out the importance of obtaining a correct amount of Wind that passes it per day; from which also the mean Velocity of the Wind at the time of the observation may be ascertained. For this purpose, the Force of the Wind may be found by observation, or by the use of the Anemometer recently brought under the notice of the Society by Mr. T. Stevenson, at Edinburgh, and Mr. R. Ballingall, the Society's Observer, at Edinburgh, are recommended as likely to secure uniformity in taking observations on the Force of the Wind.

Many causes conspire to produce anomalies in Rain Returns, arising partly from the difficulty of obtaining a perfectly unobjectionable situation for observation, and partly from the defective nature of the instruments used.

The Rain-Gauge should not be placed on a slope or terrace, but on a level piece of ground, in an open situation as the Observer can see for it. As it is often difficult to obtain a position as free and unobstructed by surrounding objects as is desirable, trees, buildings, or other obstructions, at least as many feet from their base as they are in height. The more important directions, towards which it is most desirable to have a free exposure, are in the order of their importance, S.W., N.E., S.E., S., and W. The rim of the Gauge must be perfectly level, and fixed so that it will remain level in all weathers, and be at a height of one foot above ground, over grass. In such gauges as Fleming's, which are furnished with a measuring rod attached to a float, the rod ought to be fixed down, and the float rise to its height only at the time the instrument is read, it being found that a stem projecting above the rim of the gauge seriously interferes with the proper measurement of the Rain-fall. When a measuring glass is used, care should be taken to hold it quite perpendicular. The Rain Gauge ought to be taken daily at 9 a.m., and the reading entered in the Returns of the previous day.

If the Gauge is read once a month, the reading is to be made on the first of the month, and the amount entered for the previous month. Snow-falls may, for convenience, be registered in the rain columns, under the following conditions:—When a Snow-shower occurs, it should be noted in the 'Remarks,' and the letter S affixed to the depth of water received in Gauge. The depth of the snow must be measured in some open place where no drift is observed, and registered in addition to, and as a check upon, the indications of the Rain-Gauge. For wind, rain, and snow, as indeed in every column, the Observer cannot be too careful to register observations only; and nothing that partakes of the nature of deduction or inference.

Convenient abbreviations for the non-metadure of Clouds will be found on the other side. The amount of Cloud ought to be estimated on the other side, the greater or less observation of the sky overhead (i.e., within 90° or 50° of the zenith). The state of Clouds that appears to judge of their amount, we ought not to take them into account in the Clouds' column, though their appearance and changes may be noted among the Remarks. The amount of Clouds is read from a scale of 0 to 10; thus, when the sky over-head is free from Clouds it is entered 0, when half covered by Clouds, 5, wholly covered, 10, and so on.

Observations of the Clouds are made at 9 a.m. and at sunset, as illustrating the condition and currents of the upper and lower regions of the atmosphere. The entries in the schedule are to be made in the following manner:—Thus, in the column Velocity and Direction, 9 S.W. will indicate that the upper strata of Clouds travel with the wind from the south-west, at the rate of 9 miles per hour.

2 W. will indicate that the lower regions from west, with a velocity of the speed of the former. Again, in the second column, an entry of 4, st. will indicate that the higher regions are covered to the amount of 4-tenths with stratus Clouds; and that the sky is further obscured to the extent of 2-tenths by lower Clouds of the cumulo stratus kind.

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

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

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

A knowledge of the Temperature of the Sea is not only in itself, but in its relations to that of our island, a most important branch of Meteorology. The Council therefore recommend that the Temperature of the Sea be carefully taken by a properly constructed thermometer, from boats or small craft, where it is impracticable, from the tops of rocks, and as little as possible by currents sweeping along the shore, and as little as possible by the temperature of the land, either gently heated by the sun or cooled by nocturnal radiation. At or near the time of high

water, in cases where the observations cannot be taken daily, the observation may be made on the 6th, 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 Wells ought, when practicable, to be taken, both the depth of the Well, and of the water being noted.

Mention what Test-Papers are used, Schönbein's or Mollit's, etc. The Paper is affixed by a pin to a board in the Ther-mometer 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 p.m. 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 are given at the foot of the column. Besides special and extraordinary observations, great prominence ought to be given in the Remarks column to the following:—1. Difference of direction, velocity, and direction between the Land and the Sea of Clouds; the Colour of the Sea; etc. 2. Remarks ought to be made on the occurrence of Meteors, Auræ borealis, remarkable depressions, elevations, and fluctuations of the Barometer; Thunder-Storms and remarkable falls of Snow, Hail, or Rain. 3. 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, Height of Clouds and of the Snow-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 uncopied, or ruled off for the purpose, from the column of 'Remarks.' Observations in connection with the Periodic Return of the Seasons, possess not only great scientific value, but are of considerable importance in connection with Agriculture, Horticulture, and Natural History. The Council would direct the special attention of Observers to the registration of such phenomena, so that the published Summaries may fairly represent the whole of Scotland. Observations ought to be confined to individual trees and shrubs; to particular species of birds, and, in the case of crops, to specified sorts reared from year to year on a selected piece of ground or farm.

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

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)

Edinburgh, December 1859.

OBSERVATIONS IN CONNECTION WITH THE PERIODICAL RETURN OF THE SEASONS.

| FOREST TREES. | In flower. | In leaf. | Diseased or injured leaves. | CROPS. | Barley, | Bere or Bigg, | Oats, | Wheat, | Beans, | Pease, | Potatoes, | Turnips, | Rye Grass, | MIGRATORY BIRDS. | | | | | | | | | | First in season. | Arrival. | Departure. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Alder, | | | | | | | | | | | | | | | Cuckoo, | Guinea, | House-Swallow, | Lapwing, | Plover, | Sand-Martin, | Starling, | Swan, | Hall or Corn Crane, | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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